GLOBAL COSMETICS VALIDATION MASTER LIST

Emulsions & Creams • Shampoos & Gels • Colour Cosmetics • Cleaning • Preservative Efficacy • Filling • Stability • Packaging • Quality & Safety

2,601 micro-level checkpoints | **41** controlled sections | **India + Ireland** contact details

Prepared for skin care, hair care, personal hygiene, oral care, colour cosmetics, fragrances, powders, aerosols and solid cosmetic manufacturing facilities.

ISHA'S GMP CONSULTANCY PRIVATE LIMITED

Regency Flat, Sri Hi-Tech Construction, 55/66, 1st Cross Street, CRR Puram, Manapakkam, Chennai - 600125, Tamil Nadu, India

Telephone: +91 86675 89984 | +91 99764 91578

Email: info@ishasgmp.com | Website: www.ishasgmp.com

Document No.: ISHA/VAL/COS/2026-00 | Rev. 00 | Issued: 05 November 2026

Document status: corporate screening register for site adaptation; not a validated process, product safety assessment or licensed manufacturing approval.

01 APPLICATION INSTRUCTIONS

Purpose and applicability

This catalogue is a 2,601-point screening index, not 2,601 compulsory validation studies. First classify the product and market, select relevant formula families, equipment and packaging, and record each item as Applicable, Not applicable or To assess with a documented reason.

Cosmetics are not pharmaceutical sterile products

Cosmetics GMP under ISO 22716 is distinct from pharmaceutical GMP. DQ/IQ/OQ/PQ and PPQ are optional risk-based structures to demonstrate fit for intended use, not a universal legal requirement for cosmetics. Media-fill/aseptic process simulations, WFI and ISO Grade A facilities are not automatically required.

Applicable regulatory framework

Review ISO 22716:2007; India Cosmetics Rules 2020 as amended and applicable BIS specifications; EU Regulation (EC) 1223/2009 and its consolidated amendments, including PIF/CPSR; US MoCRA and FDA rules in force; GB cosmetics law; and Australia AICIS/ACCC requirements. Some products move to drug or therapeutic categories depending on ingredients and claims.

Microbiology and preservative efficacy

For water-containing and higher-risk cosmetics evaluate ISO 11930:2019 preservative efficacy, ISO 17516 microbiological quality and relevant cosmetic microbiological methods. ISO 29621:2017 enables risk-based classification of products with low microbial risk; do not automatically require PET for all anhydrous products.

Control strategy and testing

Set product-specific attributes such as pH, rheology, microbiological limits, preservative performance, colour, odour, appearance, package integrity, fill content and stability. Numeric limits, study run counts, sampling frequencies and hold times require documented scientific rationale.

Process scope

Includes lotions/creams, shampoo/body wash, gels, serums, balms, lipsticks, pressed powders, eyeshadow, toothpaste where cosmetic, oxidative hair dye, soap, fragrance, nail lacquer, aerosols, sterile-free/non-sterile cosmetic packaging and other products covered by site risk assessment.

Departments and lifecycle

Includes QA, Production, QC, QC Microbiology, ADL, R&D, Engineering, Warehouse, Purchase, HR/Admin, EHS, IT, Regulatory Affairs and contract manufacturing. Each entry requires an owner and link to an asset, SOP, protocol, verification record, change control, report and periodic review trigger.

Product safety and regulatory records

For EU/GB markets, GMP documentation alone does not replace a qualified safety assessment, cosmetic product safety report, PIF, labeling and notification. For the US, MoCRA product registration/listing, adverse events and safety substantiation have distinct requirements and exemptions.

No unverified company approvals

This publication is a corporate planning template. It does not establish that a plant, process or cosmetic product is validated, safe, approved, GMP-certified, licensed or legally marketable; local qualified QA/RA staff must approve the adapted plan.

02 COVERAGE INDEX

NO.	CONTROLLED SECTION	CHECKPOINTS	PRIMARY OWNER GROUP
01	01 | Validation governance and Quality Assurance	36	QA / Validation
02	02 | Product classification and regulatory boundary	36	QA / RA
03	03 | Premises, hygienic design and flows	75	Engineering / QA
04	04 | HVAC, AHU and environmental conditions	72	Engineering / QA / QC Microbiology
05	05 | Process water, treatment and distribution	90	Engineering / QC Microbiology
06	06 | Compressed air, utilities and thermal systems	78	Engineering / Production
07	07 | Raw material receipt, storage and sampling	66	Warehouse / QC / QA
08	08 | Weighing, dispensing and transfers	63	Production / QC / QA
09	09 | Creams, lotions and emulsions equipment	84	Production / Engineering
10	10 | Shampoos, body wash and surfactant liquids	66	Production / Engineering
11	11 | Gels, serums and low-viscosity skincare	60	Production / R&D / QA
12	12 | Balms, waxes, lipsticks and anhydrous products	66	Production / Engineering
13	13 | Dry powders, talc and pressed products	72	Production / EHS
14	14 | Colour cosmetics and pigments	60	Production / R&D
15	15 | Toothpaste and non-therapeutic oral care	60	Production / QA / QC
16	16 | Hair conditioners, dyes and treatments	60	Production / QC / RA
17	17 | Soaps, syndet and solid personal-care bars	66	Production / Engineering
18	18 | Fragrances, solvents, nail products and aerosols	75	Production / EHS / QA
19	19 | Bulk holding, intermediate transfer and hold times	63	Production / QA / QC
20	20 | Filling creams, liquids, gels and pastes	93	Production / Engineering
21	21 | Powder, compact and lipstick filling/finishing	66	Production / Engineering
22	22 | Spray, pump and aerosol pack validation	60	Production / Engineering / QA
23	23 | Packaging, label inspection and serialization	81	Packaging / QA / Engineering
24	24 | Cleaning and sanitation validation	78	QA / Production / QC Microbiology
25	25 | Manufacturing process validation and scale up	33	QA / Production / R&D
26	26 | Microbiology, preservative efficacy and hygiene	84	QC Microbiology / QA
27	27 | QC physicochemical test method validation	51	QC / ADL
28	28 | QC laboratory instruments and calibration	126	QC / Engineering / ADL
29	29 | Analytical development, R&D and formulation transfer	63	R&D / ADL / QA
30	30 | Stability, shelf life and compatibility	45	R&D / QC / QA / RA
31	31 | Product safety, claims and consumer use	45	R&D / RA / QA
32	32 | Regulatory product dossier, labeling and PIF	33	RA / QA
33	33 | Computerized systems and data controls	72	IT / QA / Production / QC
34	34 | Warehouse temperature, distribution and transport	69	Warehouse / QA
35	35 | Supplier, purchase and outsourced services	30	Purchase / QA / RA
36	36 | Engineering maintenance and metrology	72	Engineering / QA
37	37 | HR, personnel hygiene and administration	45	HR / Admin / QA

NO.	CONTROLLED SECTION	CHECKPOINTS	PRIMARY OWNER GROUP
38	38 | Environmental, health and safety controls	72	EHS / Engineering
39	39 | CAPA, change, complaints and recall effectiveness	30	QA / Regulatory / Operations
40	40 | Special population, high-risk and claims-specific controls	60	QA / QC / RA / R&D
41	41 | Contract manufacture, technology transfer and handover	45	QA / Purchase / Engineering
	TOTAL	2601	Cross-functional QA / Engineering / QC / Production / RA

03 REGULATORY REFERENCE CROSSWALK

C01 | ISO - ISO 22716:2007 Cosmetics GMP - production, control, storage and shipment

https://www.iso.org/standard/36437.html

C02 | India / CDSCO - Cosmetics Rules 2020 including applicable amendments, licensing, manufacture, quality specifications and Ninth Schedule

https://www.cdsco.gov.in/opencms/opencms/en/Cosmetics/cosmetics/

C03 | India / CDSCO - Official Cosmetics Rules 2020 original text; confirm amendment status separately

https://cdsco.mohfw.gov.in/opencms/resources/UploadCDSCOWeb/2022/cos_rules/Cosmetics%20Rules%202020.pdf

C04 | EU / EC - Regulation (EC) 1223/2009 on cosmetic products (current consolidated version and changes)

https://eur-lex.europa.eu/eli/reg/2009/1223/oj/eng

C05 | EU / EC - Guidance on Cosmetic Product Safety Reports - Commission Implementing Decision 2013/674/EU

https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32013D0674

C06 | US FDA - FD&C Act and Modernization of Cosmetics Regulation Act of 2022 (MoCRA)

https://www.fda.gov/cosmetics/cosmetics-laws-regulations/modernization-cosmetics-regulation-act-2022-mocra

C07 | US FDA - FDA Cosmetics Direct registration and listing guidance; applicable exemptions

https://www.fda.gov/cosmetics/registration-listing-cosmetic-product-facilities-and-products

C08 | ISO - ISO 11930:2019 cosmetics preservative-efficacy/antimicrobial protection

https://www.iso.org/standard/75058.html

C09 | ISO - ISO 17516:2014 cosmetics microbiological limits (monitor current revision)

https://www.iso.org/standard/59938.html

C10 | ISO - ISO 29621:2017 microbiological low-risk assessment

https://www.iso.org/standard/68310.html

C11 | ISO - ISO 21149, ISO 16212, ISO 18416 and other applicable cosmetics microbiological methods

https://www.iso.org/committee/54018.html

C12 | ISO - ISO 16128-1/2 - natural / organic cosmetics ingredient and product classification principles (not safety certification)

https://www.iso.org/standard/62503.html

C13 | UK / OPSS - GB cosmetics responsible person, Product Information File, safety report and notification requirements

https://www.gov.uk/government/publications/cosmetic-products-enforcement-regulations-2013

C14 | UK / OPSS - Submit cosmetic product notifications (SCPN) for Great Britain

https://submit.cosmetic-product-notifications.service.gov.uk/

C15 | Australia / AICIS - Cosmetics ingredients under AICIS; classification and ingredient obligations

https://www.industrialchemicals.gov.au/cosmetics-and-soap/personal-care-skincare-make-and-other-cosmetic-products

C16 | Australia / TGA - Distinction between cosmetics and therapeutic goods; sunscreen, treatment claims, etc.

https://www.tga.gov.au/resources/guidance/determining-if-your-product-cosmetic-or-therapeutic-good

C17 | BIS - Applicable Indian Standards for cosmetics, ingredients and methods; verify current BIS listing and Ninth Schedule

https://www.services.bis.gov.in/php/BIS_2.0/

C18 | ISO - ISO/IEC 17025 general competence of testing/calibration labs, only when applicable or seeking accreditation

https://www.iso.org/standard/66912.html

C19 | ISO - ISO 14644 cleanroom classification as applicable to process risk; not universal cosmetics requirement

https://www.iso.org/search.html?q=ISO%2014644

C20 | Professional practice - Risk-based lifecycle qualification and good analytical science; pharma frameworks only where independently applicable

https://www.iso.org/standard/36437.html

C21 | EU / EC - Cosmetic ingredients restrictions, claims, allergens, nanomaterials - verify current EU Annexes

https://single-market-economy.ec.europa.eu/sectors/cosmetics/legislation_en

C22 | EU / EC - SCCS notes of guidance for cosmetics ingredient safety assessment

https://single-market-economy.ec.europa.eu/sectors/cosmetics/scientific-and-technical-assessment_en

04 LIFECYCLE STAGES & EVIDENCE CONTROL

STAGE	EXPECTED EVIDENCE PRINCIPLE
Classification and scope	Determine cosmetic, drug, medicinal, medical-device or therapeutic status separately for India, EU, GB, US and Australia. Applicable cosmetic regulations may differ.
Product design and safety	Define composition, intended consumer, use site, allergens, restricted ingredients and safety evidence; create CPSR/PIF if applicable.
URS / hygienic design	Risk-based requirements for vessels, drains, materials of contact, mixing and fill, hygiene, utilities and environmental controls.
Supplier / FAT / SAT evidence	Link design approval, supplier testing and site commissioning; establish when formal qualification is warranted.
IQ / installation evidence	Tag, as-built interfaces, product-contact material, lubrication, calibrations, cleanability and equipment manuals.
OQ / operating-window challenge	Challenge speed, temperature, mixing time, viscosity range, dosing, sensor faults, alarms, recovery and safe shutdown.
PQ / process reproducibility	Demonstrate suitable repeatability for representative formula/lot/pack/shift combinations using risk-based sample plans.
Process validation / scale-up	Relate mixing, emulsion, surfactant, gel, powder, fragrance, soap and filling parameters to product quality attributes.
Cleaning and hygienic controls	Study worst-case residue, manual cleaning, swab/rinse recovery, water quality, dirty/clean hold and disinfectant application.
Microbiological protection	Use ISO 11930 where relevant; use ISO 29621 for low-risk determination and ISO 17516 microbial quality assessment.
Laboratory test method verification	Show accuracy, precision, suitability and reproducibility for pH, viscosity, HPLC, GC, colours, metals, microbial methods and selected assays.
Stability and package compatibility	Assess real time, stress, freeze-thaw, in-use, preservatives, material interactions, packaging leakage and claim-support study design.
Warehousing and distribution	Map critical temperature ranges, track lots, confirm pack transport/stacking performance and handle excursions.
Software and records	Qualify recipe controls, electronic batch/LIMS records, barcode logic, audit trails, backups and access as risk dictates.
Change / deviations / CAPA	Apply targeted requalification after equipment changes, supplier/formula substitutions, quality failures or new claims.

01 VALIDATION GOVERNANCE AND QUALITY ASSURANCE

36 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-01-0001	Cosmetics Validation Master Plan	Study design / protocol: Define scope, intended facility/product families, qualification logic and revalidation policy	Predefined sampling, method, worst cases, limitations and acceptance rationale for Signed VMP, validated-state inventory and departmental responsibility matrix.	Planning	All cosmetic product families	C01 C02 C04 C06 C20	High
CTV-01-0002	Cosmetics Validation Master Plan	Challenge / study execution: Define scope, intended facility/product families, qualification logic and revalidation policy	Independent raw test data, deviations, control checks, representative conditions and Signed VMP, validated-state inventory and departmental responsibility matrix.	Execution	All cosmetic product families	C01 C02 C04 C06 C20	High
CTV-01-0003	Cosmetics Validation Master Plan	Result assessment / report / review: Define scope, intended facility/product families, qualification logic and revalidation policy	Approved conclusions, corrective actions, periodic trend or change-impact review of Signed VMP, validated-state inventory and departmental responsibility matrix.	Review	All cosmetic product families	C01 C02 C04 C06 C20	Medium
CTV-01-0004	Validation scope decision tree	Study design / protocol: Distinguish GMP control, equipment qualification, verification and true process validation	Predefined sampling, method, worst cases, limitations and acceptance rationale for Documented risk rationale; no blanket pharma IQ/OQ/PQ mandate claimed.	Planning	All cosmetic product families	C01 C02 C04 C06 C20	High
CTV-01-0005	Validation scope decision tree	Challenge / study execution: Distinguish GMP control, equipment qualification, verification and true process validation	Independent raw test data, deviations, control checks, representative conditions and Documented risk rationale; no blanket pharma IQ/OQ/PQ mandate claimed.	Execution	All cosmetic product families	C01 C02 C04 C06 C20	High
CTV-01-0006	Validation scope decision tree	Result assessment / report / review: Distinguish GMP control, equipment qualification, verification and true process validation	Approved conclusions, corrective actions, periodic trend or change-impact review of Documented risk rationale; no blanket pharma IQ/OQ/PQ mandate claimed.	Review	All cosmetic product families	C01 C02 C04 C06 C20	Medium
CTV-01-0007	Criticality and product risk assessment	Study design / protocol: Determine eye, oral, child, impaired-skin, preservative and water risk	Predefined sampling, method, worst cases, limitations and acceptance rationale for Risk matrix linked to product use and formulation.	Planning	All cosmetic product families	C01 C02 C04 C06 C20	High
CTV-01-0008	Criticality and product risk assessment	Challenge / study execution: Determine eye, oral, child, impaired-skin, preservative and water risk	Independent raw test data, deviations, control checks, representative conditions and Risk matrix linked to product use and formulation.	Execution	All cosmetic product families	C01 C02 C04 C06 C20	High
CTV-01-0009	Criticality and product risk assessment	Result assessment / report / review: Determine eye, oral, child, impaired-skin, preservative and water risk	Approved conclusions, corrective actions, periodic trend or change-impact review of Risk matrix linked to product use and formulation.	Review	All cosmetic product families	C01 C02 C04 C06 C20	Medium
CTV-01-0010	Product quality attributes	Study design / protocol: Map appearance, pH, viscosity, colour, odour, microbial safety and performance	Predefined sampling, method, worst cases, limitations and acceptance rationale for CQA register and batch control strategy.	Planning	All cosmetic product families	C01 C02 C04 C06 C20	High
CTV-01-0011	Product quality attributes	Challenge / study execution: Map appearance, pH, viscosity, colour, odour, microbial safety and performance	Independent raw test data, deviations, control checks, representative conditions and CQA register and batch control strategy.	Execution	All cosmetic product families	C01 C02 C04 C06 C20	High
CTV-01-0012	Product quality attributes	Result assessment / report / review: Map appearance, pH, viscosity, colour, odour, microbial safety and performance	Approved conclusions, corrective actions, periodic trend or change-impact review of CQA register and batch control strategy.	Review	All cosmetic product families	C01 C02 C04 C06 C20	Medium
CTV-01-0013	Validation protocol lifecycle	Study design / protocol: Define preapproval, version control, deviations, deviations before release	Predefined sampling, method, worst cases, limitations and acceptance rationale for Approved protocol, raw data and post-study report workflow.	Planning	All cosmetic product families	C01 C02 C04 C06 C20	High
CTV-01-0014	Validation protocol lifecycle	Challenge / study execution: Define preapproval, version control, deviations, deviations before release	Independent raw test data, deviations, control checks, representative conditions and Approved protocol, raw data and post-study report workflow.	Execution	All cosmetic product families	C01 C02 C04 C06 C20	High
CTV-01-0015	Validation protocol lifecycle	Result assessment / report / review: Define preapproval, version control, deviations, deviations before release	Approved conclusions, corrective actions, periodic trend or change-impact review of Approved protocol, raw data and post-study report workflow.	Review	All cosmetic product families	C01 C02 C04 C06 C20	Medium
CTV-01-0016	Data integrity of validation studies	Study design / protocol: Ensure original electronic/manual records are traceable and corrected transparently	Predefined sampling, method, worst cases, limitations and acceptance rationale for Contemporaneous records, audit trail and review signatures.	Planning	All cosmetic product families	C01 C02 C04 C06 C20	High
CTV-01-0017	Data integrity of validation studies	Challenge / study execution: Ensure original electronic/manual records are traceable and corrected transparently	Independent raw test data, deviations, control checks, representative conditions and Contemporaneous records, audit trail and review signatures.	Execution	All cosmetic product families	C01 C02 C04 C06 C20	High
CTV-01-0018	Data integrity of validation studies	Result assessment / report / review: Ensure original electronic/manual records are traceable and corrected transparently	Approved conclusions, corrective actions, periodic trend or change-impact review of Contemporaneous records, audit trail and review signatures.	Review	All cosmetic product families	C01 C02 C04 C06 C20	Medium
CTV-01-0019	Equipment inventory completeness	Study design / protocol: Reconcile equipment, lab instruments, packaging machines and utilities	Predefined sampling, method, worst cases, limitations and acceptance rationale for Tagged asset criticality and qualification history.	Planning	All cosmetic product families	C01 C02 C04 C06 C20	High
CTV-01-0020	Equipment inventory completeness	Challenge / study execution: Reconcile equipment, lab instruments, packaging machines and utilities	Independent raw test data, deviations, control checks, representative conditions and Tagged asset criticality and qualification history.	Execution	All cosmetic product families	C01 C02 C04 C06 C20	High
CTV-01-0021	Equipment inventory completeness	Result assessment / report / review: Reconcile equipment, lab instruments, packaging machines and utilities	Approved conclusions, corrective actions, periodic trend or change-impact review of Tagged asset criticality and qualification history.	Review	All cosmetic product families	C01 C02 C04 C06 C20	Medium
CTV-01-0022	Change and revalidation	Study design / protocol: Evaluate new formulation, ingredient, scale, packaging, software and supplier change	Predefined sampling, method, worst cases, limitations and acceptance rationale for Impact assessment with risk-based re-test decisions.	Planning	All cosmetic product families	C01 C02 C04 C06 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-01-0023	Change and revalidation	Challenge / study execution: Evaluate new formulation, ingredient, scale, packaging, software and supplier change	Independent raw test data, deviations, control checks, representative conditions and Impact assessment with risk-based re-test decisions.	Execution	All cosmetic product families	C01 C02 C04 C06 C20	High
CTV-01-0024	Change and revalidation	Result assessment / report / review: Evaluate new formulation, ingredient, scale, packaging, software and supplier change	Approved conclusions, corrective actions, periodic trend or change-impact review of Impact assessment with risk-based re-test decisions.	Review	All cosmetic product families	C01 C02 C04 C06 C20	Medium
CTV-01-0025	Process capability / CPV	Study design / protocol: Select trend parameters for repeat production	Predefined sampling, method, worst cases, limitations and acceptance rationale for Trend charts, sampling justification and alerts.	Planning	All cosmetic product families	C01 C02 C04 C06 C20	High
CTV-01-0026	Process capability / CPV	Challenge / study execution: Select trend parameters for repeat production	Independent raw test data, deviations, control checks, representative conditions and Trend charts, sampling justification and alerts.	Execution	All cosmetic product families	C01 C02 C04 C06 C20	High
CTV-01-0027	Process capability / CPV	Result assessment / report / review: Select trend parameters for repeat production	Approved conclusions, corrective actions, periodic trend or change-impact review of Trend charts, sampling justification and alerts.	Review	All cosmetic product families	C01 C02 C04 C06 C20	Medium
CTV-01-0028	Master cleaning strategy	Study design / protocol: Define product groups, shared train and worst-case representative products	Predefined sampling, method, worst cases, limitations and acceptance rationale for Residue and microbiological risk-based cleaning plan.	Planning	All cosmetic product families	C01 C02 C04 C06 C20	High
CTV-01-0029	Master cleaning strategy	Challenge / study execution: Define product groups, shared train and worst-case representative products	Independent raw test data, deviations, control checks, representative conditions and Residue and microbiological risk-based cleaning plan.	Execution	All cosmetic product families	C01 C02 C04 C06 C20	High
CTV-01-0030	Master cleaning strategy	Result assessment / report / review: Define product groups, shared train and worst-case representative products	Approved conclusions, corrective actions, periodic trend or change-impact review of Residue and microbiological risk-based cleaning plan.	Review	All cosmetic product families	C01 C02 C04 C06 C20	Medium
CTV-01-0031	Internal audit readiness	Study design / protocol: Audit protocol-to-report-to-record traceability	Predefined sampling, method, worst cases, limitations and acceptance rationale for Audit trail, open gaps and CAPA completion evidence.	Planning	All cosmetic product families	C01 C02 C04 C06 C20	High
CTV-01-0032	Internal audit readiness	Challenge / study execution: Audit protocol-to-report-to-record traceability	Independent raw test data, deviations, control checks, representative conditions and Audit trail, open gaps and CAPA completion evidence.	Execution	All cosmetic product families	C01 C02 C04 C06 C20	High
CTV-01-0033	Internal audit readiness	Result assessment / report / review: Audit protocol-to-report-to-record traceability	Approved conclusions, corrective actions, periodic trend or change-impact review of Audit trail, open gaps and CAPA completion evidence.	Review	All cosmetic product families	C01 C02 C04 C06 C20	Medium
CTV-01-0034	Validation deviations and closure	Study design / protocol: Assess failed challenge or unresolved acceptance criteria	Predefined sampling, method, worst cases, limitations and acceptance rationale for Approved investigation, risk impact and retest rationale.	Planning	All cosmetic product families	C01 C02 C04 C06 C20	High
CTV-01-0035	Validation deviations and closure	Challenge / study execution: Assess failed challenge or unresolved acceptance criteria	Independent raw test data, deviations, control checks, representative conditions and Approved investigation, risk impact and retest rationale.	Execution	All cosmetic product families	C01 C02 C04 C06 C20	High
CTV-01-0036	Validation deviations and closure	Result assessment / report / review: Assess failed challenge or unresolved acceptance criteria	Approved conclusions, corrective actions, periodic trend or change-impact review of Approved investigation, risk impact and retest rationale.	Review	All cosmetic product families	C01 C02 C04 C06 C20	Medium

02 PRODUCT CLASSIFICATION AND REGULATORY BOUNDARY

36 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-02-0001	Intended cosmetic use	Study design / protocol: Confirm cosmetic definition from claims, ingredients, route, dosage and packaging	Predefined sampling, method, worst cases, limitations and acceptance rationale for Market-by-market product classification file.	Planning	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High
CTV-02-0002	Intended cosmetic use	Challenge / study execution: Confirm cosmetic definition from claims, ingredients, route, dosage and packaging	Independent raw test data, deviations, control checks, representative conditions and Market-by-market product classification file.	Execution	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High
CTV-02-0003	Intended cosmetic use	Result assessment / report / review: Confirm cosmetic definition from claims, ingredients, route, dosage and packaging	Approved conclusions, corrective actions, periodic trend or change-impact review of Market-by-market product classification file.	Review	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	Medium
CTV-02-0004	Drug/cosmetic borderline	Study design / protocol: Assess anti-acne, anti-dandruff, skin-lightening, sunscreen and antiseptic claims	Predefined sampling, method, worst cases, limitations and acceptance rationale for Rationale for drug/therapeutic or cosmetic route.	Planning	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High
CTV-02-0005	Drug/cosmetic borderline	Challenge / study execution: Assess anti-acne, anti-dandruff, skin-lightening, sunscreen and antiseptic claims	Independent raw test data, deviations, control checks, representative conditions and Rationale for drug/therapeutic or cosmetic route.	Execution	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High
CTV-02-0006	Drug/cosmetic borderline	Result assessment / report / review: Assess anti-acne, anti-dandruff, skin-lightening, sunscreen and antiseptic claims	Approved conclusions, corrective actions, periodic trend or change-impact review of Rationale for drug/therapeutic or cosmetic route.	Review	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	Medium
CTV-02-0007	Cosmetic injectables exclusion	Study design / protocol: Screen invasive products and injectables for medical/device/therapeutic pathways	Predefined sampling, method, worst cases, limitations and acceptance rationale for Regulatory referral record rather than cosmetics GMP validation.	Planning	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High
CTV-02-0008	Cosmetic injectables exclusion	Challenge / study execution: Screen invasive products and injectables for medical/device/therapeutic pathways	Independent raw test data, deviations, control checks, representative conditions and Regulatory referral record rather than cosmetics GMP validation.	Execution	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High
CTV-02-0009	Cosmetic injectables exclusion	Result assessment / report / review: Screen invasive products and injectables for medical/device/therapeutic pathways	Approved conclusions, corrective actions, periodic trend or change-impact review of Regulatory referral record rather than cosmetics GMP validation.	Review	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	Medium
CTV-02-0010	India manufacturing license applicability	Study design / protocol: Confirm state license, product type, manufacturing site and prescribed standard	Predefined sampling, method, worst cases, limitations and acceptance rationale for Cosmetics Rules 2020 / amendment mapping.	Planning	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High
CTV-02-0011	India manufacturing license applicability	Challenge / study execution: Confirm state license, product type, manufacturing site and prescribed standard	Independent raw test data, deviations, control checks, representative conditions and Cosmetics Rules 2020 / amendment mapping.	Execution	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High
CTV-02-0012	India manufacturing license applicability	Result assessment / report / review: Confirm state license, product type, manufacturing site and prescribed standard	Approved conclusions, corrective actions, periodic trend or change-impact review of Cosmetics Rules 2020 / amendment mapping.	Review	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	Medium
CTV-02-0013	BIS product standard applicability	Study design / protocol: Identify current product-specific Indian Standards / limits	Predefined sampling, method, worst cases, limitations and acceptance rationale for Approved BIS applicability and test-method register.	Planning	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High
CTV-02-0014	BIS product standard applicability	Challenge / study execution: Identify current product-specific Indian Standards / limits	Independent raw test data, deviations, control checks, representative conditions and Approved BIS applicability and test-method register.	Execution	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High
CTV-02-0015	BIS product standard applicability	Result assessment / report / review: Identify current product-specific Indian Standards / limits	Approved conclusions, corrective actions, periodic trend or change-impact review of Approved BIS applicability and test-method register.	Review	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	Medium
CTV-02-0016	EU RP and PIF duties	Study design / protocol: Map EU responsible person, safety assessment and PIF documentation	Predefined sampling, method, worst cases, limitations and acceptance rationale for PIF/CPSR record and GMP declaration evidence.	Planning	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High
CTV-02-0017	EU RP and PIF duties	Challenge / study execution: Map EU responsible person, safety assessment and PIF documentation	Independent raw test data, deviations, control checks, representative conditions and PIF/CPSR record and GMP declaration evidence.	Execution	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High
CTV-02-0018	EU RP and PIF duties	Result assessment / report / review: Map EU responsible person, safety assessment and PIF documentation	Approved conclusions, corrective actions, periodic trend or change-impact review of PIF/CPSR record and GMP declaration evidence.	Review	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	Medium
CTV-02-0019	US MoCRA requirements	Study design / protocol: Screen facility registration, product listing, safety substantiation and exemptions	Predefined sampling, method, worst cases, limitations and acceptance rationale for US obligations matrix and documentary evidence.	Planning	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High
CTV-02-0020	US MoCRA requirements	Challenge / study execution: Screen facility registration, product listing, safety substantiation and exemptions	Independent raw test data, deviations, control checks, representative conditions and US obligations matrix and documentary evidence.	Execution	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High
CTV-02-0021	US MoCRA requirements	Result assessment / report / review: Screen facility registration, product listing, safety substantiation and exemptions	Approved conclusions, corrective actions, periodic trend or change-impact review of US obligations matrix and documentary evidence.	Review	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	Medium
CTV-02-0022	US GMP pending/active rule status	Study design / protocol: Check applicable federal cosmetic GMP rulemaking at time of use	Predefined sampling, method, worst cases, limitations and acceptance rationale for No unsupported claim that ISO 22716 is federally mandated as US final rule.	Planning	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-02-0023	US GMP pending/active rule status	Challenge / study execution: Check applicable federal cosmetic GMP rulemaking at time of use	Independent raw test data, deviations, control checks, representative conditions and No unsupported claim that ISO 22716 is federally mandated as US final rule.	Execution	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High
CTV-02-0024	US GMP pending/active rule status	Result assessment / report / review: Check applicable federal cosmetic GMP rulemaking at time of use	Approved conclusions, corrective actions, periodic trend or change-impact review of No unsupported claim that ISO 22716 is federally mandated as US final rule.	Review	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	Medium
CTV-02-0025	GB responsible person and SCPN	Study design / protocol: Determine market placement and GB notification requirements	Predefined sampling, method, worst cases, limitations and acceptance rationale for SCPN, GB PIF, safety assessment and label obligations.	Planning	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High
CTV-02-0026	GB responsible person and SCPN	Challenge / study execution: Determine market placement and GB notification requirements	Independent raw test data, deviations, control checks, representative conditions and SCPN, GB PIF, safety assessment and label obligations.	Execution	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High
CTV-02-0027	GB responsible person and SCPN	Result assessment / report / review: Determine market placement and GB notification requirements	Approved conclusions, corrective actions, periodic trend or change-impact review of SCPN, GB PIF, safety assessment and label obligations.	Review	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	Medium
CTV-02-0028	Australia AICIS/TGA classification	Study design / protocol: Assess therapeutic claims, Poisons Standard and ingredient introductions	Predefined sampling, method, worst cases, limitations and acceptance rationale for AICIS registration/chemical categorisation or TGA referral.	Planning	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High
CTV-02-0029	Australia AICIS/TGA classification	Challenge / study execution: Assess therapeutic claims, Poisons Standard and ingredient introductions	Independent raw test data, deviations, control checks, representative conditions and AICIS registration/chemical categorisation or TGA referral.	Execution	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High
CTV-02-0030	Australia AICIS/TGA classification	Result assessment / report / review: Assess therapeutic claims, Poisons Standard and ingredient introductions	Approved conclusions, corrective actions, periodic trend or change-impact review of AICIS registration/chemical categorisation or TGA referral.	Review	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	Medium
CTV-02-0031	Restricted/colourant ingredient market limits	Study design / protocol: Check positive, restricted, prohibited and colouring ingredient lists	Predefined sampling, method, worst cases, limitations and acceptance rationale for Ingredient legal review for destination markets.	Planning	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High
CTV-02-0032	Restricted/colourant ingredient market limits	Challenge / study execution: Check positive, restricted, prohibited and colouring ingredient lists	Independent raw test data, deviations, control checks, representative conditions and Ingredient legal review for destination markets.	Execution	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High
CTV-02-0033	Restricted/colourant ingredient market limits	Result assessment / report / review: Check positive, restricted, prohibited and colouring ingredient lists	Approved conclusions, corrective actions, periodic trend or change-impact review of Ingredient legal review for destination markets.	Review	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	Medium
CTV-02-0034	Regulatory change management	Study design / protocol: Track updates to India, EU/GB, US and Australia frameworks	Predefined sampling, method, worst cases, limitations and acceptance rationale for Effective-date review and batch/label impact log.	Planning	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High
CTV-02-0035	Regulatory change management	Challenge / study execution: Track updates to India, EU/GB, US and Australia frameworks	Independent raw test data, deviations, control checks, representative conditions and Effective-date review and batch/label impact log.	Execution	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	High
CTV-02-0036	Regulatory change management	Result assessment / report / review: Track updates to India, EU/GB, US and Australia frameworks	Approved conclusions, corrective actions, periodic trend or change-impact review of Effective-date review and batch/label impact log.	Review	India, US, EU, UK, Australia exports	C02 C04 C06 C13 C15 C16 C21	Medium

03 PREMISES, HYGIENIC DESIGN AND FLOWS

75 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-03-0001	Raw material receiving dock	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and quarantine zoning and pest/particulate intrusion mapped to material integrity.	Design	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0002	Raw material receiving dock	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Raw material receiving dock.	Installation	Production, labs, warehouse and staff	C01 C02 C20	Medium
CTV-03-0003	Raw material receiving dock	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of quarantine zoning and pest/particulate intrusion; verify material integrity against predetermined product-specific criteria.	Operational	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0004	Raw material receiving dock	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of material integrity.	Operational	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0005	Raw material receiving dock	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and material integrity trends; number of runs justified by risk.	Performance	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0006	Raw material receiving dock	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting material integrity.	Lifecycle	Production, labs, warehouse and staff	C01 C02 C20	Medium
CTV-03-0007	Airlocks, material transfer openings	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and door interlocks and contamination paths mapped to controlled traffic.	Design	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0008	Airlocks, material transfer openings	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Airlocks, material transfer openings.	Installation	Production, labs, warehouse and staff	C01 C02 C20	Medium
CTV-03-0009	Airlocks, material transfer openings	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of door interlocks and contamination paths; verify controlled traffic against predetermined product-specific criteria.	Operational	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0010	Airlocks, material transfer openings	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of controlled traffic.	Operational	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0011	Airlocks, material transfer openings	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and controlled traffic trends; number of runs justified by risk.	Performance	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0012	Airlocks, material transfer openings	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting controlled traffic.	Lifecycle	Production, labs, warehouse and staff	C01 C02 C20	Medium
CTV-03-0013	Dispensing booths	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and dust extraction and cross-contamination boundaries mapped to weighing integrity.	Design	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0014	Dispensing booths	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Dispensing booths.	Installation	Production, labs, warehouse and staff	C01 C02 C20	Medium
CTV-03-0015	Dispensing booths	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of dust extraction and cross-contamination boundaries; verify weighing integrity against predetermined product-specific criteria.	Operational	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0016	Dispensing booths	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of weighing integrity.	Operational	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0017	Dispensing booths	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and weighing integrity trends; number of runs justified by risk.	Performance	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0018	Dispensing booths	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting weighing integrity.	Lifecycle	Production, labs, warehouse and staff	C01 C02 C20	Medium
CTV-03-0019	Product contact transfer lines	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and dead legs, slope, drainability and hose connection mapped to microbial/residue control.	Design	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0020	Product contact transfer lines	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Product contact transfer lines.	Installation	Production, labs, warehouse and staff	C01 C02 C20	Medium
CTV-03-0021	Product contact transfer lines	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of dead legs, slope, drainability and hose connection; verify microbial/residue control against predetermined product-specific criteria.	Operational	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0022	Product contact transfer lines	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of microbial/residue control.	Operational	Production, labs, warehouse and staff	C01 C02 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-03-0023	Product contact transfer lines	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and microbial/residue control trends; number of runs justified by risk.	Performance	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0024	Product contact transfer lines	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting microbial/residue control.	Lifecycle	Production, labs, warehouse and staff	C01 C02 C20	Medium
CTV-03-0025	Process room finishes	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and cleanability and drain isolation mapped to hygienic environment.	Design	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0026	Process room finishes	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Process room finishes.	Installation	Production, labs, warehouse and staff	C01 C02 C20	Medium
CTV-03-0027	Process room finishes	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of cleanability and drain isolation; verify hygienic environment against predetermined product-specific criteria.	Operational	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0028	Process room finishes	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of hygienic environment.	Operational	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0029	Process room finishes	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and hygienic environment trends; number of runs justified by risk.	Performance	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0030	Process room finishes	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting hygienic environment.	Lifecycle	Production, labs, warehouse and staff	C01 C02 C20	Medium
CTV-03-0031	Floor drains and traps	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and backflow prevention and cleaning accessibility mapped to microbial contamination prevention.	Design	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0032	Floor drains and traps	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Floor drains and traps.	Installation	Production, labs, warehouse and staff	C01 C02 C20	Medium
CTV-03-0033	Floor drains and traps	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of backflow prevention and cleaning accessibility; verify microbial contamination prevention against predetermined product-specific criteria.	Operational	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0034	Floor drains and traps	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of microbial contamination prevention.	Operational	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0035	Floor drains and traps	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and microbial contamination prevention trends; number of runs justified by risk.	Performance	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0036	Floor drains and traps	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting microbial contamination prevention.	Lifecycle	Production, labs, warehouse and staff	C01 C02 C20	Medium
CTV-03-0037	Personnel entry and gowning rooms	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and segregation, lockers and hygiene routes mapped to contamination prevention.	Design	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0038	Personnel entry and gowning rooms	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Personnel entry and gowning rooms.	Installation	Production, labs, warehouse and staff	C01 C02 C20	Medium
CTV-03-0039	Personnel entry and gowning rooms	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of segregation, lockers and hygiene routes; verify contamination prevention against predetermined product-specific criteria.	Operational	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0040	Personnel entry and gowning rooms	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of contamination prevention.	Operational	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0041	Personnel entry and gowning rooms	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and contamination prevention trends; number of runs justified by risk.	Performance	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0042	Personnel entry and gowning rooms	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting contamination prevention.	Lifecycle	Production, labs, warehouse and staff	C01 C02 C20	Medium
CTV-03-0043	Dedicated fragrance/solvent rooms	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and fume control and room zoning mapped to flammable-vapour safety.	Design	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0044	Dedicated fragrance/solvent rooms	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Dedicated fragrance/solvent rooms.	Installation	Production, labs, warehouse and staff	C01 C02 C20	Medium
CTV-03-0045	Dedicated fragrance/solvent rooms	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of fume control and room zoning; verify flammable-vapour safety against predetermined product-specific criteria.	Operational	Production, labs, warehouse and staff	C01 C02 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-03-0046	Dedicated fragrance/solvent rooms	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of flammable-vapour safety.	Operational	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0047	Dedicated fragrance/solvent rooms	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and flammable-vapour safety trends; number of runs justified by risk.	Performance	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0048	Dedicated fragrance/solvent rooms	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting flammable-vapour safety.	Lifecycle	Production, labs, warehouse and staff	C01 C02 C20	Medium
CTV-03-0049	Glass/fragile material handling area	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and glass controls and broken-glass incidents mapped to foreign matter prevention.	Design	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0050	Glass/fragile material handling area	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Glass/fragile material handling area.	Installation	Production, labs, warehouse and staff	C01 C02 C20	Medium
CTV-03-0051	Glass/fragile material handling area	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of glass controls and broken-glass incidents; verify foreign matter prevention against predetermined product-specific criteria.	Operational	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0052	Glass/fragile material handling area	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of foreign matter prevention.	Operational	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0053	Glass/fragile material handling area	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and foreign matter prevention trends; number of runs justified by risk.	Performance	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0054	Glass/fragile material handling area	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting foreign matter prevention.	Lifecycle	Production, labs, warehouse and staff	C01 C02 C20	Medium
CTV-03-0055	Rejected/rework quarantine rooms	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and physical segregation and access rights mapped to product identification.	Design	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0056	Rejected/rework quarantine rooms	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Rejected/rework quarantine rooms.	Installation	Production, labs, warehouse and staff	C01 C02 C20	Medium
CTV-03-0057	Rejected/rework quarantine rooms	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of physical segregation and access rights; verify product identification against predetermined product-specific criteria.	Operational	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0058	Rejected/rework quarantine rooms	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of product identification.	Operational	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0059	Rejected/rework quarantine rooms	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and product identification trends; number of runs justified by risk.	Performance	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0060	Rejected/rework quarantine rooms	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting product identification.	Lifecycle	Production, labs, warehouse and staff	C01 C02 C20	Medium
CTV-03-0061	Personnel/material flow studies	Study design / protocol: Challenge unidirectional/segregated flows for incompatible products	Predefined sampling, method, worst cases, limitations and acceptance rationale for Flow-map walkthrough and excursions.	Planning	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0062	Personnel/material flow studies	Challenge / study execution: Challenge unidirectional/segregated flows for incompatible products	Independent raw test data, deviations, control checks, representative conditions and Flow-map walkthrough and excursions.	Execution	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0063	Personnel/material flow studies	Result assessment / report / review: Challenge unidirectional/segregated flows for incompatible products	Approved conclusions, corrective actions, periodic trend or change-impact review of Flow-map walkthrough and excursions.	Review	Production, labs, warehouse and staff	C01 C02 C20	Medium
CTV-03-0064	Building cleaning verification	Study design / protocol: Demonstrate cleaning access and no persistent visible residues	Predefined sampling, method, worst cases, limitations and acceptance rationale for Inspection checklist and hygienic swabs if justified.	Planning	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0065	Building cleaning verification	Challenge / study execution: Demonstrate cleaning access and no persistent visible residues	Independent raw test data, deviations, control checks, representative conditions and Inspection checklist and hygienic swabs if justified.	Execution	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0066	Building cleaning verification	Result assessment / report / review: Demonstrate cleaning access and no persistent visible residues	Approved conclusions, corrective actions, periodic trend or change-impact review of Inspection checklist and hygienic swabs if justified.	Review	Production, labs, warehouse and staff	C01 C02 C20	Medium
CTV-03-0067	Pest ingress controls	Study design / protocol: Challenge barriers and pest-monitoring coverage	Predefined sampling, method, worst cases, limitations and acceptance rationale for Site pest trend and supplier service evidence.	Planning	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0068	Pest ingress controls	Challenge / study execution: Challenge barriers and pest-monitoring coverage	Independent raw test data, deviations, control checks, representative conditions and Site pest trend and supplier service evidence.	Execution	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0069	Pest ingress controls	Result assessment / report / review: Challenge barriers and pest-monitoring coverage	Approved conclusions, corrective actions, periodic trend or change-impact review of Site pest trend and supplier service evidence.	Review	Production, labs, warehouse and staff	C01 C02 C20	Medium

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-03-0070	Foreign-body controls	Study design / protocol: Assess brittle materials, acrylic guards and maintenance debris	Predefined sampling, method, worst cases, limitations and acceptance rationale for Foreign matter risk register and controls.	Planning	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0071	Foreign-body controls	Challenge / study execution: Assess brittle materials, acrylic guards and maintenance debris	Independent raw test data, deviations, control checks, representative conditions and Foreign matter risk register and controls.	Execution	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0072	Foreign-body controls	Result assessment / report / review: Assess brittle materials, acrylic guards and maintenance debris	Approved conclusions, corrective actions, periodic trend or change-impact review of Foreign matter risk register and controls.	Review	Production, labs, warehouse and staff	C01 C02 C20	Medium
CTV-03-0073	High-risk production segregation	Study design / protocol: Assess high-moisture/low-preservative eye products vs fragrance/aerosol	Predefined sampling, method, worst cases, limitations and acceptance rationale for Cross-contamination rationale.	Planning	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0074	High-risk production segregation	Challenge / study execution: Assess high-moisture/low-preservative eye products vs fragrance/aerosol	Independent raw test data, deviations, control checks, representative conditions and Cross-contamination rationale.	Execution	Production, labs, warehouse and staff	C01 C02 C20	High
CTV-03-0075	High-risk production segregation	Result assessment / report / review: Assess high-moisture/low-preservative eye products vs fragrance/aerosol	Approved conclusions, corrective actions, periodic trend or change-impact review of Cross-contamination rationale.	Review	Production, labs, warehouse and staff	C01 C02 C20	Medium

04 HVAC, AHU AND ENVIRONMENTAL CONDITIONS

72 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-04-0001	Primary supply AHU	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and temperature, humidity, air flow and recirculation mapped to product environment.	Design	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0002	Primary supply AHU	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Primary supply AHU.	Installation	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium
CTV-04-0003	Primary supply AHU	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of temperature, humidity, air flow and recirculation; verify product environment against predetermined product-specific criteria.	Operational	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0004	Primary supply AHU	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of product environment.	Operational	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0005	Primary supply AHU	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and product environment trends; number of runs justified by risk.	Performance	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0006	Primary supply AHU	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting product environment.	Lifecycle	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium
CTV-04-0007	Exhaust AHU / dust extraction	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and exhaust capture and return isolation mapped to dust/odour spread.	Design	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0008	Exhaust AHU / dust extraction	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Exhaust AHU / dust extraction.	Installation	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium
CTV-04-0009	Exhaust AHU / dust extraction	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of exhaust capture and return isolation; verify dust/odour spread against predetermined product-specific criteria.	Operational	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0010	Exhaust AHU / dust extraction	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of dust/odour spread.	Operational	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0011	Exhaust AHU / dust extraction	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and dust/odour spread trends; number of runs justified by risk.	Performance	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0012	Exhaust AHU / dust extraction	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting dust/odour spread.	Lifecycle	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium
CTV-04-0013	HEPA terminal units if required	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and filter integrity and airflow mapped to defined particulate conditions.	Design	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0014	HEPA terminal units if required	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for HEPA terminal units if required.	Installation	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium
CTV-04-0015	HEPA terminal units if required	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of filter integrity and airflow; verify defined particulate conditions against predetermined product-specific criteria.	Operational	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0016	HEPA terminal units if required	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of defined particulate conditions.	Operational	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0017	HEPA terminal units if required	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and defined particulate conditions trends; number of runs justified by risk.	Performance	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0018	HEPA terminal units if required	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting defined particulate conditions.	Lifecycle	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium
CTV-04-0019	Air handling control BMS	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and sensor drift and alarm setpoints mapped to environmental stability.	Design	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0020	Air handling control BMS	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Air handling control BMS.	Installation	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium
CTV-04-0021	Air handling control BMS	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of sensor drift and alarm setpoints; verify environmental stability against predetermined product-specific criteria.	Operational	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0022	Air handling control BMS	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of environmental stability.	Operational	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-04-0023	Air handling control BMS	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and environmental stability trends; number of runs justified by risk.	Performance	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0024	Air handling control BMS	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting environmental stability.	Lifecycle	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium
CTV-04-0025	Room differential pressure monitors	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and pressure control and alarm response mapped to area separation.	Design	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0026	Room differential pressure monitors	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Room differential pressure monitors.	Installation	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium
CTV-04-0027	Room differential pressure monitors	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of pressure control and alarm response; verify area separation against predetermined product-specific criteria.	Operational	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0028	Room differential pressure monitors	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of area separation.	Operational	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0029	Room differential pressure monitors	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and area separation trends; number of runs justified by risk.	Performance	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0030	Room differential pressure monitors	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting area separation.	Lifecycle	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium
CTV-04-0031	Process room temp/RH monitors	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and mapping, excursions and sensor response mapped to temperature/RH range.	Design	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0032	Process room temp/RH monitors	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Process room temp/RH monitors.	Installation	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium
CTV-04-0033	Process room temp/RH monitors	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of mapping, excursions and sensor response; verify temperature/RH range against predetermined product-specific criteria.	Operational	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0034	Process room temp/RH monitors	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of temperature/RH range.	Operational	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0035	Process room temp/RH monitors	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and temperature/RH range trends; number of runs justified by risk.	Performance	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0036	Process room temp/RH monitors	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting temperature/RH range.	Lifecycle	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium
CTV-04-0037	Powder processing local extraction	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and air velocity and dust collection pressure mapped to dust containment.	Design	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0038	Powder processing local extraction	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Powder processing local extraction.	Installation	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium
CTV-04-0039	Powder processing local extraction	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of air velocity and dust collection pressure; verify dust containment against predetermined product-specific criteria.	Operational	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0040	Powder processing local extraction	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of dust containment.	Operational	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0041	Powder processing local extraction	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and dust containment trends; number of runs justified by risk.	Performance	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0042	Powder processing local extraction	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting dust containment.	Lifecycle	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium
CTV-04-0043	Fragrance and alcohol exhaust	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and ACH and flammable vapour exposure mapped to safe atmosphere.	Design	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0044	Fragrance and alcohol exhaust	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Fragrance and alcohol exhaust.	Installation	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium
CTV-04-0045	Fragrance and alcohol exhaust	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of ACH and flammable vapour exposure; verify safe atmosphere against predetermined product-specific criteria.	Operational	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0046	Fragrance and alcohol exhaust	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of safe atmosphere.	Operational	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-04-0047	Fragrance and alcohol exhaust	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and safe atmosphere trends; number of runs justified by risk.	Performance	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0048	Fragrance and alcohol exhaust	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting safe atmosphere.	Lifecycle	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium
CTV-04-0049	Microbiology lab HVAC	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and airflow direction and work segregation mapped to microbiology control.	Design	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0050	Microbiology lab HVAC	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Microbiology lab HVAC.	Installation	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium
CTV-04-0051	Microbiology lab HVAC	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of airflow direction and work segregation; verify microbiology control against predetermined product-specific criteria.	Operational	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0052	Microbiology lab HVAC	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of microbiology control.	Operational	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0053	Microbiology lab HVAC	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and microbiology control trends; number of runs justified by risk.	Performance	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0054	Microbiology lab HVAC	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting microbiology control.	Lifecycle	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium
CTV-04-0055	Ventilation design justification	Study design / protocol: Select filters/air change/pressure based on product risk	Predefined sampling, method, worst cases, limitations and acceptance rationale for Hygiene rationale; no universal aseptic room grades.	Planning	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0056	Ventilation design justification	Challenge / study execution: Select filters/air change/pressure based on product risk	Independent raw test data, deviations, control checks, representative conditions and Hygiene rationale; no universal aseptic room grades.	Execution	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0057	Ventilation design justification	Result assessment / report / review: Select filters/air change/pressure based on product risk	Approved conclusions, corrective actions, periodic trend or change-impact review of Hygiene rationale; no universal aseptic room grades.	Review	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium
CTV-04-0058	Temperature and humidity seasonal qualification	Study design / protocol: Challenge hottest/coldest expected conditions	Predefined sampling, method, worst cases, limitations and acceptance rationale for Temperature/RH time series and excursion responses.	Planning	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0059	Temperature and humidity seasonal qualification	Challenge / study execution: Challenge hottest/coldest expected conditions	Independent raw test data, deviations, control checks, representative conditions and Temperature/RH time series and excursion responses.	Execution	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0060	Temperature and humidity seasonal qualification	Result assessment / report / review: Challenge hottest/coldest expected conditions	Approved conclusions, corrective actions, periodic trend or change-impact review of Temperature/RH time series and excursion responses.	Review	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium
CTV-04-0061	Smoke visualization when critical	Study design / protocol: Show airflow away from open wet product or dust source	Predefined sampling, method, worst cases, limitations and acceptance rationale for Visualized direction of flow and no adverse turbulence.	Planning	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0062	Smoke visualization when critical	Challenge / study execution: Show airflow away from open wet product or dust source	Independent raw test data, deviations, control checks, representative conditions and Visualized direction of flow and no adverse turbulence.	Execution	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0063	Smoke visualization when critical	Result assessment / report / review: Show airflow away from open wet product or dust source	Approved conclusions, corrective actions, periodic trend or change-impact review of Visualized direction of flow and no adverse turbulence.	Review	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium
CTV-04-0064	Air particulate classification when specified	Study design / protocol: Define ISO 14644 sampling plan only where required	Predefined sampling, method, worst cases, limitations and acceptance rationale for Class results tied to justified requirement.	Planning	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0065	Air particulate classification when specified	Challenge / study execution: Define ISO 14644 sampling plan only where required	Independent raw test data, deviations, control checks, representative conditions and Class results tied to justified requirement.	Execution	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0066	Air particulate classification when specified	Result assessment / report / review: Define ISO 14644 sampling plan only where required	Approved conclusions, corrective actions, periodic trend or change-impact review of Class results tied to justified requirement.	Review	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium
CTV-04-0067	Airborne microbial baseline	Study design / protocol: Trend viable monitoring at at-risk open wet processes	Predefined sampling, method, worst cases, limitations and acceptance rationale for Contextual limits and microbial trend review.	Planning	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0068	Airborne microbial baseline	Challenge / study execution: Trend viable monitoring at at-risk open wet processes	Independent raw test data, deviations, control checks, representative conditions and Contextual limits and microbial trend review.	Execution	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0069	Airborne microbial baseline	Result assessment / report / review: Trend viable monitoring at at-risk open wet processes	Approved conclusions, corrective actions, periodic trend or change-impact review of Contextual limits and microbial trend review.	Review	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium
CTV-04-0070	Filter change impact	Study design / protocol: Establish tests after filter/duct/AHU change	Predefined sampling, method, worst cases, limitations and acceptance rationale for Post-change requalification and re-clean approval.	Planning	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-04-0071	Filter change impact	Challenge / study execution: Establish tests after filter/duct/AHU change	Independent raw test data, deviations, control checks, representative conditions and Post-change requalification and re-clean approval.	Execution	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	High
CTV-04-0072	Filter change impact	Result assessment / report / review: Establish tests after filter/duct/AHU change	Approved conclusions, corrective actions, periodic trend or change-impact review of Post-change requalification and re-clean approval.	Review	Cosmetics manufacture; controlled zones if justified	C01 C19 C20	Medium

05 PROCESS WATER, TREATMENT AND DISTRIBUTION

90 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-05-0001	Raw water inlet and storage	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and source variability, pressure and seasonal change mapped to feed water quality.	Design	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0002	Raw water inlet and storage	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Raw water inlet and storage.	Installation	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0003	Raw water inlet and storage	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of source variability, pressure and seasonal change; verify feed water quality against predetermined product-specific criteria.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0004	Raw water inlet and storage	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of feed water quality.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0005	Raw water inlet and storage	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and feed water quality trends; number of runs justified by risk.	Performance	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0006	Raw water inlet and storage	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting feed water quality.	Lifecycle	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0007	Multi-media/sand filter	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and flow and turbidity capture mapped to pre-treatment performance.	Design	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0008	Multi-media/sand filter	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Multi-media/sand filter.	Installation	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0009	Multi-media/sand filter	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of flow and turbidity capture; verify pre-treatment performance against predetermined product-specific criteria.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0010	Multi-media/sand filter	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of pre-treatment performance.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0011	Multi-media/sand filter	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and pre-treatment performance trends; number of runs justified by risk.	Performance	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0012	Multi-media/sand filter	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting pre-treatment performance.	Lifecycle	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0013	Activated carbon unit	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and contact time and microbial breakthrough mapped to organic/chlorine control.	Design	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0014	Activated carbon unit	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Activated carbon unit.	Installation	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0015	Activated carbon unit	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of contact time and microbial breakthrough; verify organic/chlorine control against predetermined product-specific criteria.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0016	Activated carbon unit	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of organic/chlorine control.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-05-0017	Activated carbon unit	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and organic/chlorine control trends; number of runs justified by risk.	Performance	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0018	Activated carbon unit	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting organic/chlorine control.	Lifecycle	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0019	Softener skid	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and hardness breakthrough and regeneration mapped to hardness control.	Design	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0020	Softener skid	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Softener skid.	Installation	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0021	Softener skid	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of hardness breakthrough and regeneration; verify hardness control against predetermined product-specific criteria.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0022	Softener skid	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of hardness control.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0023	Softener skid	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and hardness control trends; number of runs justified by risk.	Performance	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0024	Softener skid	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting hardness control.	Lifecycle	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0025	Reverse osmosis plant	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and permeate quality and membrane integrity mapped to purified process-water quality.	Design	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0026	Reverse osmosis plant	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Reverse osmosis plant.	Installation	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0027	Reverse osmosis plant	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of permeate quality and membrane integrity; verify purified process-water quality against predetermined product-specific criteria.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0028	Reverse osmosis plant	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of purified process-water quality.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0029	Reverse osmosis plant	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and purified process-water quality trends; number of runs justified by risk.	Performance	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0030	Reverse osmosis plant	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting purified process-water quality.	Lifecycle	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0031	EDI or deionizer skid	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and conductivity and resin exhaustion mapped to ionic quality.	Design	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0032	EDI or deionizer skid	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for EDI or deionizer skid.	Installation	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0033	EDI or deionizer skid	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of conductivity and resin exhaustion; verify ionic quality against predetermined product-specific criteria.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0034	EDI or deionizer skid	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of ionic quality.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-05-0035	EDI or deionizer skid	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and ionic quality trends; number of runs justified by risk.	Performance	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0036	EDI or deionizer skid	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting ionic quality.	Lifecycle	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0037	UV water disinfection	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and dose, lamp intensity and alarms mapped to microbial trend.	Design	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0038	UV water disinfection	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for UV water disinfection.	Installation	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0039	UV water disinfection	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of dose, lamp intensity and alarms; verify microbial trend against predetermined product-specific criteria.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0040	UV water disinfection	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of microbial trend.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0041	UV water disinfection	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and microbial trend trends; number of runs justified by risk.	Performance	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0042	UV water disinfection	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting microbial trend.	Lifecycle	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0043	Water storage tank	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and vent filtration, level and sanitation mapped to microbiological control.	Design	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0044	Water storage tank	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Water storage tank.	Installation	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0045	Water storage tank	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of vent filtration, level and sanitation; verify microbiological control against predetermined product-specific criteria.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0046	Water storage tank	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of microbiological control.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0047	Water storage tank	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and microbiological control trends; number of runs justified by risk.	Performance	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0048	Water storage tank	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting microbiological control.	Lifecycle	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0049	Water recirculation loop	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and flow, dead legs, biofilm risk and outlets mapped to point-of-use consistency.	Design	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0050	Water recirculation loop	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Water recirculation loop.	Installation	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0051	Water recirculation loop	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of flow, dead legs, biofilm risk and outlets; verify point-of-use consistency against predetermined product-specific criteria.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0052	Water recirculation loop	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of point-of-use consistency.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-05-0053	Water recirculation loop	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and point-of-use consistency trends; number of runs justified by risk.	Performance	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0054	Water recirculation loop	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting point-of-use consistency.	Lifecycle	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0055	Point-of-use faucets and hoses	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and sanitation and first draw vs flushed sample mapped to water at use.	Design	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0056	Point-of-use faucets and hoses	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Point-of-use faucets and hoses.	Installation	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0057	Point-of-use faucets and hoses	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of sanitation and first draw vs flushed sample; verify water at use against predetermined product-specific criteria.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0058	Point-of-use faucets and hoses	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of water at use.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0059	Point-of-use faucets and hoses	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and water at use trends; number of runs justified by risk.	Performance	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0060	Point-of-use faucets and hoses	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting water at use.	Lifecycle	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0061	Water tank chemical sanitization	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and concentration, dwell and residuals mapped to sanitization effectiveness.	Design	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0062	Water tank chemical sanitization	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Water tank chemical sanitization.	Installation	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0063	Water tank chemical sanitization	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of concentration, dwell and residuals; verify sanitization effectiveness against predetermined product-specific criteria.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0064	Water tank chemical sanitization	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of sanitization effectiveness.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0065	Water tank chemical sanitization	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and sanitization effectiveness trends; number of runs justified by risk.	Performance	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0066	Water tank chemical sanitization	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting sanitization effectiveness.	Lifecycle	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0067	Water monitoring analyser	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and conductivity, temperature and sensor drift mapped to reliable water monitoring.	Design	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0068	Water monitoring analyser	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Water monitoring analyser.	Installation	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0069	Water monitoring analyser	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of conductivity, temperature and sensor drift; verify reliable water monitoring against predetermined product-specific criteria.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0070	Water monitoring analyser	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of reliable water monitoring.	Operational	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-05-0071	Water monitoring analyser	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and reliable water monitoring trends; number of runs justified by risk.	Performance	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0072	Water monitoring analyser	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting reliable water monitoring.	Lifecycle	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0073	Water user requirement specification	Study design / protocol: Set fit-for-purpose chemistry and microbiological limits	Predefined sampling, method, worst cases, limitations and acceptance rationale for Validated water quality specification per formulation.	Planning	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0074	Water user requirement specification	Challenge / study execution: Set fit-for-purpose chemistry and microbiological limits	Independent raw test data, deviations, control checks, representative conditions and Validated water quality specification per formulation.	Execution	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0075	Water user requirement specification	Result assessment / report / review: Set fit-for-purpose chemistry and microbiological limits	Approved conclusions, corrective actions, periodic trend or change-impact review of Validated water quality specification per formulation.	Review	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0076	Point-of-use sampling map	Study design / protocol: Cover critical/remote points, stagnant conditions and seasonal effects	Predefined sampling, method, worst cases, limitations and acceptance rationale for Risk-based schedule and acceptance trend.	Planning	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0077	Point-of-use sampling map	Challenge / study execution: Cover critical/remote points, stagnant conditions and seasonal effects	Independent raw test data, deviations, control checks, representative conditions and Risk-based schedule and acceptance trend.	Execution	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0078	Point-of-use sampling map	Result assessment / report / review: Cover critical/remote points, stagnant conditions and seasonal effects	Approved conclusions, corrective actions, periodic trend or change-impact review of Risk-based schedule and acceptance trend.	Review	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0079	Microbial alert/action limits	Study design / protocol: Assess baseline organisms and objectionables relevant to product	Predefined sampling, method, worst cases, limitations and acceptance rationale for Quality trend linked to preservative and shelf life.	Planning	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0080	Microbial alert/action limits	Challenge / study execution: Assess baseline organisms and objectionables relevant to product	Independent raw test data, deviations, control checks, representative conditions and Quality trend linked to preservative and shelf life.	Execution	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0081	Microbial alert/action limits	Result assessment / report / review: Assess baseline organisms and objectionables relevant to product	Approved conclusions, corrective actions, periodic trend or change-impact review of Quality trend linked to preservative and shelf life.	Review	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0082	Water-system change impact	Study design / protocol: Assess membrane, tank and line replacements	Predefined sampling, method, worst cases, limitations and acceptance rationale for Rationale for additional testing after maintenance.	Planning	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0083	Water-system change impact	Challenge / study execution: Assess membrane, tank and line replacements	Independent raw test data, deviations, control checks, representative conditions and Rationale for additional testing after maintenance.	Execution	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0084	Water-system change impact	Result assessment / report / review: Assess membrane, tank and line replacements	Approved conclusions, corrective actions, periodic trend or change-impact review of Rationale for additional testing after maintenance.	Review	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0085	Rinse-water quality	Study design / protocol: Confirm last rinse does not introduce residues or organisms	Predefined sampling, method, worst cases, limitations and acceptance rationale for Cleaning program linkage.	Planning	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0086	Rinse-water quality	Challenge / study execution: Confirm last rinse does not introduce residues or organisms	Independent raw test data, deviations, control checks, representative conditions and Cleaning program linkage.	Execution	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0087	Rinse-water quality	Result assessment / report / review: Confirm last rinse does not introduce residues or organisms	Approved conclusions, corrective actions, periodic trend or change-impact review of Cleaning program linkage.	Review	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium
CTV-05-0088	Water-to-formulation compatibility	Study design / protocol: Assess hardness, trace metal, endotoxin where risk-relevant	Predefined sampling, method, worst cases, limitations and acceptance rationale for Formulation stability and quality evidence.	Planning	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-05-0089	Water-to-formulation compatibility	Challenge / study execution: Assess hardness, trace metal, endotoxin where risk-relevant	Independent raw test data, deviations, control checks, representative conditions and Formulation stability and quality evidence.	Execution	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	High
CTV-05-0090	Water-to-formulation compatibility	Result assessment / report / review: Assess hardness, trace metal, endotoxin where risk-relevant	Approved conclusions, corrective actions, periodic trend or change-impact review of Formulation stability and quality evidence.	Review	Water-containing cosmetics, oral care and rinsing	C01 C08 C09 C10 C20	Medium

06 COMPRESSED AIR, UTILITIES AND THERMAL SYSTEMS

78 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-06-0001	Oil-free air compressor	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and oil/moisture risk and air flow mapped to product contact safety.	Design	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0002	Oil-free air compressor	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Oil-free air compressor.	Installation	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0003	Oil-free air compressor	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of oil/moisture risk and air flow; verify product contact safety against predetermined product-specific criteria.	Operational	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0004	Oil-free air compressor	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of product contact safety.	Operational	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0005	Oil-free air compressor	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and product contact safety trends; number of runs justified by risk.	Performance	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0006	Oil-free air compressor	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting product contact safety.	Lifecycle	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0007	Compressed air receiver	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and condensate and pressure performance mapped to air quality.	Design	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0008	Compressed air receiver	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Compressed air receiver.	Installation	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0009	Compressed air receiver	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of condensate and pressure performance; verify air quality against predetermined product-specific criteria.	Operational	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0010	Compressed air receiver	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of air quality.	Operational	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0011	Compressed air receiver	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and air quality trends; number of runs justified by risk.	Performance	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0012	Compressed air receiver	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting air quality.	Lifecycle	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0013	Air filters and coalescers	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and pressure drop, removal efficacy and replacement mapped to air quality.	Design	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0014	Air filters and coalescers	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Air filters and coalescers.	Installation	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0015	Air filters and coalescers	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of pressure drop, removal efficacy and replacement; verify air quality against predetermined product-specific criteria.	Operational	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0016	Air filters and coalescers	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of air quality.	Operational	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0017	Air filters and coalescers	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and air quality trends; number of runs justified by risk.	Performance	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0018	Air filters and coalescers	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting air quality.	Lifecycle	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0019	Point-of-use compressed air outlets	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and particulate, oil, moisture and microbial risk mapped to air contact quality.	Design	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0020	Point-of-use compressed air outlets	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Point-of-use compressed air outlets.	Installation	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0021	Point-of-use compressed air outlets	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of particulate, oil, moisture and microbial risk; verify air contact quality against predetermined product-specific criteria.	Operational	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0022	Point-of-use compressed air outlets	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of air contact quality.	Operational	Open-product utilities and processing facilities	C01 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-06-0023	Point-of-use compressed air outlets	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and air contact quality trends; number of runs justified by risk.	Performance	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0024	Point-of-use compressed air outlets	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting air contact quality.	Lifecycle	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0025	Nitrogen distribution	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and identity, pressure and product interface mapped to oxidation prevention.	Design	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0026	Nitrogen distribution	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Nitrogen distribution.	Installation	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0027	Nitrogen distribution	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of identity, pressure and product interface; verify oxidation prevention against predetermined product-specific criteria.	Operational	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0028	Nitrogen distribution	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of oxidation prevention.	Operational	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0029	Nitrogen distribution	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and oxidation prevention trends; number of runs justified by risk.	Performance	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0030	Nitrogen distribution	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting oxidation prevention.	Lifecycle	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0031	Chilled-water skid	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and temperature and available flow mapped to cooling control.	Design	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0032	Chilled-water skid	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Chilled-water skid.	Installation	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0033	Chilled-water skid	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of temperature and available flow; verify cooling control against predetermined product-specific criteria.	Operational	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0034	Chilled-water skid	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of cooling control.	Operational	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0035	Chilled-water skid	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and cooling control trends; number of runs justified by risk.	Performance	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0036	Chilled-water skid	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting cooling control.	Lifecycle	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0037	Hot-water/thermal fluid circulation	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and thermal response and temperature overshoot mapped to heating accuracy.	Design	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0038	Hot-water/thermal fluid circulation	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Hot-water/thermal fluid circulation.	Installation	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0039	Hot-water/thermal fluid circulation	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of thermal response and temperature overshoot; verify heating accuracy against predetermined product-specific criteria.	Operational	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0040	Hot-water/thermal fluid circulation	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of heating accuracy.	Operational	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0041	Hot-water/thermal fluid circulation	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and heating accuracy trends; number of runs justified by risk.	Performance	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0042	Hot-water/thermal fluid circulation	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting heating accuracy.	Lifecycle	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0043	Electrical UPS for controllers	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and transfer and runtime mapped to record and batch protection.	Design	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0044	Electrical UPS for controllers	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Electrical UPS for controllers.	Installation	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0045	Electrical UPS for controllers	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of transfer and runtime; verify record and batch protection against predetermined product-specific criteria.	Operational	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0046	Electrical UPS for controllers	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of record and batch protection.	Operational	Open-product utilities and processing facilities	C01 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-06-0047	Electrical UPS for controllers	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and record and batch protection trends; number of runs justified by risk.	Performance	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0048	Electrical UPS for controllers	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting record and batch protection.	Lifecycle	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0049	Emergency generator	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and automatic changeover and recovery mapped to batch continuity.	Design	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0050	Emergency generator	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Emergency generator.	Installation	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0051	Emergency generator	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of automatic changeover and recovery; verify batch continuity against predetermined product-specific criteria.	Operational	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0052	Emergency generator	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of batch continuity.	Operational	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0053	Emergency generator	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and batch continuity trends; number of runs justified by risk.	Performance	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0054	Emergency generator	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting batch continuity.	Lifecycle	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0055	Vacuum plant	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and vacuum level and oil/backflow control mapped to deaeration consistency.	Design	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0056	Vacuum plant	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Vacuum plant.	Installation	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0057	Vacuum plant	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of vacuum level and oil/backflow control; verify deaeration consistency against predetermined product-specific criteria.	Operational	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0058	Vacuum plant	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of deaeration consistency.	Operational	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0059	Vacuum plant	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and deaeration consistency trends; number of runs justified by risk.	Performance	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0060	Vacuum plant	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting deaeration consistency.	Lifecycle	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0061	Heat-exchanger plate pack	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and thermal response and gasket integrity mapped to temperature and contamination.	Design	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0062	Heat-exchanger plate pack	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Heat-exchanger plate pack.	Installation	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0063	Heat-exchanger plate pack	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of thermal response and gasket integrity; verify temperature and contamination against predetermined product-specific criteria.	Operational	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0064	Heat-exchanger plate pack	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of temperature and contamination.	Operational	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0065	Heat-exchanger plate pack	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and temperature and contamination trends; number of runs justified by risk.	Performance	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0066	Heat-exchanger plate pack	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting temperature and contamination.	Lifecycle	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0067	Contact-air quality study	Study design / protocol: Select ISO 8573 or justified equivalent if air contacts product	Predefined sampling, method, worst cases, limitations and acceptance rationale for Particulate/oil/water/microbial evidence to risk-based specification.	Planning	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0068	Contact-air quality study	Challenge / study execution: Select ISO 8573 or justified equivalent if air contacts product	Independent raw test data, deviations, control checks, representative conditions and Particulate/oil/water/microbial evidence to risk-based specification.	Execution	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0069	Contact-air quality study	Result assessment / report / review: Select ISO 8573 or justified equivalent if air contacts product	Approved conclusions, corrective actions, periodic trend or change-impact review of Particulate/oil/water/microbial evidence to risk-based specification.	Review	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0070	Nitrogen oxygen displacement	Study design / protocol: Verify control of oxygen exposure in susceptible oils	Predefined sampling, method, worst cases, limitations and acceptance rationale for Dissolved oxygen/peroxide outcomes.	Planning	Open-product utilities and processing facilities	C01 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-06-0071	Nitrogen oxygen displacement	Challenge / study execution: Verify control of oxygen exposure in susceptible oils	Independent raw test data, deviations, control checks, representative conditions and Dissolved oxygen/peroxide outcomes.	Execution	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0072	Nitrogen oxygen displacement	Result assessment / report / review: Verify control of oxygen exposure in susceptible oils	Approved conclusions, corrective actions, periodic trend or change-impact review of Dissolved oxygen/peroxide outcomes.	Review	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0073	Power-loss recovery	Study design / protocol: Document post-failure batch decisions and safe restart	Predefined sampling, method, worst cases, limitations and acceptance rationale for QA disposition and maximum interruption.	Planning	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0074	Power-loss recovery	Challenge / study execution: Document post-failure batch decisions and safe restart	Independent raw test data, deviations, control checks, representative conditions and QA disposition and maximum interruption.	Execution	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0075	Power-loss recovery	Result assessment / report / review: Document post-failure batch decisions and safe restart	Approved conclusions, corrective actions, periodic trend or change-impact review of QA disposition and maximum interruption.	Review	Open-product utilities and processing facilities	C01 C20	Medium
CTV-06-0076	Utility risk-based requalification	Study design / protocol: Document triggers for engineering changes	Predefined sampling, method, worst cases, limitations and acceptance rationale for Post-change process quality evidence.	Planning	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0077	Utility risk-based requalification	Challenge / study execution: Document triggers for engineering changes	Independent raw test data, deviations, control checks, representative conditions and Post-change process quality evidence.	Execution	Open-product utilities and processing facilities	C01 C20	High
CTV-06-0078	Utility risk-based requalification	Result assessment / report / review: Document triggers for engineering changes	Approved conclusions, corrective actions, periodic trend or change-impact review of Post-change process quality evidence.	Review	Open-product utilities and processing facilities	C01 C20	Medium

07 RAW MATERIAL RECEIPT, STORAGE AND SAMPLING

66 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-07-0001	Raw material pallet scale	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and accuracy across incoming weights mapped to mass integrity.	Design	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0002	Raw material pallet scale	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Raw material pallet scale.	Installation	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	Medium
CTV-07-0003	Raw material pallet scale	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of accuracy across incoming weights; verify mass integrity against predetermined product-specific criteria.	Operational	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0004	Raw material pallet scale	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of mass integrity.	Operational	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0005	Raw material pallet scale	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and mass integrity trends; number of runs justified by risk.	Performance	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0006	Raw material pallet scale	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting mass integrity.	Lifecycle	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	Medium
CTV-07-0007	Tanker/IBC transfer pump	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and flow, compatibility and flush cycles mapped to mix-up prevention.	Design	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0008	Tanker/IBC transfer pump	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Tanker/IBC transfer pump.	Installation	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	Medium
CTV-07-0009	Tanker/IBC transfer pump	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of flow, compatibility and flush cycles; verify mix-up prevention against predetermined product-specific criteria.	Operational	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0010	Tanker/IBC transfer pump	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of mix-up prevention.	Operational	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0011	Tanker/IBC transfer pump	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and mix-up prevention trends; number of runs justified by risk.	Performance	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0012	Tanker/IBC transfer pump	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting mix-up prevention.	Lifecycle	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	Medium
CTV-07-0013	Raw material sampling booth	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and containment and cleanability mapped to representative sample integrity.	Design	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0014	Raw material sampling booth	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Raw material sampling booth.	Installation	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	Medium
CTV-07-0015	Raw material sampling booth	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of containment and cleanability; verify representative sample integrity against predetermined product-specific criteria.	Operational	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0016	Raw material sampling booth	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of representative sample integrity.	Operational	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-07-0017	Raw material sampling booth	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and representative sample integrity trends; number of runs justified by risk.	Performance	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0018	Raw material sampling booth	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting representative sample integrity.	Lifecycle	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	Medium
CTV-07-0019	Material barcode scanner	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and code matching and rejected stock lock mapped to material traceability.	Design	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0020	Material barcode scanner	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Material barcode scanner.	Installation	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	Medium
CTV-07-0021	Material barcode scanner	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of code matching and rejected stock lock; verify material traceability against predetermined product-specific criteria.	Operational	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0022	Material barcode scanner	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of material traceability.	Operational	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0023	Material barcode scanner	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and material traceability trends; number of runs justified by risk.	Performance	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0024	Material barcode scanner	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting material traceability.	Lifecycle	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	Medium
CTV-07-0025	Drum heater / warming cabinet	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and thermal uniformity and overheating mapped to heat-sensitive raw material.	Design	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0026	Drum heater / warming cabinet	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Drum heater / warming cabinet.	Installation	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	Medium
CTV-07-0027	Drum heater / warming cabinet	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of thermal uniformity and overheating; verify heat-sensitive raw material against predetermined product-specific criteria.	Operational	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0028	Drum heater / warming cabinet	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of heat-sensitive raw material.	Operational	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0029	Drum heater / warming cabinet	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and heat-sensitive raw material trends; number of runs justified by risk.	Performance	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0030	Drum heater / warming cabinet	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting heat-sensitive raw material.	Lifecycle	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	Medium
CTV-07-0031	Bulk oil storage tank	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and nitrogen blanketing, water ingress and segregation mapped to oil quality.	Design	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0032	Bulk oil storage tank	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Bulk oil storage tank.	Installation	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	Medium
CTV-07-0033	Bulk oil storage tank	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of nitrogen blanketing, water ingress and segregation; verify oil quality against predetermined product-specific criteria.	Operational	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0034	Bulk oil storage tank	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of oil quality.	Operational	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-07-0035	Bulk oil storage tank	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and oil quality trends; number of runs justified by risk.	Performance	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0036	Bulk oil storage tank	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting oil quality.	Lifecycle	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	Medium
CTV-07-0037	Powder tote and bin	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and seal integrity and content identification mapped to powder moisture control.	Design	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0038	Powder tote and bin	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Powder tote and bin.	Installation	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	Medium
CTV-07-0039	Powder tote and bin	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of seal integrity and content identification; verify powder moisture control against predetermined product-specific criteria.	Operational	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0040	Powder tote and bin	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of powder moisture control.	Operational	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0041	Powder tote and bin	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and powder moisture control trends; number of runs justified by risk.	Performance	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0042	Powder tote and bin	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting powder moisture control.	Lifecycle	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	Medium
CTV-07-0043	Flammable ingredient storage cabinets	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and ventilation and bonding mapped to flammable material control.	Design	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0044	Flammable ingredient storage cabinets	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Flammable ingredient storage cabinets.	Installation	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	Medium
CTV-07-0045	Flammable ingredient storage cabinets	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of ventilation and bonding; verify flammable material control against predetermined product-specific criteria.	Operational	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0046	Flammable ingredient storage cabinets	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of flammable material control.	Operational	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0047	Flammable ingredient storage cabinets	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and flammable material control trends; number of runs justified by risk.	Performance	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0048	Flammable ingredient storage cabinets	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting flammable material control.	Lifecycle	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	Medium
CTV-07-0049	Incoming ingredient ID confirmation	Study design / protocol: Challenge trade-name synonym and supplier specification matching	Predefined sampling, method, worst cases, limitations and acceptance rationale for Identity/COA/lot verification.	Planning	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0050	Incoming ingredient ID confirmation	Challenge / study execution: Challenge trade-name synonym and supplier specification matching	Independent raw test data, deviations, control checks, representative conditions and Identity/COA/lot verification.	Execution	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0051	Incoming ingredient ID confirmation	Result assessment / report / review: Challenge trade-name synonym and supplier specification matching	Approved conclusions, corrective actions, periodic trend or change-impact review of Identity/COA/lot verification.	Review	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	Medium
CTV-07-0052	Allergen fragrance ingredient traceability	Study design / protocol: Track fragrance compounds requiring market-specific declaration	Predefined sampling, method, worst cases, limitations and acceptance rationale for Fragrance dossier and traceability.	Planning	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-07-0053	Allergen fragrance ingredient traceability	Challenge / study execution: Track fragrance compounds requiring market-specific declaration	Independent raw test data, deviations, control checks, representative conditions and Fragrance dossier and traceability.	Execution	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0054	Allergen fragrance ingredient traceability	Result assessment / report / review: Track fragrance compounds requiring market-specific declaration	Approved conclusions, corrective actions, periodic trend or change-impact review of Fragrance dossier and traceability.	Review	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	Medium
CTV-07-0055	Natural botanical variation	Study design / protocol: Assess pesticide, heavy metals, microbial and active variability as relevant	Predefined sampling, method, worst cases, limitations and acceptance rationale for Supplier-specification and formulation adjustment criteria.	Planning	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0056	Natural botanical variation	Challenge / study execution: Assess pesticide, heavy metals, microbial and active variability as relevant	Independent raw test data, deviations, control checks, representative conditions and Supplier-specification and formulation adjustment criteria.	Execution	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0057	Natural botanical variation	Result assessment / report / review: Assess pesticide, heavy metals, microbial and active variability as relevant	Approved conclusions, corrective actions, periodic trend or change-impact review of Supplier-specification and formulation adjustment criteria.	Review	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	Medium
CTV-07-0058	Pigment colourant certification	Study design / protocol: Check applicable approved dye/pigment grades and lot identity	Predefined sampling, method, worst cases, limitations and acceptance rationale for Market-specific positive-list evidence.	Planning	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0059	Pigment colourant certification	Challenge / study execution: Check applicable approved dye/pigment grades and lot identity	Independent raw test data, deviations, control checks, representative conditions and Market-specific positive-list evidence.	Execution	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0060	Pigment colourant certification	Result assessment / report / review: Check applicable approved dye/pigment grades and lot identity	Approved conclusions, corrective actions, periodic trend or change-impact review of Market-specific positive-list evidence.	Review	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	Medium
CTV-07-0061	Retest/expiry decision	Study design / protocol: Verify retest criteria and handling after expiration	Predefined sampling, method, worst cases, limitations and acceptance rationale for Release records and stability support.	Planning	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0062	Retest/expiry decision	Challenge / study execution: Verify retest criteria and handling after expiration	Independent raw test data, deviations, control checks, representative conditions and Release records and stability support.	Execution	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0063	Retest/expiry decision	Result assessment / report / review: Verify retest criteria and handling after expiration	Approved conclusions, corrective actions, periodic trend or change-impact review of Release records and stability support.	Review	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	Medium
CTV-07-0064	Material segregation	Study design / protocol: Separate restricted, hazardous and odorous ingredients	Predefined sampling, method, worst cases, limitations and acceptance rationale for Material-flow records.	Planning	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0065	Material segregation	Challenge / study execution: Separate restricted, hazardous and odorous ingredients	Independent raw test data, deviations, control checks, representative conditions and Material-flow records.	Execution	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	High
CTV-07-0066	Material segregation	Result assessment / report / review: Separate restricted, hazardous and odorous ingredients	Approved conclusions, corrective actions, periodic trend or change-impact review of Material-flow records.	Review	Oils, surfactants, actives, preservatives, pigments, botanicals	C01 C02 C04 C21	Medium

08 WEIGHING, DISPENSING AND TRANSFERS

63 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-08-0001	Platform balance	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and lower/upper range, repeatability and drift mapped to batch input mass.	Design	All formulations	C01 C20	High
CTV-08-0002	Platform balance	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Platform balance.	Installation	All formulations	C01 C20	Medium
CTV-08-0003	Platform balance	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of lower/upper range, repeatability and drift; verify batch input mass against predetermined product-specific criteria.	Operational	All formulations	C01 C20	High
CTV-08-0004	Platform balance	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of batch input mass.	Operational	All formulations	C01 C20	High
CTV-08-0005	Platform balance	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and batch input mass trends; number of runs justified by risk.	Performance	All formulations	C01 C20	High
CTV-08-0006	Platform balance	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting batch input mass.	Lifecycle	All formulations	C01 C20	Medium
CTV-08-0007	Micro-analytical dispensing balance	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and repeatability at preservative/fragrance dose mapped to low-dose accuracy.	Design	All formulations	C01 C20	High
CTV-08-0008	Micro-analytical dispensing balance	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Micro-analytical dispensing balance.	Installation	All formulations	C01 C20	Medium
CTV-08-0009	Micro-analytical dispensing balance	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of repeatability at preservative/fragrance dose; verify low-dose accuracy against predetermined product-specific criteria.	Operational	All formulations	C01 C20	High
CTV-08-0010	Micro-analytical dispensing balance	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of low-dose accuracy.	Operational	All formulations	C01 C20	High
CTV-08-0011	Micro-analytical dispensing balance	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and low-dose accuracy trends; number of runs justified by risk.	Performance	All formulations	C01 C20	High
CTV-08-0012	Micro-analytical dispensing balance	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting low-dose accuracy.	Lifecycle	All formulations	C01 C20	Medium
CTV-08-0013	Load-cell dispensing hopper	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and scale linearity and tare logic mapped to component weight.	Design	All formulations	C01 C20	High
CTV-08-0014	Load-cell dispensing hopper	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Load-cell dispensing hopper.	Installation	All formulations	C01 C20	Medium
CTV-08-0015	Load-cell dispensing hopper	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of scale linearity and tare logic; verify component weight against predetermined product-specific criteria.	Operational	All formulations	C01 C20	High
CTV-08-0016	Load-cell dispensing hopper	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of component weight.	Operational	All formulations	C01 C20	High
CTV-08-0017	Load-cell dispensing hopper	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and component weight trends; number of runs justified by risk.	Performance	All formulations	C01 C20	High
CTV-08-0018	Load-cell dispensing hopper	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting component weight.	Lifecycle	All formulations	C01 C20	Medium
CTV-08-0019	Liquid dosing meter	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and volume/mass conversion and temperature effects mapped to charge accuracy.	Design	All formulations	C01 C20	High
CTV-08-0020	Liquid dosing meter	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Liquid dosing meter.	Installation	All formulations	C01 C20	Medium
CTV-08-0021	Liquid dosing meter	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of volume/mass conversion and temperature effects; verify charge accuracy against predetermined product-specific criteria.	Operational	All formulations	C01 C20	High
CTV-08-0022	Liquid dosing meter	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of charge accuracy.	Operational	All formulations	C01 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-08-0023	Liquid dosing meter	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and charge accuracy trends; number of runs justified by risk.	Performance	All formulations	C01 C20	High
CTV-08-0024	Liquid dosing meter	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting charge accuracy.	Lifecycle	All formulations	C01 C20	Medium
CTV-08-0025	Automatic ingredient dosing skid	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and recipe interlocks and pump cutoffs mapped to recipe accuracy.	Design	All formulations	C01 C20	High
CTV-08-0026	Automatic ingredient dosing skid	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Automatic ingredient dosing skid.	Installation	All formulations	C01 C20	Medium
CTV-08-0027	Automatic ingredient dosing skid	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of recipe interlocks and pump cutoffs; verify recipe accuracy against predetermined product-specific criteria.	Operational	All formulations	C01 C20	High
CTV-08-0028	Automatic ingredient dosing skid	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of recipe accuracy.	Operational	All formulations	C01 C20	High
CTV-08-0029	Automatic ingredient dosing skid	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and recipe accuracy trends; number of runs justified by risk.	Performance	All formulations	C01 C20	High
CTV-08-0030	Automatic ingredient dosing skid	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting recipe accuracy.	Lifecycle	All formulations	C01 C20	Medium
CTV-08-0031	Drum transfer pump	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and hold-up and transfer recovery mapped to batch composition.	Design	All formulations	C01 C20	High
CTV-08-0032	Drum transfer pump	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Drum transfer pump.	Installation	All formulations	C01 C20	Medium
CTV-08-0033	Drum transfer pump	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of hold-up and transfer recovery; verify batch composition against predetermined product-specific criteria.	Operational	All formulations	C01 C20	High
CTV-08-0034	Drum transfer pump	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of batch composition.	Operational	All formulations	C01 C20	High
CTV-08-0035	Drum transfer pump	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and batch composition trends; number of runs justified by risk.	Performance	All formulations	C01 C20	High
CTV-08-0036	Drum transfer pump	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting batch composition.	Lifecycle	All formulations	C01 C20	Medium
CTV-08-0037	Flexible silicone transfer hose	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and hose traceability and cleaning recovery mapped to cross-contamination prevention.	Design	All formulations	C01 C20	High
CTV-08-0038	Flexible silicone transfer hose	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Flexible silicone transfer hose.	Installation	All formulations	C01 C20	Medium
CTV-08-0039	Flexible silicone transfer hose	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of hose traceability and cleaning recovery; verify cross-contamination prevention against predetermined product-specific criteria.	Operational	All formulations	C01 C20	High
CTV-08-0040	Flexible silicone transfer hose	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of cross-contamination prevention.	Operational	All formulations	C01 C20	High
CTV-08-0041	Flexible silicone transfer hose	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and cross-contamination prevention trends; number of runs justified by risk.	Performance	All formulations	C01 C20	High
CTV-08-0042	Flexible silicone transfer hose	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting cross-contamination prevention.	Lifecycle	All formulations	C01 C20	Medium
CTV-08-0043	Powder vacuum transfer loader	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and filter integrity and flow variation mapped to dispense identity.	Design	All formulations	C01 C20	High
CTV-08-0044	Powder vacuum transfer loader	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Powder vacuum transfer loader.	Installation	All formulations	C01 C20	Medium
CTV-08-0045	Powder vacuum transfer loader	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of filter integrity and flow variation; verify dispense identity against predetermined product-specific criteria.	Operational	All formulations	C01 C20	High
CTV-08-0046	Powder vacuum transfer loader	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of dispense identity.	Operational	All formulations	C01 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-08-0047	Powder vacuum transfer loader	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and dispense identity trends; number of runs justified by risk.	Performance	All formulations	C01 C20	High
CTV-08-0048	Powder vacuum transfer loader	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting dispense identity.	Lifecycle	All formulations	C01 C20	Medium
CTV-08-0049	Weighing tolerance verification	Study design / protocol: Establish lower limits for low-dose allergens/preservatives	Predefined sampling, method, worst cases, limitations and acceptance rationale for Allowed batch errors and weighing check.	Planning	All formulations	C01 C20	High
CTV-08-0050	Weighing tolerance verification	Challenge / study execution: Establish lower limits for low-dose allergens/preservatives	Independent raw test data, deviations, control checks, representative conditions and Allowed batch errors and weighing check.	Execution	All formulations	C01 C20	High
CTV-08-0051	Weighing tolerance verification	Result assessment / report / review: Establish lower limits for low-dose allergens/preservatives	Approved conclusions, corrective actions, periodic trend or change-impact review of Allowed batch errors and weighing check.	Review	All formulations	C01 C20	Medium
CTV-08-0052	Recipe reconciliation	Study design / protocol: Confirm batch ingredients and formula version on line	Predefined sampling, method, worst cases, limitations and acceptance rationale for No wrong ingredient or overcharge.	Planning	All formulations	C01 C20	High
CTV-08-0053	Recipe reconciliation	Challenge / study execution: Confirm batch ingredients and formula version on line	Independent raw test data, deviations, control checks, representative conditions and No wrong ingredient or overcharge.	Execution	All formulations	C01 C20	High
CTV-08-0054	Recipe reconciliation	Result assessment / report / review: Confirm batch ingredients and formula version on line	Approved conclusions, corrective actions, periodic trend or change-impact review of No wrong ingredient or overcharge.	Review	All formulations	C01 C20	Medium
CTV-08-0055	Dispensing label verification	Study design / protocol: Test QR/barcode and illegible label handling	Predefined sampling, method, worst cases, limitations and acceptance rationale for Operator traceability.	Planning	All formulations	C01 C20	High
CTV-08-0056	Dispensing label verification	Challenge / study execution: Test QR/barcode and illegible label handling	Independent raw test data, deviations, control checks, representative conditions and Operator traceability.	Execution	All formulations	C01 C20	High
CTV-08-0057	Dispensing label verification	Result assessment / report / review: Test QR/barcode and illegible label handling	Approved conclusions, corrective actions, periodic trend or change-impact review of Operator traceability.	Review	All formulations	C01 C20	Medium
CTV-08-0058	Double-check challenge	Study design / protocol: Show independent verification of critical weighments	Predefined sampling, method, worst cases, limitations and acceptance rationale for Evidence of error detection.	Planning	All formulations	C01 C20	High
CTV-08-0059	Double-check challenge	Challenge / study execution: Show independent verification of critical weighments	Independent raw test data, deviations, control checks, representative conditions and Evidence of error detection.	Execution	All formulations	C01 C20	High
CTV-08-0060	Double-check challenge	Result assessment / report / review: Show independent verification of critical weighments	Approved conclusions, corrective actions, periodic trend or change-impact review of Evidence of error detection.	Review	All formulations	C01 C20	Medium
CTV-08-0061	Line clearance effectiveness	Study design / protocol: Challenge preceding batch and packaging returns	Predefined sampling, method, worst cases, limitations and acceptance rationale for No cross-batch mix-up.	Planning	All formulations	C01 C20	High
CTV-08-0062	Line clearance effectiveness	Challenge / study execution: Challenge preceding batch and packaging returns	Independent raw test data, deviations, control checks, representative conditions and No cross-batch mix-up.	Execution	All formulations	C01 C20	High
CTV-08-0063	Line clearance effectiveness	Result assessment / report / review: Challenge preceding batch and packaging returns	Approved conclusions, corrective actions, periodic trend or change-impact review of No cross-batch mix-up.	Review	All formulations	C01 C20	Medium

09 CREAMS, LOTIONS AND EMULSIONS EQUIPMENT

84 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-09-0001	Jacketed oil phase preparation tank	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and heat-up, oil dispersion and hold mapped to oil phase uniformity.	Design	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0002	Jacketed oil phase preparation tank	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Jacketed oil phase preparation tank.	Installation	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0003	Jacketed oil phase preparation tank	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of heat-up, oil dispersion and hold; verify oil phase uniformity against predetermined product-specific criteria.	Operational	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0004	Jacketed oil phase preparation tank	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of oil phase uniformity.	Operational	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0005	Jacketed oil phase preparation tank	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and oil phase uniformity trends; number of runs justified by risk.	Performance	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0006	Jacketed oil phase preparation tank	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting oil phase uniformity.	Lifecycle	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0007	Jacketed aqueous phase preparation tank	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and hydration and thermal distribution mapped to aqueous phase consistency.	Design	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0008	Jacketed aqueous phase preparation tank	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Jacketed aqueous phase preparation tank.	Installation	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0009	Jacketed aqueous phase preparation tank	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of hydration and thermal distribution; verify aqueous phase consistency against predetermined product-specific criteria.	Operational	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0010	Jacketed aqueous phase preparation tank	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of aqueous phase consistency.	Operational	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0011	Jacketed aqueous phase preparation tank	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and aqueous phase consistency trends; number of runs justified by risk.	Performance	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0012	Jacketed aqueous phase preparation tank	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting aqueous phase consistency.	Lifecycle	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0013	Vacuum emulsifying mixer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and shear, vacuum and emulsification time mapped to droplet/viscosity stability.	Design	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0014	Vacuum emulsifying mixer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Vacuum emulsifying mixer.	Installation	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0015	Vacuum emulsifying mixer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of shear, vacuum and emulsification time; verify droplet/viscosity stability against predetermined product-specific criteria.	Operational	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0016	Vacuum emulsifying mixer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of droplet/viscosity stability.	Operational	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0017	Vacuum emulsifying mixer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and droplet/viscosity stability trends; number of runs justified by risk.	Performance	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0018	Vacuum emulsifying mixer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting droplet/viscosity stability.	Lifecycle	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0019	High shear homogenizer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and RPM and head position mapped to emulsion droplet distribution.	Design	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0020	High shear homogenizer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for High shear homogenizer.	Installation	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0021	High shear homogenizer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of RPM and head position; verify emulsion droplet distribution against predetermined product-specific criteria.	Operational	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0022	High shear homogenizer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of emulsion droplet distribution.	Operational	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-09-0023	High shear homogenizer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and emulsion droplet distribution trends; number of runs justified by risk.	Performance	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0024	High shear homogenizer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting emulsion droplet distribution.	Lifecycle	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0025	Rotor-stator mixer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and shear intensity and time mapped to mix uniformity.	Design	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0026	Rotor-stator mixer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Rotor-stator mixer.	Installation	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0027	Rotor-stator mixer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of shear intensity and time; verify mix uniformity against predetermined product-specific criteria.	Operational	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0028	Rotor-stator mixer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of mix uniformity.	Operational	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0029	Rotor-stator mixer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and mix uniformity trends; number of runs justified by risk.	Performance	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0030	Rotor-stator mixer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting mix uniformity.	Lifecycle	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0031	Sweep-anchor agitator	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and mixing pattern and wall scraping mapped to homogeneous viscosity.	Design	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0032	Sweep-anchor agitator	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Sweep-anchor agitator.	Installation	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0033	Sweep-anchor agitator	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of mixing pattern and wall scraping; verify homogeneous viscosity against predetermined product-specific criteria.	Operational	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0034	Sweep-anchor agitator	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of homogeneous viscosity.	Operational	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0035	Sweep-anchor agitator	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and homogeneous viscosity trends; number of runs justified by risk.	Performance	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0036	Sweep-anchor agitator	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting homogeneous viscosity.	Lifecycle	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0037	Emulsion transfer pump	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and shear heating and pump rate mapped to physical stability.	Design	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0038	Emulsion transfer pump	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Emulsion transfer pump.	Installation	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0039	Emulsion transfer pump	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of shear heating and pump rate; verify physical stability against predetermined product-specific criteria.	Operational	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0040	Emulsion transfer pump	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of physical stability.	Operational	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0041	Emulsion transfer pump	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and physical stability trends; number of runs justified by risk.	Performance	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0042	Emulsion transfer pump	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting physical stability.	Lifecycle	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0043	Plate/chiller cooler	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and cooling profile and flow rate mapped to texture and phase stability.	Design	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0044	Plate/chiller cooler	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Plate/chiller cooler.	Installation	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0045	Plate/chiller cooler	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of cooling profile and flow rate; verify texture and phase stability against predetermined product-specific criteria.	Operational	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0046	Plate/chiller cooler	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of texture and phase stability.	Operational	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-09-0047	Plate/chiller cooler	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and texture and phase stability trends; number of runs justified by risk.	Performance	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0048	Plate/chiller cooler	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting texture and phase stability.	Lifecycle	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0049	Inline emulsifier	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and shear variation and recirculation passes mapped to stable emulsion.	Design	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0050	Inline emulsifier	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Inline emulsifier.	Installation	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0051	Inline emulsifier	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of shear variation and recirculation passes; verify stable emulsion against predetermined product-specific criteria.	Operational	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0052	Inline emulsifier	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of stable emulsion.	Operational	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0053	Inline emulsifier	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and stable emulsion trends; number of runs justified by risk.	Performance	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0054	Inline emulsifier	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting stable emulsion.	Lifecycle	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0055	Product holding tank	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and mixing and hold temperature mapped to microbial/phase consistency.	Design	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0056	Product holding tank	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Product holding tank.	Installation	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0057	Product holding tank	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of mixing and hold temperature; verify microbial/phase consistency against predetermined product-specific criteria.	Operational	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0058	Product holding tank	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of microbial/phase consistency.	Operational	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0059	Product holding tank	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and microbial/phase consistency trends; number of runs justified by risk.	Performance	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0060	Product holding tank	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting microbial/phase consistency.	Lifecycle	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0061	Emulsion phase ratio study	Study design / protocol: Challenge oil/water weighing boundaries	Predefined sampling, method, worst cases, limitations and acceptance rationale for Phase stability, appearance and viscosity.	Planning	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0062	Emulsion phase ratio study	Challenge / study execution: Challenge oil/water weighing boundaries	Independent raw test data, deviations, control checks, representative conditions and Phase stability, appearance and viscosity.	Execution	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0063	Emulsion phase ratio study	Result assessment / report / review: Challenge oil/water weighing boundaries	Approved conclusions, corrective actions, periodic trend or change-impact review of Phase stability, appearance and viscosity.	Review	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0064	Emulsion inversion controls	Study design / protocol: Establish phase addition order and temperatures	Predefined sampling, method, worst cases, limitations and acceptance rationale for No inversion or undesirable phase split.	Planning	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0065	Emulsion inversion controls	Challenge / study execution: Establish phase addition order and temperatures	Independent raw test data, deviations, control checks, representative conditions and No inversion or undesirable phase split.	Execution	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0066	Emulsion inversion controls	Result assessment / report / review: Establish phase addition order and temperatures	Approved conclusions, corrective actions, periodic trend or change-impact review of No inversion or undesirable phase split.	Review	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0067	Droplet size distribution	Study design / protocol: Demonstrate adequate measurement method and process reproducibility	Predefined sampling, method, worst cases, limitations and acceptance rationale for Droplet size and stability.	Planning	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0068	Droplet size distribution	Challenge / study execution: Demonstrate adequate measurement method and process reproducibility	Independent raw test data, deviations, control checks, representative conditions and Droplet size and stability.	Execution	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0069	Droplet size distribution	Result assessment / report / review: Demonstrate adequate measurement method and process reproducibility	Approved conclusions, corrective actions, periodic trend or change-impact review of Droplet size and stability.	Review	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0070	Cooling-rate sensitivity	Study design / protocol: Compare heat and cool curves at different scales	Predefined sampling, method, worst cases, limitations and acceptance rationale for Crystallization or texture consistency.	Planning	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-09-0071	Cooling-rate sensitivity	Challenge / study execution: Compare heat and cool curves at different scales	Independent raw test data, deviations, control checks, representative conditions and Crystallization or texture consistency.	Execution	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0072	Cooling-rate sensitivity	Result assessment / report / review: Compare heat and cool curves at different scales	Approved conclusions, corrective actions, periodic trend or change-impact review of Crystallization or texture consistency.	Review	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0073	Viscosity growth over hold	Study design / protocol: Monitor rheology across hold and filling window	Predefined sampling, method, worst cases, limitations and acceptance rationale for Fillability and final quality.	Planning	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0074	Viscosity growth over hold	Challenge / study execution: Monitor rheology across hold and filling window	Independent raw test data, deviations, control checks, representative conditions and Fillability and final quality.	Execution	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0075	Viscosity growth over hold	Result assessment / report / review: Monitor rheology across hold and filling window	Approved conclusions, corrective actions, periodic trend or change-impact review of Fillability and final quality.	Review	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0076	Vacuum deaeration	Study design / protocol: Challenge negative pressure and foam collapse	Predefined sampling, method, worst cases, limitations and acceptance rationale for Entrapped air and density.	Planning	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0077	Vacuum deaeration	Challenge / study execution: Challenge negative pressure and foam collapse	Independent raw test data, deviations, control checks, representative conditions and Entrapped air and density.	Execution	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0078	Vacuum deaeration	Result assessment / report / review: Challenge negative pressure and foam collapse	Approved conclusions, corrective actions, periodic trend or change-impact review of Entrapped air and density.	Review	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0079	Batch scale-up equivalence	Study design / protocol: Compare lab, pilot and production geometry/shear	Predefined sampling, method, worst cases, limitations and acceptance rationale for CQA comparability.	Planning	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0080	Batch scale-up equivalence	Challenge / study execution: Compare lab, pilot and production geometry/shear	Independent raw test data, deviations, control checks, representative conditions and CQA comparability.	Execution	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0081	Batch scale-up equivalence	Result assessment / report / review: Compare lab, pilot and production geometry/shear	Approved conclusions, corrective actions, periodic trend or change-impact review of CQA comparability.	Review	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium
CTV-09-0082	Rework/recycle limits	Study design / protocol: Justify reprocess of over-viscous/emulsion batches	Predefined sampling, method, worst cases, limitations and acceptance rationale for Product safety, stability and traceability.	Planning	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0083	Rework/recycle limits	Challenge / study execution: Justify reprocess of over-viscous/emulsion batches	Independent raw test data, deviations, control checks, representative conditions and Product safety, stability and traceability.	Execution	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	High
CTV-09-0084	Rework/recycle limits	Result assessment / report / review: Justify reprocess of over-viscous/emulsion batches	Approved conclusions, corrective actions, periodic trend or change-impact review of Product safety, stability and traceability.	Review	Moisturizers, body lotion, face cream, cold cream	C01 C08 C09	Medium

10 SHAMPOOS, BODY WASH AND SURFACTANT LIQUIDS

66 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-10-0001	Surfactant blending tank	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and impeller speed and foaming mapped to surfactant dispersion.	Design	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0002	Surfactant blending tank	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Surfactant blending tank.	Installation	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	Medium
CTV-10-0003	Surfactant blending tank	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of impeller speed and foaming; verify surfactant dispersion against predetermined product-specific criteria.	Operational	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0004	Surfactant blending tank	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of surfactant dispersion.	Operational	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0005	Surfactant blending tank	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and surfactant dispersion trends; number of runs justified by risk.	Performance	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0006	Surfactant blending tank	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting surfactant dispersion.	Lifecycle	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	Medium
CTV-10-0007	Slow sweep agitator	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and shear, mixing time and vortex mapped to viscosity homogeneity.	Design	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0008	Slow sweep agitator	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Slow sweep agitator.	Installation	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	Medium
CTV-10-0009	Slow sweep agitator	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of shear, mixing time and vortex; verify viscosity homogeneity against predetermined product-specific criteria.	Operational	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0010	Slow sweep agitator	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of viscosity homogeneity.	Operational	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0011	Slow sweep agitator	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and viscosity homogeneity trends; number of runs justified by risk.	Performance	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0012	Slow sweep agitator	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting viscosity homogeneity.	Lifecycle	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	Medium
CTV-10-0013	Salt dosing unit	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and additive mass and addition rate mapped to viscosity curve.	Design	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0014	Salt dosing unit	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Salt dosing unit.	Installation	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	Medium
CTV-10-0015	Salt dosing unit	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of additive mass and addition rate; verify viscosity curve against predetermined product-specific criteria.	Operational	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0016	Salt dosing unit	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of viscosity curve.	Operational	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0017	Salt dosing unit	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and viscosity curve trends; number of runs justified by risk.	Performance	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0018	Salt dosing unit	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting viscosity curve.	Lifecycle	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	Medium
CTV-10-0019	Silicone emulsion premix unit	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and shear and ingredient feed mapped to silicone distribution.	Design	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0020	Silicone emulsion premix unit	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Silicone emulsion premix unit.	Installation	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	Medium
CTV-10-0021	Silicone emulsion premix unit	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of shear and ingredient feed; verify silicone distribution against predetermined product-specific criteria.	Operational	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0022	Silicone emulsion premix unit	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of silicone distribution.	Operational	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-10-0023	Silicone emulsion premix unit	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and silicone distribution trends; number of runs justified by risk.	Performance	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0024	Silicone emulsion premix unit	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting silicone distribution.	Lifecycle	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	Medium
CTV-10-0025	Inline static mixer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and flow ratio and mixing length mapped to uniformity.	Design	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0026	Inline static mixer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Inline static mixer.	Installation	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	Medium
CTV-10-0027	Inline static mixer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of flow ratio and mixing length; verify uniformity against predetermined product-specific criteria.	Operational	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0028	Inline static mixer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of uniformity.	Operational	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0029	Inline static mixer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and uniformity trends; number of runs justified by risk.	Performance	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0030	Inline static mixer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting uniformity.	Lifecycle	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	Medium
CTV-10-0031	Deaeration vacuum tank	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and foam breakdown and dissolved gas mapped to appearance and fill control.	Design	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0032	Deaeration vacuum tank	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Deaeration vacuum tank.	Installation	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	Medium
CTV-10-0033	Deaeration vacuum tank	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of foam breakdown and dissolved gas; verify appearance and fill control against predetermined product-specific criteria.	Operational	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0034	Deaeration vacuum tank	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of appearance and fill control.	Operational	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0035	Deaeration vacuum tank	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and appearance and fill control trends; number of runs justified by risk.	Performance	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0036	Deaeration vacuum tank	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting appearance and fill control.	Lifecycle	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	Medium
CTV-10-0037	Recirculation pump	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and pump shear and heat buildup mapped to viscosity retention.	Design	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0038	Recirculation pump	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Recirculation pump.	Installation	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	Medium
CTV-10-0039	Recirculation pump	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of pump shear and heat buildup; verify viscosity retention against predetermined product-specific criteria.	Operational	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0040	Recirculation pump	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of viscosity retention.	Operational	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0041	Recirculation pump	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and viscosity retention trends; number of runs justified by risk.	Performance	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0042	Recirculation pump	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting viscosity retention.	Lifecycle	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	Medium
CTV-10-0043	Liquid inline filter	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and screen integrity and differential pressure mapped to foreign matter control.	Design	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0044	Liquid inline filter	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Liquid inline filter.	Installation	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	Medium
CTV-10-0045	Liquid inline filter	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of screen integrity and differential pressure; verify foreign matter control against predetermined product-specific criteria.	Operational	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0046	Liquid inline filter	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of foreign matter control.	Operational	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-10-0047	Liquid inline filter	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and foreign matter control trends; number of runs justified by risk.	Performance	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0048	Liquid inline filter	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting foreign matter control.	Lifecycle	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	Medium
CTV-10-0049	Salt viscosity curve	Study design / protocol: Challenge under/over-addition and hysteresis	Predefined sampling, method, worst cases, limitations and acceptance rationale for Product viscosity window.	Planning	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0050	Salt viscosity curve	Challenge / study execution: Challenge under/over-addition and hysteresis	Independent raw test data, deviations, control checks, representative conditions and Product viscosity window.	Execution	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0051	Salt viscosity curve	Result assessment / report / review: Challenge under/over-addition and hysteresis	Approved conclusions, corrective actions, periodic trend or change-impact review of Product viscosity window.	Review	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	Medium
CTV-10-0052	Surfactant foam stability	Study design / protocol: Compare mixing and filling shear conditions	Predefined sampling, method, worst cases, limitations and acceptance rationale for Foam density and stability.	Planning	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0053	Surfactant foam stability	Challenge / study execution: Compare mixing and filling shear conditions	Independent raw test data, deviations, control checks, representative conditions and Foam density and stability.	Execution	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0054	Surfactant foam stability	Result assessment / report / review: Compare mixing and filling shear conditions	Approved conclusions, corrective actions, periodic trend or change-impact review of Foam density and stability.	Review	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	Medium
CTV-10-0055	Fragrance solubility	Study design / protocol: Check cloud-point and precipitation after cooling	Predefined sampling, method, worst cases, limitations and acceptance rationale for Appearance and odour stability.	Planning	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0056	Fragrance solubility	Challenge / study execution: Check cloud-point and precipitation after cooling	Independent raw test data, deviations, control checks, representative conditions and Appearance and odour stability.	Execution	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0057	Fragrance solubility	Result assessment / report / review: Check cloud-point and precipitation after cooling	Approved conclusions, corrective actions, periodic trend or change-impact review of Appearance and odour stability.	Review	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	Medium
CTV-10-0058	Preservative interaction	Study design / protocol: Check surfactant micelles and antimicrobial availability	Predefined sampling, method, worst cases, limitations and acceptance rationale for PET / challenge-test outcome.	Planning	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0059	Preservative interaction	Challenge / study execution: Check surfactant micelles and antimicrobial availability	Independent raw test data, deviations, control checks, representative conditions and PET / challenge-test outcome.	Execution	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0060	Preservative interaction	Result assessment / report / review: Check surfactant micelles and antimicrobial availability	Approved conclusions, corrective actions, periodic trend or change-impact review of PET / challenge-test outcome.	Review	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	Medium
CTV-10-0061	Colour uniformity	Study design / protocol: Assess mixing time at start/middle/end of tank	Predefined sampling, method, worst cases, limitations and acceptance rationale for Colour reproducibility.	Planning	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0062	Colour uniformity	Challenge / study execution: Assess mixing time at start/middle/end of tank	Independent raw test data, deviations, control checks, representative conditions and Colour reproducibility.	Execution	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0063	Colour uniformity	Result assessment / report / review: Assess mixing time at start/middle/end of tank	Approved conclusions, corrective actions, periodic trend or change-impact review of Colour reproducibility.	Review	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	Medium
CTV-10-0064	Container stress crack compatibility	Study design / protocol: Screen surfactant vs PE/PP/PET packaging	Predefined sampling, method, worst cases, limitations and acceptance rationale for No leakage or deformation.	Planning	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0065	Container stress crack compatibility	Challenge / study execution: Screen surfactant vs PE/PP/PET packaging	Independent raw test data, deviations, control checks, representative conditions and No leakage or deformation.	Execution	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	High
CTV-10-0066	Container stress crack compatibility	Result assessment / report / review: Screen surfactant vs PE/PP/PET packaging	Approved conclusions, corrective actions, periodic trend or change-impact review of No leakage or deformation.	Review	Shampoos, shower gels, hand wash, cleansers	C01 C08 C09	Medium

11 GELS, SERUMS AND LOW-VISCOSITY SKINCARE

60 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-11-0001	Carbomer dispersion tank	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and hydration, mixing and clump avoidance mapped to gel uniformity.	Design	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0002	Carbomer dispersion tank	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Carbomer dispersion tank.	Installation	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	Medium
CTV-11-0003	Carbomer dispersion tank	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of hydration, mixing and clump avoidance; verify gel uniformity against predetermined product-specific criteria.	Operational	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0004	Carbomer dispersion tank	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of gel uniformity.	Operational	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0005	Carbomer dispersion tank	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and gel uniformity trends; number of runs justified by risk.	Performance	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0006	Carbomer dispersion tank	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting gel uniformity.	Lifecycle	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	Medium
CTV-11-0007	High-speed disperser	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and dispersion rate and air incorporation mapped to lump free gel.	Design	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0008	High-speed disperser	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for High-speed disperser.	Installation	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	Medium
CTV-11-0009	High-speed disperser	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of dispersion rate and air incorporation; verify lump free gel against predetermined product-specific criteria.	Operational	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0010	High-speed disperser	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of lump free gel.	Operational	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0011	High-speed disperser	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and lump free gel trends; number of runs justified by risk.	Performance	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0012	High-speed disperser	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting lump free gel.	Lifecycle	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	Medium
CTV-11-0013	Neutralizer dosing skid	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and addition rate and pH endpoint mapped to viscosity and pH.	Design	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0014	Neutralizer dosing skid	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Neutralizer dosing skid.	Installation	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	Medium
CTV-11-0015	Neutralizer dosing skid	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of addition rate and pH endpoint; verify viscosity and pH against predetermined product-specific criteria.	Operational	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0016	Neutralizer dosing skid	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of viscosity and pH.	Operational	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0017	Neutralizer dosing skid	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and viscosity and pH trends; number of runs justified by risk.	Performance	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0018	Neutralizer dosing skid	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting viscosity and pH.	Lifecycle	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	Medium
CTV-11-0019	Low-shear serum mixer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and shear sensitivity and mixing duration mapped to active consistency.	Design	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0020	Low-shear serum mixer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Low-shear serum mixer.	Installation	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	Medium
CTV-11-0021	Low-shear serum mixer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of shear sensitivity and mixing duration; verify active consistency against predetermined product-specific criteria.	Operational	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0022	Low-shear serum mixer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of active consistency.	Operational	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-11-0023	Low-shear serum mixer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and active consistency trends; number of runs justified by risk.	Performance	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0024	Low-shear serum mixer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting active consistency.	Lifecycle	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	Medium
CTV-11-0025	Inline homogenizing pump	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and shear, pressure and transfer rate mapped to gel structure.	Design	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0026	Inline homogenizing pump	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Inline homogenizing pump.	Installation	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	Medium
CTV-11-0027	Inline homogenizing pump	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of shear, pressure and transfer rate; verify gel structure against predetermined product-specific criteria.	Operational	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0028	Inline homogenizing pump	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of gel structure.	Operational	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0029	Inline homogenizing pump	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and gel structure trends; number of runs justified by risk.	Performance	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0030	Inline homogenizing pump	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting gel structure.	Lifecycle	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	Medium
CTV-11-0031	Cold formulation tank	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and temperature stability mapped to temperature-sensitive actives.	Design	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0032	Cold formulation tank	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Cold formulation tank.	Installation	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	Medium
CTV-11-0033	Cold formulation tank	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of temperature stability; verify temperature-sensitive actives against predetermined product-specific criteria.	Operational	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0034	Cold formulation tank	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of temperature-sensitive actives.	Operational	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0035	Cold formulation tank	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and temperature-sensitive actives trends; number of runs justified by risk.	Performance	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0036	Cold formulation tank	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting temperature-sensitive actives.	Lifecycle	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	Medium
CTV-11-0037	Vacuum deaerator	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and vacuum and residence time mapped to bubble removal.	Design	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0038	Vacuum deaerator	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Vacuum deaerator.	Installation	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	Medium
CTV-11-0039	Vacuum deaerator	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of vacuum and residence time; verify bubble removal against predetermined product-specific criteria.	Operational	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0040	Vacuum deaerator	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of bubble removal.	Operational	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0041	Vacuum deaerator	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and bubble removal trends; number of runs justified by risk.	Performance	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0042	Vacuum deaerator	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting bubble removal.	Lifecycle	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	Medium
CTV-11-0043	Gelation and neutralization sequence	Study design / protocol: Challenge pH/viscosity endpoints and timing	Predefined sampling, method, worst cases, limitations and acceptance rationale for Stable rheology.	Planning	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0044	Gelation and neutralization sequence	Challenge / study execution: Challenge pH/viscosity endpoints and timing	Independent raw test data, deviations, control checks, representative conditions and Stable rheology.	Execution	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0045	Gelation and neutralization sequence	Result assessment / report / review: Challenge pH/viscosity endpoints and timing	Approved conclusions, corrective actions, periodic trend or change-impact review of Stable rheology.	Review	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	Medium
CTV-11-0046	Active solubility / precipitation	Study design / protocol: Challenge pH, temperature, ionic strength	Predefined sampling, method, worst cases, limitations and acceptance rationale for Clear/acceptable serum appearance.	Planning	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-11-0047	Active solubility / precipitation	Challenge / study execution: Challenge pH, temperature, ionic strength	Independent raw test data, deviations, control checks, representative conditions and Clear/acceptable serum appearance.	Execution	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0048	Active solubility / precipitation	Result assessment / report / review: Challenge pH, temperature, ionic strength	Approved conclusions, corrective actions, periodic trend or change-impact review of Clear/acceptable serum appearance.	Review	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	Medium
CTV-11-0049	Droplet dispersions in serum	Study design / protocol: Assess stability of encapsulated ingredients	Predefined sampling, method, worst cases, limitations and acceptance rationale for Droplet/particle stability.	Planning	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0050	Droplet dispersions in serum	Challenge / study execution: Assess stability of encapsulated ingredients	Independent raw test data, deviations, control checks, representative conditions and Droplet/particle stability.	Execution	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0051	Droplet dispersions in serum	Result assessment / report / review: Assess stability of encapsulated ingredients	Approved conclusions, corrective actions, periodic trend or change-impact review of Droplet/particle stability.	Review	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	Medium
CTV-11-0052	Low preservative formulation	Study design / protocol: Assess water activity and microbial risk	Predefined sampling, method, worst cases, limitations and acceptance rationale for Protective performance evidence.	Planning	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0053	Low preservative formulation	Challenge / study execution: Assess water activity and microbial risk	Independent raw test data, deviations, control checks, representative conditions and Protective performance evidence.	Execution	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0054	Low preservative formulation	Result assessment / report / review: Assess water activity and microbial risk	Approved conclusions, corrective actions, periodic trend or change-impact review of Protective performance evidence.	Review	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	Medium
CTV-11-0055	Hyaluronic polymer molecular-weight effects	Study design / protocol: Challenge shear damage to sensitive polymers	Predefined sampling, method, worst cases, limitations and acceptance rationale for Viscosity/molecular integrity.	Planning	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0056	Hyaluronic polymer molecular-weight effects	Challenge / study execution: Challenge shear damage to sensitive polymers	Independent raw test data, deviations, control checks, representative conditions and Viscosity/molecular integrity.	Execution	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0057	Hyaluronic polymer molecular-weight effects	Result assessment / report / review: Challenge shear damage to sensitive polymers	Approved conclusions, corrective actions, periodic trend or change-impact review of Viscosity/molecular integrity.	Review	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	Medium
CTV-11-0058	Metal chelation controls	Study design / protocol: Assess metal impurity sensitivity and colour shift	Predefined sampling, method, worst cases, limitations and acceptance rationale for Colour/oxidative stability.	Planning	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0059	Metal chelation controls	Challenge / study execution: Assess metal impurity sensitivity and colour shift	Independent raw test data, deviations, control checks, representative conditions and Colour/oxidative stability.	Execution	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	High
CTV-11-0060	Metal chelation controls	Result assessment / report / review: Assess metal impurity sensitivity and colour shift	Approved conclusions, corrective actions, periodic trend or change-impact review of Colour/oxidative stability.	Review	Gels, aloe gels, serums, essences, toners	C01 C08 C09 C10	Medium

12 BALMS, WAXES, LIPSTICKS AND ANHYDROUS PRODUCTS

66 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-12-0001	Wax melting kettle	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and heating range and wax mixing mapped to complete melt and homogeneity.	Design	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0002	Wax melting kettle	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Wax melting kettle.	Installation	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	Medium
CTV-12-0003	Wax melting kettle	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of heating range and wax mixing; verify complete melt and homogeneity against predetermined product-specific criteria.	Operational	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0004	Wax melting kettle	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of complete melt and homogeneity.	Operational	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0005	Wax melting kettle	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and complete melt and homogeneity trends; number of runs justified by risk.	Performance	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0006	Wax melting kettle	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting complete melt and homogeneity.	Lifecycle	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	Medium
CTV-12-0007	Oil/wax premix tank	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and temperature hold and mixing mapped to composition uniformity.	Design	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0008	Oil/wax premix tank	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Oil/wax premix tank.	Installation	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	Medium
CTV-12-0009	Oil/wax premix tank	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of temperature hold and mixing; verify composition uniformity against predetermined product-specific criteria.	Operational	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0010	Oil/wax premix tank	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of composition uniformity.	Operational	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0011	Oil/wax premix tank	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and composition uniformity trends; number of runs justified by risk.	Performance	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0012	Oil/wax premix tank	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting composition uniformity.	Lifecycle	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	Medium
CTV-12-0013	Jacketed pouring machine	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and pour temperature and flow mapped to shape/weight consistency.	Design	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0014	Jacketed pouring machine	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Jacketed pouring machine.	Installation	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	Medium
CTV-12-0015	Jacketed pouring machine	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of pour temperature and flow; verify shape/weight consistency against predetermined product-specific criteria.	Operational	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0016	Jacketed pouring machine	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of shape/weight consistency.	Operational	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0017	Jacketed pouring machine	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and shape/weight consistency trends; number of runs justified by risk.	Performance	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0018	Jacketed pouring machine	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting shape/weight consistency.	Lifecycle	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	Medium
CTV-12-0019	Lipstick mould cooling tunnel	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and cooling profile mapped to defect and texture control.	Design	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0020	Lipstick mould cooling tunnel	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Lipstick mould cooling tunnel.	Installation	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	Medium
CTV-12-0021	Lipstick mould cooling tunnel	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of cooling profile; verify defect and texture control against predetermined product-specific criteria.	Operational	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0022	Lipstick mould cooling tunnel	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of defect and texture control.	Operational	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-12-0023	Lipstick mould cooling tunnel	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and defect and texture control trends; number of runs justified by risk.	Performance	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0024	Lipstick mould cooling tunnel	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting defect and texture control.	Lifecycle	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	Medium
CTV-12-0025	Lipstick flame treatment equipment	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and flame setting and distance mapped to surface appearance.	Design	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0026	Lipstick flame treatment equipment	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Lipstick flame treatment equipment.	Installation	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	Medium
CTV-12-0027	Lipstick flame treatment equipment	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of flame setting and distance; verify surface appearance against predetermined product-specific criteria.	Operational	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0028	Lipstick flame treatment equipment	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of surface appearance.	Operational	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0029	Lipstick flame treatment equipment	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and surface appearance trends; number of runs justified by risk.	Performance	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0030	Lipstick flame treatment equipment	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting surface appearance.	Lifecycle	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	Medium
CTV-12-0031	Anhydrous balm stirrer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and mixing at varying viscosity mapped to uniformity.	Design	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0032	Anhydrous balm stirrer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Anhydrous balm stirrer.	Installation	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	Medium
CTV-12-0033	Anhydrous balm stirrer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of mixing at varying viscosity; verify uniformity against predetermined product-specific criteria.	Operational	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0034	Anhydrous balm stirrer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of uniformity.	Operational	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0035	Anhydrous balm stirrer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and uniformity trends; number of runs justified by risk.	Performance	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0036	Anhydrous balm stirrer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting uniformity.	Lifecycle	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	Medium
CTV-12-0037	Hot pour filling nozzles	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and nozzle temperature and dripping mapped to fill weight and appearance.	Design	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0038	Hot pour filling nozzles	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Hot pour filling nozzles.	Installation	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	Medium
CTV-12-0039	Hot pour filling nozzles	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of nozzle temperature and dripping; verify fill weight and appearance against predetermined product-specific criteria.	Operational	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0040	Hot pour filling nozzles	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of fill weight and appearance.	Operational	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0041	Hot pour filling nozzles	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and fill weight and appearance trends; number of runs justified by risk.	Performance	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0042	Hot pour filling nozzles	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting fill weight and appearance.	Lifecycle	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	Medium
CTV-12-0043	Oil filtration line	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and filter integrity and flow mapped to particle/foreign body control.	Design	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0044	Oil filtration line	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Oil filtration line.	Installation	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	Medium
CTV-12-0045	Oil filtration line	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of filter integrity and flow; verify particle/foreign body control against predetermined product-specific criteria.	Operational	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0046	Oil filtration line	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of particle/foreign body control.	Operational	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-12-0047	Oil filtration line	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and particle/foreign body control trends; number of runs justified by risk.	Performance	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0048	Oil filtration line	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting particle/foreign body control.	Lifecycle	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	Medium
CTV-12-0049	Wax polymorph / recrystallization	Study design / protocol: Challenge cooling/rewarming temperatures	Predefined sampling, method, worst cases, limitations and acceptance rationale for Texture, bloom, sweating.	Planning	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0050	Wax polymorph / recrystallization	Challenge / study execution: Challenge cooling/rewarming temperatures	Independent raw test data, deviations, control checks, representative conditions and Texture, bloom, sweating.	Execution	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0051	Wax polymorph / recrystallization	Result assessment / report / review: Challenge cooling/rewarming temperatures	Approved conclusions, corrective actions, periodic trend or change-impact review of Texture, bloom, sweating.	Review	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	Medium
CTV-12-0052	Oil oxidation	Study design / protocol: Check peroxide and odour development under stress	Predefined sampling, method, worst cases, limitations and acceptance rationale for Shelf-life control.	Planning	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0053	Oil oxidation	Challenge / study execution: Check peroxide and odour development under stress	Independent raw test data, deviations, control checks, representative conditions and Shelf-life control.	Execution	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0054	Oil oxidation	Result assessment / report / review: Check peroxide and odour development under stress	Approved conclusions, corrective actions, periodic trend or change-impact review of Shelf-life control.	Review	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	Medium
CTV-12-0055	Melt point testing	Study design / protocol: Verify acceptable application temperature / melting behaviour	Predefined sampling, method, worst cases, limitations and acceptance rationale for Product functionality.	Planning	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0056	Melt point testing	Challenge / study execution: Verify acceptable application temperature / melting behaviour	Independent raw test data, deviations, control checks, representative conditions and Product functionality.	Execution	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0057	Melt point testing	Result assessment / report / review: Verify acceptable application temperature / melting behaviour	Approved conclusions, corrective actions, periodic trend or change-impact review of Product functionality.	Review	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	Medium
CTV-12-0058	Colour pigment dispersion	Study design / protocol: Check specking, streaks and uniformity	Predefined sampling, method, worst cases, limitations and acceptance rationale for Visual uniformity.	Planning	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0059	Colour pigment dispersion	Challenge / study execution: Check specking, streaks and uniformity	Independent raw test data, deviations, control checks, representative conditions and Visual uniformity.	Execution	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0060	Colour pigment dispersion	Result assessment / report / review: Check specking, streaks and uniformity	Approved conclusions, corrective actions, periodic trend or change-impact review of Visual uniformity.	Review	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	Medium
CTV-12-0061	Lipstick break strength	Study design / protocol: Develop appropriate method for push-up and use	Predefined sampling, method, worst cases, limitations and acceptance rationale for Mechanical integrity.	Planning	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0062	Lipstick break strength	Challenge / study execution: Develop appropriate method for push-up and use	Independent raw test data, deviations, control checks, representative conditions and Mechanical integrity.	Execution	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0063	Lipstick break strength	Result assessment / report / review: Develop appropriate method for push-up and use	Approved conclusions, corrective actions, periodic trend or change-impact review of Mechanical integrity.	Review	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	Medium
CTV-12-0064	Microbiological low-risk justification	Study design / protocol: Assess anhydrous composition with ISO 29621	Predefined sampling, method, worst cases, limitations and acceptance rationale for Rationale for reduced microbial testing.	Planning	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0065	Microbiological low-risk justification	Challenge / study execution: Assess anhydrous composition with ISO 29621	Independent raw test data, deviations, control checks, representative conditions and Rationale for reduced microbial testing.	Execution	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	High
CTV-12-0066	Microbiological low-risk justification	Result assessment / report / review: Assess anhydrous composition with ISO 29621	Approved conclusions, corrective actions, periodic trend or change-impact review of Rationale for reduced microbial testing.	Review	Balms, lipsticks, oils, waxes, body butters	C01 C10 C21	Medium

13 DRY POWDERS, TALC AND PRESSED PRODUCTS

72 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-13-0001	Ribbon blender	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and mixing speed and segregation mapped to colour and content distribution.	Design	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0002	Ribbon blender	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Ribbon blender.	Installation	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium
CTV-13-0003	Ribbon blender	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of mixing speed and segregation; verify colour and content distribution against predetermined product-specific criteria.	Operational	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0004	Ribbon blender	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of colour and content distribution.	Operational	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0005	Ribbon blender	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and colour and content distribution trends; number of runs justified by risk.	Performance	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0006	Ribbon blender	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting colour and content distribution.	Lifecycle	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium
CTV-13-0007	V-blender	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and blend time and fill volume mapped to mix uniformity.	Design	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0008	V-blender	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for V-blender.	Installation	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium
CTV-13-0009	V-blender	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of blend time and fill volume; verify mix uniformity against predetermined product-specific criteria.	Operational	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0010	V-blender	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of mix uniformity.	Operational	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0011	V-blender	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and mix uniformity trends; number of runs justified by risk.	Performance	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0012	V-blender	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting mix uniformity.	Lifecycle	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium
CTV-13-0013	Sifter/vibro sieve	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and mesh integrity and feed rate mapped to particle-size control.	Design	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0014	Sifter/vibro sieve	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Sifter/vibro sieve.	Installation	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium
CTV-13-0015	Sifter/vibro sieve	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of mesh integrity and feed rate; verify particle-size control against predetermined product-specific criteria.	Operational	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0016	Sifter/vibro sieve	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of particle-size control.	Operational	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-13-0017	Sifter/vibro sieve	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and particle-size control trends; number of runs justified by risk.	Performance	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0018	Sifter/vibro sieve	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting particle-size control.	Lifecycle	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium
CTV-13-0019	Pin mill or pulverizer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and particle breakage and temperature mapped to fineness / dust exposure.	Design	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0020	Pin mill or pulverizer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Pin mill or pulverizer.	Installation	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium
CTV-13-0021	Pin mill or pulverizer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of particle breakage and temperature; verify fineness / dust exposure against predetermined product-specific criteria.	Operational	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0022	Pin mill or pulverizer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of fineness / dust exposure.	Operational	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0023	Pin mill or pulverizer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and fineness / dust exposure trends; number of runs justified by risk.	Performance	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0024	Pin mill or pulverizer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting fineness / dust exposure.	Lifecycle	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium
CTV-13-0025	Air classifier	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and cut point and recirculation mapped to particle size range.	Design	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0026	Air classifier	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Air classifier.	Installation	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium
CTV-13-0027	Air classifier	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of cut point and recirculation; verify particle size range against predetermined product-specific criteria.	Operational	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0028	Air classifier	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of particle size range.	Operational	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0029	Air classifier	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and particle size range trends; number of runs justified by risk.	Performance	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0030	Air classifier	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting particle size range.	Lifecycle	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium
CTV-13-0031	Powder bag filter dust collector	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and capture flow and pressure drop mapped to dust control.	Design	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0032	Powder bag filter dust collector	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Powder bag filter dust collector.	Installation	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium
CTV-13-0033	Powder bag filter dust collector	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of capture flow and pressure drop; verify dust control against predetermined product-specific criteria.	Operational	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0034	Powder bag filter dust collector	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of dust control.	Operational	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-13-0035	Powder bag filter dust collector	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and dust control trends; number of runs justified by risk.	Performance	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0036	Powder bag filter dust collector	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting dust control.	Lifecycle	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium
CTV-13-0037	Dry powder metal detector	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and test piece sensitivity where suitable mapped to metal contamination control.	Design	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0038	Dry powder metal detector	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Dry powder metal detector.	Installation	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium
CTV-13-0039	Dry powder metal detector	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of test piece sensitivity where suitable; verify metal contamination control against predetermined product-specific criteria.	Operational	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0040	Dry powder metal detector	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of metal contamination control.	Operational	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0041	Dry powder metal detector	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and metal contamination control trends; number of runs justified by risk.	Performance	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0042	Dry powder metal detector	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting metal contamination control.	Lifecycle	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium
CTV-13-0043	Powder compaction press	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and compression force and dwell mapped to cake/compact quality.	Design	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0044	Powder compaction press	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Powder compaction press.	Installation	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium
CTV-13-0045	Powder compaction press	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of compression force and dwell; verify cake/compact quality against predetermined product-specific criteria.	Operational	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0046	Powder compaction press	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of cake/compact quality.	Operational	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0047	Powder compaction press	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and cake/compact quality trends; number of runs justified by risk.	Performance	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0048	Powder compaction press	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting cake/compact quality.	Lifecycle	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium
CTV-13-0049	Powder screen printer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and deposition and stencil alignment mapped to colour presentation.	Design	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0050	Powder screen printer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Powder screen printer.	Installation	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium
CTV-13-0051	Powder screen printer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of deposition and stencil alignment; verify colour presentation against predetermined product-specific criteria.	Operational	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0052	Powder screen printer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of colour presentation.	Operational	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-13-0053	Powder screen printer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and colour presentation trends; number of runs justified by risk.	Performance	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0054	Powder screen printer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting colour presentation.	Lifecycle	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium
CTV-13-0055	Blend uniformity / segregation study	Study design / protocol: Sample bin top/middle/bottom and transfer	Predefined sampling, method, worst cases, limitations and acceptance rationale for Colour/homogeneity consistency.	Planning	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0056	Blend uniformity / segregation study	Challenge / study execution: Sample bin top/middle/bottom and transfer	Independent raw test data, deviations, control checks, representative conditions and Colour/homogeneity consistency.	Execution	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0057	Blend uniformity / segregation study	Result assessment / report / review: Sample bin top/middle/bottom and transfer	Approved conclusions, corrective actions, periodic trend or change-impact review of Colour/homogeneity consistency.	Review	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium
CTV-13-0058	Powder particle size method	Study design / protocol: Confirm laser/sieve testing reproducibility	Predefined sampling, method, worst cases, limitations and acceptance rationale for PSD fit for product.	Planning	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0059	Powder particle size method	Challenge / study execution: Confirm laser/sieve testing reproducibility	Independent raw test data, deviations, control checks, representative conditions and PSD fit for product.	Execution	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0060	Powder particle size method	Result assessment / report / review: Confirm laser/sieve testing reproducibility	Approved conclusions, corrective actions, periodic trend or change-impact review of PSD fit for product.	Review	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium
CTV-13-0061	Talc mineral purity / asbestos risk	Study design / protocol: Supplier and testing control per applicable regulation	Predefined sampling, method, worst cases, limitations and acceptance rationale for Safety substantiation.	Planning	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0062	Talc mineral purity / asbestos risk	Challenge / study execution: Supplier and testing control per applicable regulation	Independent raw test data, deviations, control checks, representative conditions and Safety substantiation.	Execution	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0063	Talc mineral purity / asbestos risk	Result assessment / report / review: Supplier and testing control per applicable regulation	Approved conclusions, corrective actions, periodic trend or change-impact review of Safety substantiation.	Review	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium
CTV-13-0064	Powder microbial hazard assessment	Study design / protocol: Evaluate low-water risks and ingredient ingress	Predefined sampling, method, worst cases, limitations and acceptance rationale for Microbial risk evidence.	Planning	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0065	Powder microbial hazard assessment	Challenge / study execution: Evaluate low-water risks and ingredient ingress	Independent raw test data, deviations, control checks, representative conditions and Microbial risk evidence.	Execution	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0066	Powder microbial hazard assessment	Result assessment / report / review: Evaluate low-water risks and ingredient ingress	Approved conclusions, corrective actions, periodic trend or change-impact review of Microbial risk evidence.	Review	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium
CTV-13-0067	Dust contamination validation	Study design / protocol: Assess residual colour carryover after line change	Predefined sampling, method, worst cases, limitations and acceptance rationale for No visible / analytical carryover.	Planning	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0068	Dust contamination validation	Challenge / study execution: Assess residual colour carryover after line change	Independent raw test data, deviations, control checks, representative conditions and No visible / analytical carryover.	Execution	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0069	Dust contamination validation	Result assessment / report / review: Assess residual colour carryover after line change	Approved conclusions, corrective actions, periodic trend or change-impact review of No visible / analytical carryover.	Review	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium
CTV-13-0070	Compact drop and impact study	Study design / protocol: Simulate foreseeable handling and transport	Predefined sampling, method, worst cases, limitations and acceptance rationale for Mechanical integrity.	Planning	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-13-0071	Compact drop and impact study	Challenge / study execution: Simulate foreseeable handling and transport	Independent raw test data, deviations, control checks, representative conditions and Mechanical integrity.	Execution	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	High
CTV-13-0072	Compact drop and impact study	Result assessment / report / review: Simulate foreseeable handling and transport	Approved conclusions, corrective actions, periodic trend or change-impact review of Mechanical integrity.	Review	Face powder, body powder, compact, eyeshadow, dry mask	C01 C10 C20	Medium

14 COLOUR COSMETICS AND PIGMENTS

60 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-14-0001	Pigment dispersion mill	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and grind gap and pass count mapped to colour strength.	Design	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0002	Pigment dispersion mill	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Pigment dispersion mill.	Installation	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	Medium
CTV-14-0003	Pigment dispersion mill	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of grind gap and pass count; verify colour strength against predetermined product-specific criteria.	Operational	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0004	Pigment dispersion mill	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of colour strength.	Operational	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0005	Pigment dispersion mill	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and colour strength trends; number of runs justified by risk.	Performance	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0006	Pigment dispersion mill	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting colour strength.	Lifecycle	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	Medium
CTV-14-0007	Three-roll mill	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and roller gap and thermal generation mapped to pigment dispersion.	Design	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0008	Three-roll mill	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Three-roll mill.	Installation	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	Medium
CTV-14-0009	Three-roll mill	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of roller gap and thermal generation; verify pigment dispersion against predetermined product-specific criteria.	Operational	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0010	Three-roll mill	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of pigment dispersion.	Operational	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0011	Three-roll mill	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and pigment dispersion trends; number of runs justified by risk.	Performance	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0012	Three-roll mill	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting pigment dispersion.	Lifecycle	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	Medium
CTV-14-0013	Bead mill	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and media size and milling residence mapped to particle dispersion.	Design	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0014	Bead mill	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Bead mill.	Installation	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	Medium
CTV-14-0015	Bead mill	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of media size and milling residence; verify particle dispersion against predetermined product-specific criteria.	Operational	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0016	Bead mill	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of particle dispersion.	Operational	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-14-0017	Bead mill	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and particle dispersion trends; number of runs justified by risk.	Performance	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0018	Bead mill	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting particle dispersion.	Lifecycle	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	Medium
CTV-14-0019	Foundation homogenizer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and shear, temperature and hold mapped to colour / phase consistency.	Design	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0020	Foundation homogenizer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Foundation homogenizer.	Installation	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	Medium
CTV-14-0021	Foundation homogenizer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of shear, temperature and hold; verify colour / phase consistency against predetermined product-specific criteria.	Operational	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0022	Foundation homogenizer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of colour / phase consistency.	Operational	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0023	Foundation homogenizer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and colour / phase consistency trends; number of runs justified by risk.	Performance	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0024	Foundation homogenizer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting colour / phase consistency.	Lifecycle	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	Medium
CTV-14-0025	Mascara mixing vessel	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and high viscosity mix and dead zones mapped to pigment distribution.	Design	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0026	Mascara mixing vessel	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Mascara mixing vessel.	Installation	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	Medium
CTV-14-0027	Mascara mixing vessel	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of high viscosity mix and dead zones; verify pigment distribution against predetermined product-specific criteria.	Operational	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0028	Mascara mixing vessel	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of pigment distribution.	Operational	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0029	Mascara mixing vessel	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and pigment distribution trends; number of runs justified by risk.	Performance	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0030	Mascara mixing vessel	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting pigment distribution.	Lifecycle	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	Medium
CTV-14-0031	Pigment slurry transfer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and agitation during transfer mapped to sedimentation prevention.	Design	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0032	Pigment slurry transfer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Pigment slurry transfer.	Installation	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	Medium
CTV-14-0033	Pigment slurry transfer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of agitation during transfer; verify sedimentation prevention against predetermined product-specific criteria.	Operational	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0034	Pigment slurry transfer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of sedimentation prevention.	Operational	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-14-0035	Pigment slurry transfer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and sedimentation prevention trends; number of runs justified by risk.	Performance	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0036	Pigment slurry transfer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting sedimentation prevention.	Lifecycle	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	Medium
CTV-14-0037	Colour matching spectrophotometer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and calibration and ΔE repeatability mapped to colour consistency.	Design	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0038	Colour matching spectrophotometer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Colour matching spectrophotometer.	Installation	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	Medium
CTV-14-0039	Colour matching spectrophotometer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of calibration and ΔE repeatability; verify colour consistency against predetermined product-specific criteria.	Operational	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0040	Colour matching spectrophotometer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of colour consistency.	Operational	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0041	Colour matching spectrophotometer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and colour consistency trends; number of runs justified by risk.	Performance	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0042	Colour matching spectrophotometer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting colour consistency.	Lifecycle	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	Medium
CTV-14-0043	Colour shade standardisation	Study design / protocol: Define illuminant, standard and comparison method	Predefined sampling, method, worst cases, limitations and acceptance rationale for Validated shade tolerance.	Planning	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0044	Colour shade standardisation	Challenge / study execution: Define illuminant, standard and comparison method	Independent raw test data, deviations, control checks, representative conditions and Validated shade tolerance.	Execution	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0045	Colour shade standardisation	Result assessment / report / review: Define illuminant, standard and comparison method	Approved conclusions, corrective actions, periodic trend or change-impact review of Validated shade tolerance.	Review	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	Medium
CTV-14-0046	Heavy metals and impurity testing	Study design / protocol: Assess restricted impurities with validated methods	Predefined sampling, method, worst cases, limitations and acceptance rationale for Safety / market compliance.	Planning	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0047	Heavy metals and impurity testing	Challenge / study execution: Assess restricted impurities with validated methods	Independent raw test data, deviations, control checks, representative conditions and Safety / market compliance.	Execution	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0048	Heavy metals and impurity testing	Result assessment / report / review: Assess restricted impurities with validated methods	Approved conclusions, corrective actions, periodic trend or change-impact review of Safety / market compliance.	Review	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	Medium
CTV-14-0049	Eye product safety screening	Study design / protocol: Elevated microbiological and preservative risk for mascara/eyeliner	Predefined sampling, method, worst cases, limitations and acceptance rationale for Micro/eye-use risk evidence.	Planning	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0050	Eye product safety screening	Challenge / study execution: Elevated microbiological and preservative risk for mascara/eyeliner	Independent raw test data, deviations, control checks, representative conditions and Micro/eye-use risk evidence.	Execution	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0051	Eye product safety screening	Result assessment / report / review: Elevated microbiological and preservative risk for mascara/eyeliner	Approved conclusions, corrective actions, periodic trend or change-impact review of Micro/eye-use risk evidence.	Review	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	Medium
CTV-14-0052	Pigment settling and resuspendability	Study design / protocol: Hold and accelerated storage after mixing	Predefined sampling, method, worst cases, limitations and acceptance rationale for No unacceptable settling.	Planning	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-14-0053	Pigment settling and resuspendability	Challenge / study execution: Hold and accelerated storage after mixing	Independent raw test data, deviations, control checks, representative conditions and No unacceptable settling.	Execution	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0054	Pigment settling and resuspendability	Result assessment / report / review: Hold and accelerated storage after mixing	Approved conclusions, corrective actions, periodic trend or change-impact review of No unacceptable settling.	Review	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	Medium
CTV-14-0055	Mascara brush-wiper compatibility	Study design / protocol: Evaluate wiping, extrusion and preservative exposure	Predefined sampling, method, worst cases, limitations and acceptance rationale for Dose and microbial protection.	Planning	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0056	Mascara brush-wiper compatibility	Challenge / study execution: Evaluate wiping, extrusion and preservative exposure	Independent raw test data, deviations, control checks, representative conditions and Dose and microbial protection.	Execution	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0057	Mascara brush-wiper compatibility	Result assessment / report / review: Evaluate wiping, extrusion and preservative exposure	Approved conclusions, corrective actions, periodic trend or change-impact review of Dose and microbial protection.	Review	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	Medium
CTV-14-0058	Oxidation/colour shift of foundation	Study design / protocol: Challenge light, heat and ambient exposure	Predefined sampling, method, worst cases, limitations and acceptance rationale for Shade stability.	Planning	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0059	Oxidation/colour shift of foundation	Challenge / study execution: Challenge light, heat and ambient exposure	Independent raw test data, deviations, control checks, representative conditions and Shade stability.	Execution	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	High
CTV-14-0060	Oxidation/colour shift of foundation	Result assessment / report / review: Challenge light, heat and ambient exposure	Approved conclusions, corrective actions, periodic trend or change-impact review of Shade stability.	Review	Foundation, concealer, mascara, eyeliner, pigment dispersions	C01 C09 C21	Medium

15 TOOTHPASTE AND NON-THERAPEUTIC ORAL CARE

60 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-15-0001	Vacuum toothpaste mixer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and vacuum, dispersion and paste viscosity mapped to uniform paste.	Design	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0002	Vacuum toothpaste mixer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Vacuum toothpaste mixer.	Installation	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	Medium
CTV-15-0003	Vacuum toothpaste mixer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of vacuum, dispersion and paste viscosity; verify uniform paste against predetermined product-specific criteria.	Operational	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0004	Vacuum toothpaste mixer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of uniform paste.	Operational	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0005	Vacuum toothpaste mixer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and uniform paste trends; number of runs justified by risk.	Performance	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0006	Vacuum toothpaste mixer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting uniform paste.	Lifecycle	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	Medium
CTV-15-0007	Abrasive slurry premix tank	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and solids suspension and mixing mapped to abrasive distribution.	Design	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0008	Abrasive slurry premix tank	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Abrasive slurry premix tank.	Installation	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	Medium
CTV-15-0009	Abrasive slurry premix tank	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of solids suspension and mixing; verify abrasive distribution against predetermined product-specific criteria.	Operational	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0010	Abrasive slurry premix tank	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of abrasive distribution.	Operational	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0011	Abrasive slurry premix tank	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and abrasive distribution trends; number of runs justified by risk.	Performance	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0012	Abrasive slurry premix tank	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting abrasive distribution.	Lifecycle	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	Medium
CTV-15-0013	Powder feeder	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and addition rate and dust capture mapped to solids uniformity.	Design	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0014	Powder feeder	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Powder feeder.	Installation	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	Medium
CTV-15-0015	Powder feeder	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of addition rate and dust capture; verify solids uniformity against predetermined product-specific criteria.	Operational	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0016	Powder feeder	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of solids uniformity.	Operational	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-15-0017	Powder feeder	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and solids uniformity trends; number of runs justified by risk.	Performance	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0018	Powder feeder	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting solids uniformity.	Lifecycle	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	Medium
CTV-15-0019	Toothpaste homogenizer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and shear and air inclusion mapped to texture and bubble control.	Design	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0020	Toothpaste homogenizer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Toothpaste homogenizer.	Installation	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	Medium
CTV-15-0021	Toothpaste homogenizer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of shear and air inclusion; verify texture and bubble control against predetermined product-specific criteria.	Operational	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0022	Toothpaste homogenizer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of texture and bubble control.	Operational	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0023	Toothpaste homogenizer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and texture and bubble control trends; number of runs justified by risk.	Performance	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0024	Toothpaste homogenizer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting texture and bubble control.	Lifecycle	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	Medium
CTV-15-0025	Toothpaste transfer lobe pump	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and pump shear and hold-up mapped to paste integrity.	Design	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0026	Toothpaste transfer lobe pump	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Toothpaste transfer lobe pump.	Installation	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	Medium
CTV-15-0027	Toothpaste transfer lobe pump	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of pump shear and hold-up; verify paste integrity against predetermined product-specific criteria.	Operational	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0028	Toothpaste transfer lobe pump	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of paste integrity.	Operational	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0029	Toothpaste transfer lobe pump	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and paste integrity trends; number of runs justified by risk.	Performance	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0030	Toothpaste transfer lobe pump	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting paste integrity.	Lifecycle	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	Medium
CTV-15-0031	Toothpaste tube filler	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and fill volume and tube crimp mapped to pack integrity.	Design	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0032	Toothpaste tube filler	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Toothpaste tube filler.	Installation	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	Medium
CTV-15-0033	Toothpaste tube filler	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of fill volume and tube crimp; verify pack integrity against predetermined product-specific criteria.	Operational	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0034	Toothpaste tube filler	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of pack integrity.	Operational	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-15-0035	Toothpaste tube filler	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and pack integrity trends; number of runs justified by risk.	Performance	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0036	Toothpaste tube filler	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting pack integrity.	Lifecycle	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	Medium
CTV-15-0037	Mouthwash blending tank	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and additive solubility and recirculation mapped to clarity and pH.	Design	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0038	Mouthwash blending tank	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Mouthwash blending tank.	Installation	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	Medium
CTV-15-0039	Mouthwash blending tank	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of additive solubility and recirculation; verify clarity and pH against predetermined product-specific criteria.	Operational	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0040	Mouthwash blending tank	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of clarity and pH.	Operational	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0041	Mouthwash blending tank	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and clarity and pH trends; number of runs justified by risk.	Performance	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0042	Mouthwash blending tank	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting clarity and pH.	Lifecycle	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	Medium
CTV-15-0043	Abrasivity verification	Study design / protocol: Establish applicable abrasive test for intended application	Predefined sampling, method, worst cases, limitations and acceptance rationale for Tooth surface safety and efficacy.	Planning	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0044	Abrasivity verification	Challenge / study execution: Establish applicable abrasive test for intended application	Independent raw test data, deviations, control checks, representative conditions and Tooth surface safety and efficacy.	Execution	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0045	Abrasivity verification	Result assessment / report / review: Establish applicable abrasive test for intended application	Approved conclusions, corrective actions, periodic trend or change-impact review of Tooth surface safety and efficacy.	Review	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	Medium
CTV-15-0046	pH and fluoride classification	Study design / protocol: Determine whether fluoride or disease claims invoke drug rules	Predefined sampling, method, worst cases, limitations and acceptance rationale for Regulatory classification and actives.	Planning	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0047	pH and fluoride classification	Challenge / study execution: Determine whether fluoride or disease claims invoke drug rules	Independent raw test data, deviations, control checks, representative conditions and Regulatory classification and actives.	Execution	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0048	pH and fluoride classification	Result assessment / report / review: Determine whether fluoride or disease claims invoke drug rules	Approved conclusions, corrective actions, periodic trend or change-impact review of Regulatory classification and actives.	Review	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	Medium
CTV-15-0049	Toothpaste viscosity/extrudability	Study design / protocol: Challenge storage and tube dispensing	Predefined sampling, method, worst cases, limitations and acceptance rationale for Consumer-use performance.	Planning	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0050	Toothpaste viscosity/extrudability	Challenge / study execution: Challenge storage and tube dispensing	Independent raw test data, deviations, control checks, representative conditions and Consumer-use performance.	Execution	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0051	Toothpaste viscosity/extrudability	Result assessment / report / review: Challenge storage and tube dispensing	Approved conclusions, corrective actions, periodic trend or change-impact review of Consumer-use performance.	Review	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	Medium
CTV-15-0052	Abrasive particle distribution	Study design / protocol: Assess sedimentation and uniform dispensing	Predefined sampling, method, worst cases, limitations and acceptance rationale for Physical consistency.	Planning	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-15-0053	Abrasive particle distribution	Challenge / study execution: Assess sedimentation and uniform dispensing	Independent raw test data, deviations, control checks, representative conditions and Physical consistency.	Execution	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0054	Abrasive particle distribution	Result assessment / report / review: Assess sedimentation and uniform dispensing	Approved conclusions, corrective actions, periodic trend or change-impact review of Physical consistency.	Review	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	Medium
CTV-15-0055	Mouthwash preservative challenge	Study design / protocol: Select antimicrobial protection evidence by risk	Predefined sampling, method, worst cases, limitations and acceptance rationale for ISO 11930 evaluation where appropriate.	Planning	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0056	Mouthwash preservative challenge	Challenge / study execution: Select antimicrobial protection evidence by risk	Independent raw test data, deviations, control checks, representative conditions and ISO 11930 evaluation where appropriate.	Execution	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0057	Mouthwash preservative challenge	Result assessment / report / review: Select antimicrobial protection evidence by risk	Approved conclusions, corrective actions, periodic trend or change-impact review of ISO 11930 evaluation where appropriate.	Review	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	Medium
CTV-15-0058	Oral mucosal compatibility	Study design / protocol: Assess ingredient limits and relevant safety factors	Predefined sampling, method, worst cases, limitations and acceptance rationale for Safety report / market evidence.	Planning	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0059	Oral mucosal compatibility	Challenge / study execution: Assess ingredient limits and relevant safety factors	Independent raw test data, deviations, control checks, representative conditions and Safety report / market evidence.	Execution	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	High
CTV-15-0060	Oral mucosal compatibility	Result assessment / report / review: Assess ingredient limits and relevant safety factors	Approved conclusions, corrective actions, periodic trend or change-impact review of Safety report / market evidence.	Review	Toothpastes, mouthwash, oral hygiene cosmetics where classified cosmetic	C01 C02 C16 C20	Medium

16 HAIR CONDITIONERS, DYES AND TREATMENTS

60 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-16-0001	Conditioner cationic emulsion tank	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and blend temperature and shear mapped to rheology / deposition.	Design	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0002	Conditioner cationic emulsion tank	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Conditioner cationic emulsion tank.	Installation	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	Medium
CTV-16-0003	Conditioner cationic emulsion tank	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of blend temperature and shear; verify rheology / deposition against predetermined product-specific criteria.	Operational	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0004	Conditioner cationic emulsion tank	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of rheology / deposition.	Operational	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0005	Conditioner cationic emulsion tank	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and rheology / deposition trends; number of runs justified by risk.	Performance	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0006	Conditioner cationic emulsion tank	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting rheology / deposition.	Lifecycle	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	Medium
CTV-16-0007	Hair dye colour premix mixer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and dye dispersion and local concentration mapped to colour homogeneity.	Design	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0008	Hair dye colour premix mixer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Hair dye colour premix mixer.	Installation	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	Medium
CTV-16-0009	Hair dye colour premix mixer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of dye dispersion and local concentration; verify colour homogeneity against predetermined product-specific criteria.	Operational	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0010	Hair dye colour premix mixer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of colour homogeneity.	Operational	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0011	Hair dye colour premix mixer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and colour homogeneity trends; number of runs justified by risk.	Performance	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0012	Hair dye colour premix mixer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting colour homogeneity.	Lifecycle	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	Medium
CTV-16-0013	Developer peroxide tank	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and oxidant stability and metal catalysis mapped to peroxide content.	Design	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0014	Developer peroxide tank	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Developer peroxide tank.	Installation	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	Medium
CTV-16-0015	Developer peroxide tank	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of oxidant stability and metal catalysis; verify peroxide content against predetermined product-specific criteria.	Operational	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0016	Developer peroxide tank	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of peroxide content.	Operational	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0017	Developer peroxide tank	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and peroxide content trends; number of runs justified by risk.	Performance	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0018	Developer peroxide tank	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting peroxide content.	Lifecycle	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	Medium
CTV-16-0019	Oxidant dosing system	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and metering accuracy and compatibility mapped to oxidant dose.	Design	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0020	Oxidant dosing system	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Oxidant dosing system.	Installation	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	Medium
CTV-16-0021	Oxidant dosing system	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of metering accuracy and compatibility; verify oxidant dose against predetermined product-specific criteria.	Operational	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0022	Oxidant dosing system	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of oxidant dose.	Operational	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-16-0023	Oxidant dosing system	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and oxidant dose trends; number of runs justified by risk.	Performance	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0024	Oxidant dosing system	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting oxidant dose.	Lifecycle	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	Medium
CTV-16-0025	Conditioner cooling exchanger	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and cool rate and emulsion integrity mapped to texture stability.	Design	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0026	Conditioner cooling exchanger	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Conditioner cooling exchanger.	Installation	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	Medium
CTV-16-0027	Conditioner cooling exchanger	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of cool rate and emulsion integrity; verify texture stability against predetermined product-specific criteria.	Operational	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0028	Conditioner cooling exchanger	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of texture stability.	Operational	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0029	Conditioner cooling exchanger	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and texture stability trends; number of runs justified by risk.	Performance	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0030	Conditioner cooling exchanger	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting texture stability.	Lifecycle	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	Medium
CTV-16-0031	Hair oil blend tank	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and oxidation and temperature mapped to oil consistency.	Design	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0032	Hair oil blend tank	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Hair oil blend tank.	Installation	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	Medium
CTV-16-0033	Hair oil blend tank	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of oxidation and temperature; verify oil consistency against predetermined product-specific criteria.	Operational	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0034	Hair oil blend tank	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of oil consistency.	Operational	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0035	Hair oil blend tank	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and oil consistency trends; number of runs justified by risk.	Performance	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0036	Hair oil blend tank	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting oil consistency.	Lifecycle	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	Medium
CTV-16-0037	Hair dye tube filler	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and colour code changeover mapped to colour identity.	Design	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0038	Hair dye tube filler	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Hair dye tube filler.	Installation	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	Medium
CTV-16-0039	Hair dye tube filler	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of colour code changeover; verify colour identity against predetermined product-specific criteria.	Operational	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0040	Hair dye tube filler	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of colour identity.	Operational	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0041	Hair dye tube filler	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and colour identity trends; number of runs justified by risk.	Performance	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0042	Hair dye tube filler	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting colour identity.	Lifecycle	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	Medium
CTV-16-0043	Oxidative dye colour development	Study design / protocol: Assess mixing ratio with developer and timing	Predefined sampling, method, worst cases, limitations and acceptance rationale for Colour performance and exposure.	Planning	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0044	Oxidative dye colour development	Challenge / study execution: Assess mixing ratio with developer and timing	Independent raw test data, deviations, control checks, representative conditions and Colour performance and exposure.	Execution	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0045	Oxidative dye colour development	Result assessment / report / review: Assess mixing ratio with developer and timing	Approved conclusions, corrective actions, periodic trend or change-impact review of Colour performance and exposure.	Review	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	Medium
CTV-16-0046	Peroxide concentration and stability	Study design / protocol: Challenge container and metal contact	Predefined sampling, method, worst cases, limitations and acceptance rationale for Active stability and safety.	Planning	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-16-0047	Peroxide concentration and stability	Challenge / study execution: Challenge container and metal contact	Independent raw test data, deviations, control checks, representative conditions and Active stability and safety.	Execution	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0048	Peroxide concentration and stability	Result assessment / report / review: Challenge container and metal contact	Approved conclusions, corrective actions, periodic trend or change-impact review of Active stability and safety.	Review	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	Medium
CTV-16-0049	Hair dye allergen safety / labeling	Study design / protocol: Review regulated sensitizers and market warnings	Predefined sampling, method, worst cases, limitations and acceptance rationale for Safety and label verification.	Planning	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0050	Hair dye allergen safety / labeling	Challenge / study execution: Review regulated sensitizers and market warnings	Independent raw test data, deviations, control checks, representative conditions and Safety and label verification.	Execution	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0051	Hair dye allergen safety / labeling	Result assessment / report / review: Review regulated sensitizers and market warnings	Approved conclusions, corrective actions, periodic trend or change-impact review of Safety and label verification.	Review	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	Medium
CTV-16-0052	Conditioning efficacy study	Study design / protocol: Define hair combing/friction test reproducibility	Predefined sampling, method, worst cases, limitations and acceptance rationale for Claim substantiation.	Planning	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0053	Conditioning efficacy study	Challenge / study execution: Define hair combing/friction test reproducibility	Independent raw test data, deviations, control checks, representative conditions and Claim substantiation.	Execution	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0054	Conditioning efficacy study	Result assessment / report / review: Define hair combing/friction test reproducibility	Approved conclusions, corrective actions, periodic trend or change-impact review of Claim substantiation.	Review	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	Medium
CTV-16-0055	Reactive ingredient segregation	Study design / protocol: Validate prevention of dye/developer mixing at plant	Predefined sampling, method, worst cases, limitations and acceptance rationale for No unintended reaction.	Planning	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0056	Reactive ingredient segregation	Challenge / study execution: Validate prevention of dye/developer mixing at plant	Independent raw test data, deviations, control checks, representative conditions and No unintended reaction.	Execution	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0057	Reactive ingredient segregation	Result assessment / report / review: Validate prevention of dye/developer mixing at plant	Approved conclusions, corrective actions, periodic trend or change-impact review of No unintended reaction.	Review	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	Medium
CTV-16-0058	Contact-time claim validation	Study design / protocol: Test intended use directions in relevant model	Predefined sampling, method, worst cases, limitations and acceptance rationale for Claim support.	Planning	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0059	Contact-time claim validation	Challenge / study execution: Test intended use directions in relevant model	Independent raw test data, deviations, control checks, representative conditions and Claim support.	Execution	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	High
CTV-16-0060	Contact-time claim validation	Result assessment / report / review: Test intended use directions in relevant model	Approved conclusions, corrective actions, periodic trend or change-impact review of Claim support.	Review	Hair masks, conditioners, dyes, developers, relaxers	C01 C08 C21	Medium

17 SOAPS, SYNDET AND SOLID PERSONAL-CARE BARS

66 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-17-0001	Soap saponification reactor	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and alkali charge, conversion and temperature mapped to free alkali limits.	Design	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0002	Soap saponification reactor	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Soap saponification reactor.	Installation	Soap bars, syndet bars, solid shampoo	C01 C20	Medium
CTV-17-0003	Soap saponification reactor	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of alkali charge, conversion and temperature; verify free alkali limits against predetermined product-specific criteria.	Operational	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0004	Soap saponification reactor	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of free alkali limits.	Operational	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0005	Soap saponification reactor	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and free alkali limits trends; number of runs justified by risk.	Performance	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0006	Soap saponification reactor	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting free alkali limits.	Lifecycle	Soap bars, syndet bars, solid shampoo	C01 C20	Medium
CTV-17-0007	Soap crutcher	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and mixing and moisture removal mapped to uniform soap mass.	Design	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0008	Soap crutcher	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Soap crutcher.	Installation	Soap bars, syndet bars, solid shampoo	C01 C20	Medium
CTV-17-0009	Soap crutcher	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of mixing and moisture removal; verify uniform soap mass against predetermined product-specific criteria.	Operational	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0010	Soap crutcher	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of uniform soap mass.	Operational	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0011	Soap crutcher	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and uniform soap mass trends; number of runs justified by risk.	Performance	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0012	Soap crutcher	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting uniform soap mass.	Lifecycle	Soap bars, syndet bars, solid shampoo	C01 C20	Medium
CTV-17-0013	Vacuum soap plodder	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and vacuum and extrusion speed mapped to bar density.	Design	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0014	Vacuum soap plodder	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Vacuum soap plodder.	Installation	Soap bars, syndet bars, solid shampoo	C01 C20	Medium
CTV-17-0015	Vacuum soap plodder	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of vacuum and extrusion speed; verify bar density against predetermined product-specific criteria.	Operational	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0016	Vacuum soap plodder	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of bar density.	Operational	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0017	Vacuum soap plodder	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and bar density trends; number of runs justified by risk.	Performance	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0018	Vacuum soap plodder	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting bar density.	Lifecycle	Soap bars, syndet bars, solid shampoo	C01 C20	Medium
CTV-17-0019	Soap duplex plodder	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and screw speed and die heat mapped to bar texture.	Design	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0020	Soap duplex plodder	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Soap duplex plodder.	Installation	Soap bars, syndet bars, solid shampoo	C01 C20	Medium
CTV-17-0021	Soap duplex plodder	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of screw speed and die heat; verify bar texture against predetermined product-specific criteria.	Operational	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0022	Soap duplex plodder	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of bar texture.	Operational	Soap bars, syndet bars, solid shampoo	C01 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-17-0023	Soap duplex plodder	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and bar texture trends; number of runs justified by risk.	Performance	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0024	Soap duplex plodder	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting bar texture.	Lifecycle	Soap bars, syndet bars, solid shampoo	C01 C20	Medium
CTV-17-0025	Soap cutter	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and cut length, reject and sharpening mapped to bar weight.	Design	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0026	Soap cutter	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Soap cutter.	Installation	Soap bars, syndet bars, solid shampoo	C01 C20	Medium
CTV-17-0027	Soap cutter	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of cut length, reject and sharpening; verify bar weight against predetermined product-specific criteria.	Operational	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0028	Soap cutter	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of bar weight.	Operational	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0029	Soap cutter	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and bar weight trends; number of runs justified by risk.	Performance	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0030	Soap cutter	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting bar weight.	Lifecycle	Soap bars, syndet bars, solid shampoo	C01 C20	Medium
CTV-17-0031	Soap stamper	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and stamp pressure and mould fit mapped to bar appearance.	Design	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0032	Soap stamper	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Soap stamper.	Installation	Soap bars, syndet bars, solid shampoo	C01 C20	Medium
CTV-17-0033	Soap stamper	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of stamp pressure and mould fit; verify bar appearance against predetermined product-specific criteria.	Operational	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0034	Soap stamper	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of bar appearance.	Operational	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0035	Soap stamper	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and bar appearance trends; number of runs justified by risk.	Performance	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0036	Soap stamper	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting bar appearance.	Lifecycle	Soap bars, syndet bars, solid shampoo	C01 C20	Medium
CTV-17-0037	Syndet ribbon blender	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and binder addition and mixing mapped to uniform syndet.	Design	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0038	Syndet ribbon blender	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Syndet ribbon blender.	Installation	Soap bars, syndet bars, solid shampoo	C01 C20	Medium
CTV-17-0039	Syndet ribbon blender	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of binder addition and mixing; verify uniform syndet against predetermined product-specific criteria.	Operational	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0040	Syndet ribbon blender	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of uniform syndet.	Operational	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0041	Syndet ribbon blender	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and uniform syndet trends; number of runs justified by risk.	Performance	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0042	Syndet ribbon blender	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting uniform syndet.	Lifecycle	Soap bars, syndet bars, solid shampoo	C01 C20	Medium
CTV-17-0043	Bar curing/drying rack	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and drying conditions and dwell mapped to bar moisture.	Design	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0044	Bar curing/drying rack	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Bar curing/drying rack.	Installation	Soap bars, syndet bars, solid shampoo	C01 C20	Medium
CTV-17-0045	Bar curing/drying rack	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of drying conditions and dwell; verify bar moisture against predetermined product-specific criteria.	Operational	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0046	Bar curing/drying rack	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of bar moisture.	Operational	Soap bars, syndet bars, solid shampoo	C01 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-17-0047	Bar curing/drying rack	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and bar moisture trends; number of runs justified by risk.	Performance	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0048	Bar curing/drying rack	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting bar moisture.	Lifecycle	Soap bars, syndet bars, solid shampoo	C01 C20	Medium
CTV-17-0049	Soap free alkali study	Study design / protocol: Validate titration and reaction endpoint	Predefined sampling, method, worst cases, limitations and acceptance rationale for Skin contact safety.	Planning	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0050	Soap free alkali study	Challenge / study execution: Validate titration and reaction endpoint	Independent raw test data, deviations, control checks, representative conditions and Skin contact safety.	Execution	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0051	Soap free alkali study	Result assessment / report / review: Validate titration and reaction endpoint	Approved conclusions, corrective actions, periodic trend or change-impact review of Skin contact safety.	Review	Soap bars, syndet bars, solid shampoo	C01 C20	Medium
CTV-17-0052	Bar moisture stability	Study design / protocol: Challenge humidity and shelf-life	Predefined sampling, method, worst cases, limitations and acceptance rationale for Weight and cracking.	Planning	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0053	Bar moisture stability	Challenge / study execution: Challenge humidity and shelf-life	Independent raw test data, deviations, control checks, representative conditions and Weight and cracking.	Execution	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0054	Bar moisture stability	Result assessment / report / review: Challenge humidity and shelf-life	Approved conclusions, corrective actions, periodic trend or change-impact review of Weight and cracking.	Review	Soap bars, syndet bars, solid shampoo	C01 C20	Medium
CTV-17-0055	Bar hardness and wear	Study design / protocol: Method suitability over target use	Predefined sampling, method, worst cases, limitations and acceptance rationale for Consumer-use performance.	Planning	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0056	Bar hardness and wear	Challenge / study execution: Method suitability over target use	Independent raw test data, deviations, control checks, representative conditions and Consumer-use performance.	Execution	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0057	Bar hardness and wear	Result assessment / report / review: Method suitability over target use	Approved conclusions, corrective actions, periodic trend or change-impact review of Consumer-use performance.	Review	Soap bars, syndet bars, solid shampoo	C01 C20	Medium
CTV-17-0058	Syndet pH verification	Study design / protocol: Check wet slurry pH approach	Predefined sampling, method, worst cases, limitations and acceptance rationale for Claim and mildness alignment.	Planning	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0059	Syndet pH verification	Challenge / study execution: Check wet slurry pH approach	Independent raw test data, deviations, control checks, representative conditions and Claim and mildness alignment.	Execution	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0060	Syndet pH verification	Result assessment / report / review: Check wet slurry pH approach	Approved conclusions, corrective actions, periodic trend or change-impact review of Claim and mildness alignment.	Review	Soap bars, syndet bars, solid shampoo	C01 C20	Medium
CTV-17-0061	Fragrance retention in bar	Study design / protocol: Track volatilization through curing	Predefined sampling, method, worst cases, limitations and acceptance rationale for Odour quality.	Planning	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0062	Fragrance retention in bar	Challenge / study execution: Track volatilization through curing	Independent raw test data, deviations, control checks, representative conditions and Odour quality.	Execution	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0063	Fragrance retention in bar	Result assessment / report / review: Track volatilization through curing	Approved conclusions, corrective actions, periodic trend or change-impact review of Odour quality.	Review	Soap bars, syndet bars, solid shampoo	C01 C20	Medium
CTV-17-0064	Wrapper compatibility	Study design / protocol: Evaluate oils and alkali migration	Predefined sampling, method, worst cases, limitations and acceptance rationale for Label and pack integrity.	Planning	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0065	Wrapper compatibility	Challenge / study execution: Evaluate oils and alkali migration	Independent raw test data, deviations, control checks, representative conditions and Label and pack integrity.	Execution	Soap bars, syndet bars, solid shampoo	C01 C20	High
CTV-17-0066	Wrapper compatibility	Result assessment / report / review: Evaluate oils and alkali migration	Approved conclusions, corrective actions, periodic trend or change-impact review of Label and pack integrity.	Review	Soap bars, syndet bars, solid shampoo	C01 C20	Medium

18 FRAGRANCES, SOLVENTS, NAIL PRODUCTS AND AEROSOLS

75 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-18-0001	Fragrance blending vessel	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and mixing, volatility and dosing mapped to odour profile.	Design	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0002	Fragrance blending vessel	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Fragrance blending vessel.	Installation	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0003	Fragrance blending vessel	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of mixing, volatility and dosing; verify odour profile against predetermined product-specific criteria.	Operational	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0004	Fragrance blending vessel	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of odour profile.	Operational	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0005	Fragrance blending vessel	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and odour profile trends; number of runs justified by risk.	Performance	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0006	Fragrance blending vessel	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting odour profile.	Lifecycle	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0007	Alcohol bulk storage tank	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and bonding and vapour management mapped to fire safety.	Design	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0008	Alcohol bulk storage tank	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Alcohol bulk storage tank.	Installation	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0009	Alcohol bulk storage tank	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of bonding and vapour management; verify fire safety against predetermined product-specific criteria.	Operational	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0010	Alcohol bulk storage tank	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of fire safety.	Operational	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0011	Alcohol bulk storage tank	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and fire safety trends; number of runs justified by risk.	Performance	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0012	Alcohol bulk storage tank	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting fire safety.	Lifecycle	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0013	Ethanol transfer pump	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and leak tightness and metering mapped to mass balance.	Design	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0014	Ethanol transfer pump	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Ethanol transfer pump.	Installation	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0015	Ethanol transfer pump	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of leak tightness and metering; verify mass balance against predetermined product-specific criteria.	Operational	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0016	Ethanol transfer pump	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of mass balance.	Operational	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-18-0017	Ethanol transfer pump	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and mass balance trends; number of runs justified by risk.	Performance	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0018	Ethanol transfer pump	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting mass balance.	Lifecycle	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0019	Cold fragrance maturation tank	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and temperature and contact time mapped to odour stability.	Design	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0020	Cold fragrance maturation tank	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Cold fragrance maturation tank.	Installation	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0021	Cold fragrance maturation tank	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of temperature and contact time; verify odour stability against predetermined product-specific criteria.	Operational	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0022	Cold fragrance maturation tank	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of odour stability.	Operational	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0023	Cold fragrance maturation tank	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and odour stability trends; number of runs justified by risk.	Performance	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0024	Cold fragrance maturation tank	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting odour stability.	Lifecycle	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0025	Perfume filtration system	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and filter rating and clogging mapped to clarity and colour.	Design	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0026	Perfume filtration system	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Perfume filtration system.	Installation	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0027	Perfume filtration system	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of filter rating and clogging; verify clarity and colour against predetermined product-specific criteria.	Operational	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0028	Perfume filtration system	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of clarity and colour.	Operational	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0029	Perfume filtration system	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and clarity and colour trends; number of runs justified by risk.	Performance	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0030	Perfume filtration system	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting clarity and colour.	Lifecycle	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0031	Nail lacquer mixing vessel	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and solvent concentration and mixing mapped to viscosity consistency.	Design	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0032	Nail lacquer mixing vessel	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Nail lacquer mixing vessel.	Installation	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0033	Nail lacquer mixing vessel	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of solvent concentration and mixing; verify viscosity consistency against predetermined product-specific criteria.	Operational	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0034	Nail lacquer mixing vessel	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of viscosity consistency.	Operational	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-18-0035	Nail lacquer mixing vessel	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and viscosity consistency trends; number of runs justified by risk.	Performance	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0036	Nail lacquer mixing vessel	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting viscosity consistency.	Lifecycle	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0037	Explosion-protected extraction system	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and capture and alarm response mapped to flammable atmosphere control.	Design	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0038	Explosion-protected extraction system	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Explosion-protected extraction system.	Installation	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0039	Explosion-protected extraction system	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of capture and alarm response; verify flammable atmosphere control against predetermined product-specific criteria.	Operational	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0040	Explosion-protected extraction system	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of flammable atmosphere control.	Operational	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0041	Explosion-protected extraction system	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and flammable atmosphere control trends; number of runs justified by risk.	Performance	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0042	Explosion-protected extraction system	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting flammable atmosphere control.	Lifecycle	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0043	Aerosol propellant charging unit	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and propellant mass and line pressure mapped to can content and pressure.	Design	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0044	Aerosol propellant charging unit	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Aerosol propellant charging unit.	Installation	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0045	Aerosol propellant charging unit	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of propellant mass and line pressure; verify can content and pressure against predetermined product-specific criteria.	Operational	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0046	Aerosol propellant charging unit	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of can content and pressure.	Operational	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0047	Aerosol propellant charging unit	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and can content and pressure trends; number of runs justified by risk.	Performance	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0048	Aerosol propellant charging unit	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting can content and pressure.	Lifecycle	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0049	Aerosol crimp station	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and crimp dimension and sealing force mapped to leak prevention.	Design	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0050	Aerosol crimp station	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Aerosol crimp station.	Installation	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0051	Aerosol crimp station	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of crimp dimension and sealing force; verify leak prevention against predetermined product-specific criteria.	Operational	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0052	Aerosol crimp station	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of leak prevention.	Operational	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-18-0053	Aerosol crimp station	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and leak prevention trends; number of runs justified by risk.	Performance	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0054	Aerosol crimp station	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting leak prevention.	Lifecycle	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0055	Flash point and classified zone assessment	Study design / protocol: Assess vapor/ventilation and ignition controls	Predefined sampling, method, worst cases, limitations and acceptance rationale for EHS explosion prevention evidence.	Planning	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0056	Flash point and classified zone assessment	Challenge / study execution: Assess vapor/ventilation and ignition controls	Independent raw test data, deviations, control checks, representative conditions and EHS explosion prevention evidence.	Execution	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0057	Flash point and classified zone assessment	Result assessment / report / review: Assess vapor/ventilation and ignition controls	Approved conclusions, corrective actions, periodic trend or change-impact review of EHS explosion prevention evidence.	Review	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0058	Alcohol concentration assay	Study design / protocol: Demonstrate method and batch control	Predefined sampling, method, worst cases, limitations and acceptance rationale for Product composition.	Planning	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0059	Alcohol concentration assay	Challenge / study execution: Demonstrate method and batch control	Independent raw test data, deviations, control checks, representative conditions and Product composition.	Execution	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0060	Alcohol concentration assay	Result assessment / report / review: Demonstrate method and batch control	Approved conclusions, corrective actions, periodic trend or change-impact review of Product composition.	Review	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0061	Perfume maturation effects	Study design / protocol: Track organoleptic and turbidity changes	Predefined sampling, method, worst cases, limitations and acceptance rationale for Reproducible fragrance.	Planning	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0062	Perfume maturation effects	Challenge / study execution: Track organoleptic and turbidity changes	Independent raw test data, deviations, control checks, representative conditions and Reproducible fragrance.	Execution	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0063	Perfume maturation effects	Result assessment / report / review: Track organoleptic and turbidity changes	Approved conclusions, corrective actions, periodic trend or change-impact review of Reproducible fragrance.	Review	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0064	Nail polish solvent loss	Study design / protocol: Evaluate fill loss and closure seal	Predefined sampling, method, worst cases, limitations and acceptance rationale for Viscosity / shelf life.	Planning	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0065	Nail polish solvent loss	Challenge / study execution: Evaluate fill loss and closure seal	Independent raw test data, deviations, control checks, representative conditions and Viscosity / shelf life.	Execution	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0066	Nail polish solvent loss	Result assessment / report / review: Evaluate fill loss and closure seal	Approved conclusions, corrective actions, periodic trend or change-impact review of Viscosity / shelf life.	Review	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0067	Aerosol valve/propellant compatibility	Study design / protocol: Challenge seal, leakage and discharge	Predefined sampling, method, worst cases, limitations and acceptance rationale for Dispensing functionality.	Planning	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0068	Aerosol valve/propellant compatibility	Challenge / study execution: Challenge seal, leakage and discharge	Independent raw test data, deviations, control checks, representative conditions and Dispensing functionality.	Execution	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0069	Aerosol valve/propellant compatibility	Result assessment / report / review: Challenge seal, leakage and discharge	Approved conclusions, corrective actions, periodic trend or change-impact review of Dispensing functionality.	Review	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0070	Aerosol spray pattern	Study design / protocol: Test spray rate, droplets and clogging	Predefined sampling, method, worst cases, limitations and acceptance rationale for Consumer use performance.	Planning	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-18-0071	Aerosol spray pattern	Challenge / study execution: Test spray rate, droplets and clogging	Independent raw test data, deviations, control checks, representative conditions and Consumer use performance.	Execution	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0072	Aerosol spray pattern	Result assessment / report / review: Test spray rate, droplets and clogging	Approved conclusions, corrective actions, periodic trend or change-impact review of Consumer use performance.	Review	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium
CTV-18-0073	Flammable handling incidents	Study design / protocol: Challenge spill and emergency response	Predefined sampling, method, worst cases, limitations and acceptance rationale for Safe process recovery.	Planning	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0074	Flammable handling incidents	Challenge / study execution: Challenge spill and emergency response	Independent raw test data, deviations, control checks, representative conditions and Safe process recovery.	Execution	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	High
CTV-18-0075	Flammable handling incidents	Result assessment / report / review: Challenge spill and emergency response	Approved conclusions, corrective actions, periodic trend or change-impact review of Safe process recovery.	Review	Perfumes, deodorants, nail polish, alcohol sprays; market dependent	C01 C20 C21	Medium

19 BULK HOLDING, INTERMEDIATE TRANSFER AND HOLD TIMES

63 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-19-0001	Mobile intermediate vessel	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and lid closure, mobility and temperature mapped to bulk integrity.	Design	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0002	Mobile intermediate vessel	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Mobile intermediate vessel.	Installation	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	Medium
CTV-19-0003	Mobile intermediate vessel	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of lid closure, mobility and temperature; verify bulk integrity against predetermined product-specific criteria.	Operational	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0004	Mobile intermediate vessel	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of bulk integrity.	Operational	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0005	Mobile intermediate vessel	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and bulk integrity trends; number of runs justified by risk.	Performance	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0006	Mobile intermediate vessel	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting bulk integrity.	Lifecycle	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	Medium
CTV-19-0007	IBCs for cosmetic bulk	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and cleanability and turnover mapped to carryover prevention.	Design	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0008	IBCs for cosmetic bulk	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for IBCs for cosmetic bulk.	Installation	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	Medium
CTV-19-0009	IBCs for cosmetic bulk	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of cleanability and turnover; verify carryover prevention against predetermined product-specific criteria.	Operational	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0010	IBCs for cosmetic bulk	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of carryover prevention.	Operational	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0011	IBCs for cosmetic bulk	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and carryover prevention trends; number of runs justified by risk.	Performance	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0012	IBCs for cosmetic bulk	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting carryover prevention.	Lifecycle	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	Medium
CTV-19-0013	Hold tank with agitator	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and low/high hold times and mixing speed mapped to homogeneity and microbial status.	Design	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0014	Hold tank with agitator	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Hold tank with agitator.	Installation	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	Medium
CTV-19-0015	Hold tank with agitator	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of low/high hold times and mixing speed; verify homogeneity and microbial status against predetermined product-specific criteria.	Operational	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0016	Hold tank with agitator	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of homogeneity and microbial status.	Operational	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-19-0017	Hold tank with agitator	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and homogeneity and microbial status trends; number of runs justified by risk.	Performance	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0018	Hold tank with agitator	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting homogeneity and microbial status.	Lifecycle	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	Medium
CTV-19-0019	Flexible transfer hoses	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and length, attachment and drainability mapped to residual and biofilm risk.	Design	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0020	Flexible transfer hoses	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Flexible transfer hoses.	Installation	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	Medium
CTV-19-0021	Flexible transfer hoses	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of length, attachment and drainability; verify residual and biofilm risk against predetermined product-specific criteria.	Operational	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0022	Flexible transfer hoses	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of residual and biofilm risk.	Operational	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0023	Flexible transfer hoses	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and residual and biofilm risk trends; number of runs justified by risk.	Performance	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0024	Flexible transfer hoses	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting residual and biofilm risk.	Lifecycle	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	Medium
CTV-19-0025	Sanitary lobe transfer pump	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and flow shear and dead-volume mapped to bulk consistency.	Design	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0026	Sanitary lobe transfer pump	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Sanitary lobe transfer pump.	Installation	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	Medium
CTV-19-0027	Sanitary lobe transfer pump	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of flow shear and dead-volume; verify bulk consistency against predetermined product-specific criteria.	Operational	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0028	Sanitary lobe transfer pump	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of bulk consistency.	Operational	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0029	Sanitary lobe transfer pump	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and bulk consistency trends; number of runs justified by risk.	Performance	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0030	Sanitary lobe transfer pump	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting bulk consistency.	Lifecycle	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	Medium
CTV-19-0031	Transfer inline filter	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and pressure and filter compatibility mapped to foreign matter reduction.	Design	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0032	Transfer inline filter	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Transfer inline filter.	Installation	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	Medium
CTV-19-0033	Transfer inline filter	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of pressure and filter compatibility; verify foreign matter reduction against predetermined product-specific criteria.	Operational	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0034	Transfer inline filter	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of foreign matter reduction.	Operational	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-19-0035	Transfer inline filter	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and foreign matter reduction trends; number of runs justified by risk.	Performance	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0036	Transfer inline filter	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting foreign matter reduction.	Lifecycle	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	Medium
CTV-19-0037	Bulk container docking system	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and open transfer time and seals mapped to exposure control.	Design	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0038	Bulk container docking system	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Bulk container docking system.	Installation	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	Medium
CTV-19-0039	Bulk container docking system	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of open transfer time and seals; verify exposure control against predetermined product-specific criteria.	Operational	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0040	Bulk container docking system	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of exposure control.	Operational	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0041	Bulk container docking system	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and exposure control trends; number of runs justified by risk.	Performance	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0042	Bulk container docking system	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting exposure control.	Lifecycle	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	Medium
CTV-19-0043	Maximum pre-fill bulk hold	Study design / protocol: Time/temperature challenge from manufacturing to fill	Predefined sampling, method, worst cases, limitations and acceptance rationale for pH, viscosity, microbial trend.	Planning	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0044	Maximum pre-fill bulk hold	Challenge / study execution: Time/temperature challenge from manufacturing to fill	Independent raw test data, deviations, control checks, representative conditions and pH, viscosity, microbial trend.	Execution	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0045	Maximum pre-fill bulk hold	Result assessment / report / review: Time/temperature challenge from manufacturing to fill	Approved conclusions, corrective actions, periodic trend or change-impact review of pH, viscosity, microbial trend.	Review	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	Medium
CTV-19-0046	Pre-preservative intermediate hold	Study design / protocol: Validate vulnerable aqueous phase residence	Predefined sampling, method, worst cases, limitations and acceptance rationale for Bioburden limits before preservative addition.	Planning	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0047	Pre-preservative intermediate hold	Challenge / study execution: Validate vulnerable aqueous phase residence	Independent raw test data, deviations, control checks, representative conditions and Bioburden limits before preservative addition.	Execution	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0048	Pre-preservative intermediate hold	Result assessment / report / review: Validate vulnerable aqueous phase residence	Approved conclusions, corrective actions, periodic trend or change-impact review of Bioburden limits before preservative addition.	Review	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	Medium
CTV-19-0049	Open vessel exposure	Study design / protocol: Challenge defined maximum uncovered exposure	Predefined sampling, method, worst cases, limitations and acceptance rationale for Foreign body and micro risk.	Planning	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0050	Open vessel exposure	Challenge / study execution: Challenge defined maximum uncovered exposure	Independent raw test data, deviations, control checks, representative conditions and Foreign body and micro risk.	Execution	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0051	Open vessel exposure	Result assessment / report / review: Challenge defined maximum uncovered exposure	Approved conclusions, corrective actions, periodic trend or change-impact review of Foreign body and micro risk.	Review	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	Medium
CTV-19-0052	Interrupted batch restart	Study design / protocol: Define action for power failure or weekend hold	Predefined sampling, method, worst cases, limitations and acceptance rationale for QA decisions and additional testing.	Planning	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-19-0053	Interrupted batch restart	Challenge / study execution: Define action for power failure or weekend hold	Independent raw test data, deviations, control checks, representative conditions and QA decisions and additional testing.	Execution	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0054	Interrupted batch restart	Result assessment / report / review: Define action for power failure or weekend hold	Approved conclusions, corrective actions, periodic trend or change-impact review of QA decisions and additional testing.	Review	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	Medium
CTV-19-0055	Bulk transport internal	Study design / protocol: Validate transport between buildings or sites	Predefined sampling, method, worst cases, limitations and acceptance rationale for Spill, hold time, temp exposure.	Planning	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0056	Bulk transport internal	Challenge / study execution: Validate transport between buildings or sites	Independent raw test data, deviations, control checks, representative conditions and Spill, hold time, temp exposure.	Execution	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0057	Bulk transport internal	Result assessment / report / review: Validate transport between buildings or sites	Approved conclusions, corrective actions, periodic trend or change-impact review of Spill, hold time, temp exposure.	Review	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	Medium
CTV-19-0058	In-process sample hold	Study design / protocol: Check sample preservation and analytical suitability	Predefined sampling, method, worst cases, limitations and acceptance rationale for Accurate QC results.	Planning	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0059	In-process sample hold	Challenge / study execution: Check sample preservation and analytical suitability	Independent raw test data, deviations, control checks, representative conditions and Accurate QC results.	Execution	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0060	In-process sample hold	Result assessment / report / review: Check sample preservation and analytical suitability	Approved conclusions, corrective actions, periodic trend or change-impact review of Accurate QC results.	Review	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	Medium
CTV-19-0061	Hold vessel cleaning status	Study design / protocol: Define dirty hold and clean hold	Predefined sampling, method, worst cases, limitations and acceptance rationale for Residue and microbial monitoring.	Planning	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0062	Hold vessel cleaning status	Challenge / study execution: Define dirty hold and clean hold	Independent raw test data, deviations, control checks, representative conditions and Residue and microbial monitoring.	Execution	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	High
CTV-19-0063	Hold vessel cleaning status	Result assessment / report / review: Define dirty hold and clean hold	Approved conclusions, corrective actions, periodic trend or change-impact review of Residue and microbial monitoring.	Review	Wet bulk creams, gels, shampoos, emulsions and oils	C01 C08 C09 C10	Medium

20 FILLING CREAMS, LIQUIDS, GELS AND PASTES

93 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-20-0001	Piston cream filler	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and fill speed, stroke and temperature mapped to net content.	Design	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0002	Piston cream filler	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Piston cream filler.	Installation	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0003	Piston cream filler	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of fill speed, stroke and temperature; verify net content against predetermined product-specific criteria.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0004	Piston cream filler	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of net content.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0005	Piston cream filler	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and net content trends; number of runs justified by risk.	Performance	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0006	Piston cream filler	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting net content.	Lifecycle	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0007	Peristaltic liquid filler	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and pump tube wear and fill accuracy mapped to dose uniformity.	Design	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0008	Peristaltic liquid filler	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Peristaltic liquid filler.	Installation	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0009	Peristaltic liquid filler	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of pump tube wear and fill accuracy; verify dose uniformity against predetermined product-specific criteria.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0010	Peristaltic liquid filler	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of dose uniformity.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0011	Peristaltic liquid filler	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and dose uniformity trends; number of runs justified by risk.	Performance	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0012	Peristaltic liquid filler	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting dose uniformity.	Lifecycle	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0013	Gravity liquid filler	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and flow-head sensitivity mapped to fill mass/volume.	Design	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0014	Gravity liquid filler	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Gravity liquid filler.	Installation	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0015	Gravity liquid filler	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of flow-head sensitivity; verify fill mass/volume against predetermined product-specific criteria.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0016	Gravity liquid filler	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of fill mass/volume.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0017	Gravity liquid filler	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and fill mass/volume trends; number of runs justified by risk.	Performance	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0018	Gravity liquid filler	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting fill mass/volume.	Lifecycle	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0019	Rotary bottle filling line	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and index speed and nozzle control mapped to fill variation.	Design	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0020	Rotary bottle filling line	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Rotary bottle filling line.	Installation	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0021	Rotary bottle filling line	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of index speed and nozzle control; verify fill variation against predetermined product-specific criteria.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0022	Rotary bottle filling line	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of fill variation.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-20-0023	Rotary bottle filling line	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and fill variation trends; number of runs justified by risk.	Performance	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0024	Rotary bottle filling line	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting fill variation.	Lifecycle	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0025	Servo multihead filler	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and machine recipe and nozzle synchronization mapped to repeatable fill.	Design	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0026	Servo multihead filler	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Servo multihead filler.	Installation	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0027	Servo multihead filler	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of machine recipe and nozzle synchronization; verify repeatable fill against predetermined product-specific criteria.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0028	Servo multihead filler	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of repeatable fill.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0029	Servo multihead filler	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and repeatable fill trends; number of runs justified by risk.	Performance	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0030	Servo multihead filler	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting repeatable fill.	Lifecycle	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0031	Tube filling machine	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and sealing temperature, tube coding and fill mapped to seal quality.	Design	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0032	Tube filling machine	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Tube filling machine.	Installation	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0033	Tube filling machine	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of sealing temperature, tube coding and fill; verify seal quality against predetermined product-specific criteria.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0034	Tube filling machine	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of seal quality.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0035	Tube filling machine	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and seal quality trends; number of runs justified by risk.	Performance	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0036	Tube filling machine	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting seal quality.	Lifecycle	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0037	Jar filling machine	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and scooping, air inclusion and scrapers mapped to net content / appearance.	Design	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0038	Jar filling machine	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Jar filling machine.	Installation	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0039	Jar filling machine	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of scooping, air inclusion and scrapers; verify net content / appearance against predetermined product-specific criteria.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0040	Jar filling machine	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of net content / appearance.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0041	Jar filling machine	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and net content / appearance trends; number of runs justified by risk.	Performance	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0042	Jar filling machine	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting net content / appearance.	Lifecycle	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0043	Form-fill-seal sachet machine	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and seal dwell, temperature and weight mapped to sachet integrity.	Design	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0044	Form-fill-seal sachet machine	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Form-fill-seal sachet machine.	Installation	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0045	Form-fill-seal sachet machine	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of seal dwell, temperature and weight; verify sachet integrity against predetermined product-specific criteria.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0046	Form-fill-seal sachet machine	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of sachet integrity.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-20-0047	Form-fill-seal sachet machine	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and sachet integrity trends; number of runs justified by risk.	Performance	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0048	Form-fill-seal sachet machine	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting sachet integrity.	Lifecycle	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0049	Pouch filling line	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and pouch mouth contamination and sealing mapped to seal integrity.	Design	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0050	Pouch filling line	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Pouch filling line.	Installation	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0051	Pouch filling line	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of pouch mouth contamination and sealing; verify seal integrity against predetermined product-specific criteria.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0052	Pouch filling line	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of seal integrity.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0053	Pouch filling line	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and seal integrity trends; number of runs justified by risk.	Performance	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0054	Pouch filling line	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting seal integrity.	Lifecycle	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0055	Filling hopper	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and temperature and agitation mapped to bulk homogeneity.	Design	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0056	Filling hopper	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Filling hopper.	Installation	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0057	Filling hopper	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of temperature and agitation; verify bulk homogeneity against predetermined product-specific criteria.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0058	Filling hopper	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of bulk homogeneity.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0059	Filling hopper	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and bulk homogeneity trends; number of runs justified by risk.	Performance	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0060	Filling hopper	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting bulk homogeneity.	Lifecycle	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0061	Automatic checkweigher	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and reject challenge across tolerances mapped to net content compliance.	Design	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0062	Automatic checkweigher	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Automatic checkweigher.	Installation	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0063	Automatic checkweigher	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of reject challenge across tolerances; verify net content compliance against predetermined product-specific criteria.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0064	Automatic checkweigher	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of net content compliance.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0065	Automatic checkweigher	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and net content compliance trends; number of runs justified by risk.	Performance	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0066	Automatic checkweigher	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting net content compliance.	Lifecycle	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0067	Capping/torquing machine	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and tightening torque, cap liner seating mapped to leak prevention.	Design	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0068	Capping/torquing machine	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Capping/torquing machine.	Installation	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0069	Capping/torquing machine	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of tightening torque, cap liner seating; verify leak prevention against predetermined product-specific criteria.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0070	Capping/torquing machine	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of leak prevention.	Operational	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-20-0071	Capping/torquing machine	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and leak prevention trends; number of runs justified by risk.	Performance	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0072	Capping/torquing machine	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting leak prevention.	Lifecycle	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0073	Filling net content study	Study design / protocol: Challenge speed, viscosity, fill nozzle and container size	Predefined sampling, method, worst cases, limitations and acceptance rationale for Declared fill and legal metrology.	Planning	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0074	Filling net content study	Challenge / study execution: Challenge speed, viscosity, fill nozzle and container size	Independent raw test data, deviations, control checks, representative conditions and Declared fill and legal metrology.	Execution	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0075	Filling net content study	Result assessment / report / review: Challenge speed, viscosity, fill nozzle and container size	Approved conclusions, corrective actions, periodic trend or change-impact review of Declared fill and legal metrology.	Review	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0076	Product contact time on line	Study design / protocol: Study prolonged filled/hopper exposure	Predefined sampling, method, worst cases, limitations and acceptance rationale for Micro stability and viscosity.	Planning	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0077	Product contact time on line	Challenge / study execution: Study prolonged filled/hopper exposure	Independent raw test data, deviations, control checks, representative conditions and Micro stability and viscosity.	Execution	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0078	Product contact time on line	Result assessment / report / review: Study prolonged filled/hopper exposure	Approved conclusions, corrective actions, periodic trend or change-impact review of Micro stability and viscosity.	Review	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0079	Foaming / stringing control	Study design / protocol: Challenge liquid surfactant and gel viscosity	Predefined sampling, method, worst cases, limitations and acceptance rationale for Appearance, fill mass.	Planning	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0080	Foaming / stringing control	Challenge / study execution: Challenge liquid surfactant and gel viscosity	Independent raw test data, deviations, control checks, representative conditions and Appearance, fill mass.	Execution	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0081	Foaming / stringing control	Result assessment / report / review: Challenge liquid surfactant and gel viscosity	Approved conclusions, corrective actions, periodic trend or change-impact review of Appearance, fill mass.	Review	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0082	First/middle/end bottle verification	Study design / protocol: Sample line start and end of run	Predefined sampling, method, worst cases, limitations and acceptance rationale for Consistency across batch.	Planning	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0083	First/middle/end bottle verification	Challenge / study execution: Sample line start and end of run	Independent raw test data, deviations, control checks, representative conditions and Consistency across batch.	Execution	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0084	First/middle/end bottle verification	Result assessment / report / review: Sample line start and end of run	Approved conclusions, corrective actions, periodic trend or change-impact review of Consistency across batch.	Review	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0085	Bottle drip and cap contamination	Study design / protocol: Assess filling string and closure area	Predefined sampling, method, worst cases, limitations and acceptance rationale for Seal integrity.	Planning	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0086	Bottle drip and cap contamination	Challenge / study execution: Assess filling string and closure area	Independent raw test data, deviations, control checks, representative conditions and Seal integrity.	Execution	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0087	Bottle drip and cap contamination	Result assessment / report / review: Assess filling string and closure area	Approved conclusions, corrective actions, periodic trend or change-impact review of Seal integrity.	Review	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0088	Line start/stop control	Study design / protocol: Challenge interruptions, restarts and bottle no-fill	Predefined sampling, method, worst cases, limitations and acceptance rationale for No underfill/overfill.	Planning	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0089	Line start/stop control	Challenge / study execution: Challenge interruptions, restarts and bottle no-fill	Independent raw test data, deviations, control checks, representative conditions and No underfill/overfill.	Execution	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0090	Line start/stop control	Result assessment / report / review: Challenge interruptions, restarts and bottle no-fill	Approved conclusions, corrective actions, periodic trend or change-impact review of No underfill/overfill.	Review	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium
CTV-20-0091	High-temperature hot-fill	Study design / protocol: Challenge product and pack temperature limits	Predefined sampling, method, worst cases, limitations and acceptance rationale for Pack distortion / microbial risk.	Planning	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0092	High-temperature hot-fill	Challenge / study execution: Challenge product and pack temperature limits	Independent raw test data, deviations, control checks, representative conditions and Pack distortion / microbial risk.	Execution	Tube, bottle, jar, sachet and pouch packaging	C01 C20	High
CTV-20-0093	High-temperature hot-fill	Result assessment / report / review: Challenge product and pack temperature limits	Approved conclusions, corrective actions, periodic trend or change-impact review of Pack distortion / microbial risk.	Review	Tube, bottle, jar, sachet and pouch packaging	C01 C20	Medium

21 POWDER, COMPACT AND LIPSTICK FILLING/FINISHING

66 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-21-0001	Powder auger filler	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and bulk density and screw rotation mapped to fill mass.	Design	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0002	Powder auger filler	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Powder auger filler.	Installation	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	Medium
CTV-21-0003	Powder auger filler	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of bulk density and screw rotation; verify fill mass against predetermined product-specific criteria.	Operational	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0004	Powder auger filler	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of fill mass.	Operational	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0005	Powder auger filler	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and fill mass trends; number of runs justified by risk.	Performance	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0006	Powder auger filler	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting fill mass.	Lifecycle	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	Medium
CTV-21-0007	Powder vacuum filler	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and suction/time and dust collection mapped to fill consistency.	Design	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0008	Powder vacuum filler	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Powder vacuum filler.	Installation	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	Medium
CTV-21-0009	Powder vacuum filler	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of suction/time and dust collection; verify fill consistency against predetermined product-specific criteria.	Operational	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0010	Powder vacuum filler	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of fill consistency.	Operational	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0011	Powder vacuum filler	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and fill consistency trends; number of runs justified by risk.	Performance	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0012	Powder vacuum filler	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting fill consistency.	Lifecycle	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	Medium
CTV-21-0013	Compact press and pan feeder	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and powder metering and compression mapped to weight and cake integrity.	Design	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0014	Compact press and pan feeder	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Compact press and pan feeder.	Installation	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	Medium
CTV-21-0015	Compact press and pan feeder	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of powder metering and compression; verify weight and cake integrity against predetermined product-specific criteria.	Operational	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0016	Compact press and pan feeder	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of weight and cake integrity.	Operational	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-21-0017	Compact press and pan feeder	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and weight and cake integrity trends; number of runs justified by risk.	Performance	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0018	Compact press and pan feeder	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting weight and cake integrity.	Lifecycle	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	Medium
CTV-21-0019	Lipstick moulding station	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and mould temperature and dwell mapped to shape and appearance.	Design	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0020	Lipstick moulding station	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Lipstick moulding station.	Installation	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	Medium
CTV-21-0021	Lipstick moulding station	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of mould temperature and dwell; verify shape and appearance against predetermined product-specific criteria.	Operational	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0022	Lipstick moulding station	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of shape and appearance.	Operational	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0023	Lipstick moulding station	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and shape and appearance trends; number of runs justified by risk.	Performance	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0024	Lipstick moulding station	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting shape and appearance.	Lifecycle	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	Medium
CTV-21-0025	Lipstick case assembly	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and stick insertion force mapped to package functionality.	Design	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0026	Lipstick case assembly	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Lipstick case assembly.	Installation	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	Medium
CTV-21-0027	Lipstick case assembly	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of stick insertion force; verify package functionality against predetermined product-specific criteria.	Operational	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0028	Lipstick case assembly	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of package functionality.	Operational	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0029	Lipstick case assembly	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and package functionality trends; number of runs justified by risk.	Performance	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0030	Lipstick case assembly	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting package functionality.	Lifecycle	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	Medium
CTV-21-0031	Lip balm stick filler	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and nozzle temp and cooling profile mapped to fill mass/texture.	Design	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0032	Lip balm stick filler	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Lip balm stick filler.	Installation	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	Medium
CTV-21-0033	Lip balm stick filler	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of nozzle temp and cooling profile; verify fill mass/texture against predetermined product-specific criteria.	Operational	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0034	Lip balm stick filler	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of fill mass/texture.	Operational	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-21-0035	Lip balm stick filler	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and fill mass/texture trends; number of runs justified by risk.	Performance	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0036	Lip balm stick filler	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting fill mass/texture.	Lifecycle	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	Medium
CTV-21-0037	Pencil extrusion/moulding line	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and die gap, heating and cooling mapped to shape and application.	Design	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0038	Pencil extrusion/moulding line	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Pencil extrusion/moulding line.	Installation	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	Medium
CTV-21-0039	Pencil extrusion/moulding line	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of die gap, heating and cooling; verify shape and application against predetermined product-specific criteria.	Operational	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0040	Pencil extrusion/moulding line	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of shape and application.	Operational	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0041	Pencil extrusion/moulding line	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and shape and application trends; number of runs justified by risk.	Performance	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0042	Pencil extrusion/moulding line	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting shape and application.	Lifecycle	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	Medium
CTV-21-0043	Compact pan adhesive station	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and adhesive distribution mapped to pan retention.	Design	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0044	Compact pan adhesive station	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Compact pan adhesive station.	Installation	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	Medium
CTV-21-0045	Compact pan adhesive station	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of adhesive distribution; verify pan retention against predetermined product-specific criteria.	Operational	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0046	Compact pan adhesive station	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of pan retention.	Operational	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0047	Compact pan adhesive station	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and pan retention trends; number of runs justified by risk.	Performance	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0048	Compact pan adhesive station	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting pan retention.	Lifecycle	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	Medium
CTV-21-0049	Powder bulk density effect	Study design / protocol: Evaluate fill accuracy after lot changes	Predefined sampling, method, worst cases, limitations and acceptance rationale for Net content consistency.	Planning	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0050	Powder bulk density effect	Challenge / study execution: Evaluate fill accuracy after lot changes	Independent raw test data, deviations, control checks, representative conditions and Net content consistency.	Execution	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0051	Powder bulk density effect	Result assessment / report / review: Evaluate fill accuracy after lot changes	Approved conclusions, corrective actions, periodic trend or change-impact review of Net content consistency.	Review	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	Medium
CTV-21-0052	Compact drop resistance	Study design / protocol: Challenge application and transport drops	Predefined sampling, method, worst cases, limitations and acceptance rationale for No pan breakage.	Planning	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-21-0053	Compact drop resistance	Challenge / study execution: Challenge application and transport drops	Independent raw test data, deviations, control checks, representative conditions and No pan breakage.	Execution	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0054	Compact drop resistance	Result assessment / report / review: Challenge application and transport drops	Approved conclusions, corrective actions, periodic trend or change-impact review of No pan breakage.	Review	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	Medium
CTV-21-0055	Lipstick thermal cycle	Study design / protocol: Assess softening/warping under heat	Predefined sampling, method, worst cases, limitations and acceptance rationale for Pack and stick stability.	Planning	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0056	Lipstick thermal cycle	Challenge / study execution: Assess softening/warping under heat	Independent raw test data, deviations, control checks, representative conditions and Pack and stick stability.	Execution	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0057	Lipstick thermal cycle	Result assessment / report / review: Assess softening/warping under heat	Approved conclusions, corrective actions, periodic trend or change-impact review of Pack and stick stability.	Review	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	Medium
CTV-21-0058	Cosmetic pencil hardness	Study design / protocol: Develop strength and slip performance	Predefined sampling, method, worst cases, limitations and acceptance rationale for Use claims.	Planning	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0059	Cosmetic pencil hardness	Challenge / study execution: Develop strength and slip performance	Independent raw test data, deviations, control checks, representative conditions and Use claims.	Execution	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0060	Cosmetic pencil hardness	Result assessment / report / review: Develop strength and slip performance	Approved conclusions, corrective actions, periodic trend or change-impact review of Use claims.	Review	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	Medium
CTV-21-0061	Broken cake reject	Study design / protocol: Challenge vision sensors and line clearance	Predefined sampling, method, worst cases, limitations and acceptance rationale for Defect detection.	Planning	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0062	Broken cake reject	Challenge / study execution: Challenge vision sensors and line clearance	Independent raw test data, deviations, control checks, representative conditions and Defect detection.	Execution	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0063	Broken cake reject	Result assessment / report / review: Challenge vision sensors and line clearance	Approved conclusions, corrective actions, periodic trend or change-impact review of Defect detection.	Review	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	Medium
CTV-21-0064	Colour changeover	Study design / protocol: Validate preventive controls for pigments carryover	Predefined sampling, method, worst cases, limitations and acceptance rationale for No wrong shade.	Planning	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0065	Colour changeover	Challenge / study execution: Validate preventive controls for pigments carryover	Independent raw test data, deviations, control checks, representative conditions and No wrong shade.	Execution	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	High
CTV-21-0066	Colour changeover	Result assessment / report / review: Validate preventive controls for pigments carryover	Approved conclusions, corrective actions, periodic trend or change-impact review of No wrong shade.	Review	Powders, compacts, lipsticks, pencils, solid sticks	C01 C20	Medium

22 SPRAY, PUMP AND AEROSOL PACK VALIDATION

60 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-22-0001	Trigger spray bottle filler	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and nozzle fill and headspace mapped to spray volume.	Design	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0002	Trigger spray bottle filler	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Trigger spray bottle filler.	Installation	Spray, mist, pump, roll-on and aerosol packages	C01 C20	Medium
CTV-22-0003	Trigger spray bottle filler	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of nozzle fill and headspace; verify spray volume against predetermined product-specific criteria.	Operational	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0004	Trigger spray bottle filler	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of spray volume.	Operational	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0005	Trigger spray bottle filler	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and spray volume trends; number of runs justified by risk.	Performance	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0006	Trigger spray bottle filler	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting spray volume.	Lifecycle	Spray, mist, pump, roll-on and aerosol packages	C01 C20	Medium
CTV-22-0007	Fine-mist atomizer assembly	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and dip tube insertion and gasket fit mapped to spray functionality.	Design	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0008	Fine-mist atomizer assembly	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Fine-mist atomizer assembly.	Installation	Spray, mist, pump, roll-on and aerosol packages	C01 C20	Medium
CTV-22-0009	Fine-mist atomizer assembly	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of dip tube insertion and gasket fit; verify spray functionality against predetermined product-specific criteria.	Operational	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0010	Fine-mist atomizer assembly	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of spray functionality.	Operational	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0011	Fine-mist atomizer assembly	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and spray functionality trends; number of runs justified by risk.	Performance	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0012	Fine-mist atomizer assembly	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting spray functionality.	Lifecycle	Spray, mist, pump, roll-on and aerosol packages	C01 C20	Medium
CTV-22-0013	Roll-on bottle filler	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and ball seating and closure mapped to leak safety.	Design	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0014	Roll-on bottle filler	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Roll-on bottle filler.	Installation	Spray, mist, pump, roll-on and aerosol packages	C01 C20	Medium
CTV-22-0015	Roll-on bottle filler	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of ball seating and closure; verify leak safety against predetermined product-specific criteria.	Operational	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0016	Roll-on bottle filler	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of leak safety.	Operational	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0017	Roll-on bottle filler	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and leak safety trends; number of runs justified by risk.	Performance	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0018	Roll-on bottle filler	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting leak safety.	Lifecycle	Spray, mist, pump, roll-on and aerosol packages	C01 C20	Medium
CTV-22-0019	Aerosol filling/charging line	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and propellant weight and crimp mapped to pressure integrity.	Design	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0020	Aerosol filling/charging line	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Aerosol filling/charging line.	Installation	Spray, mist, pump, roll-on and aerosol packages	C01 C20	Medium
CTV-22-0021	Aerosol filling/charging line	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of propellant weight and crimp; verify pressure integrity against predetermined product-specific criteria.	Operational	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0022	Aerosol filling/charging line	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of pressure integrity.	Operational	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-22-0023	Aerosol filling/charging line	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and pressure integrity trends; number of runs justified by risk.	Performance	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0024	Aerosol filling/charging line	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting pressure integrity.	Lifecycle	Spray, mist, pump, roll-on and aerosol packages	C01 C20	Medium
CTV-22-0025	Aerosol leak detection bath	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and leak-test sensitivity and water temp mapped to leak detection.	Design	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0026	Aerosol leak detection bath	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Aerosol leak detection bath.	Installation	Spray, mist, pump, roll-on and aerosol packages	C01 C20	Medium
CTV-22-0027	Aerosol leak detection bath	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of leak-test sensitivity and water temp; verify leak detection against predetermined product-specific criteria.	Operational	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0028	Aerosol leak detection bath	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of leak detection.	Operational	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0029	Aerosol leak detection bath	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and leak detection trends; number of runs justified by risk.	Performance	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0030	Aerosol leak detection bath	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting leak detection.	Lifecycle	Spray, mist, pump, roll-on and aerosol packages	C01 C20	Medium
CTV-22-0031	Pneumatic can crimper	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and crimp diameter and deformation mapped to seal integrity.	Design	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0032	Pneumatic can crimper	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Pneumatic can crimper.	Installation	Spray, mist, pump, roll-on and aerosol packages	C01 C20	Medium
CTV-22-0033	Pneumatic can crimper	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of crimp diameter and deformation; verify seal integrity against predetermined product-specific criteria.	Operational	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0034	Pneumatic can crimper	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of seal integrity.	Operational	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0035	Pneumatic can crimper	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and seal integrity trends; number of runs justified by risk.	Performance	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0036	Pneumatic can crimper	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting seal integrity.	Lifecycle	Spray, mist, pump, roll-on and aerosol packages	C01 C20	Medium
CTV-22-0037	Pump stroke testing bench	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and stroke rate and actuator force mapped to dose per actuation.	Design	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0038	Pump stroke testing bench	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Pump stroke testing bench.	Installation	Spray, mist, pump, roll-on and aerosol packages	C01 C20	Medium
CTV-22-0039	Pump stroke testing bench	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of stroke rate and actuator force; verify dose per actuation against predetermined product-specific criteria.	Operational	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0040	Pump stroke testing bench	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of dose per actuation.	Operational	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0041	Pump stroke testing bench	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and dose per actuation trends; number of runs justified by risk.	Performance	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0042	Pump stroke testing bench	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting dose per actuation.	Lifecycle	Spray, mist, pump, roll-on and aerosol packages	C01 C20	Medium
CTV-22-0043	Spray dose reproducibility	Study design / protocol: Challenge beginning/middle/end pack life	Predefined sampling, method, worst cases, limitations and acceptance rationale for Dispensed mass per actuation.	Planning	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0044	Spray dose reproducibility	Challenge / study execution: Challenge beginning/middle/end pack life	Independent raw test data, deviations, control checks, representative conditions and Dispensed mass per actuation.	Execution	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0045	Spray dose reproducibility	Result assessment / report / review: Challenge beginning/middle/end pack life	Approved conclusions, corrective actions, periodic trend or change-impact review of Dispensed mass per actuation.	Review	Spray, mist, pump, roll-on and aerosol packages	C01 C20	Medium
CTV-22-0046	Aerosol pressure/leak at storage	Study design / protocol: Environmental stress and leak rate testing	Predefined sampling, method, worst cases, limitations and acceptance rationale for Package safety.	Planning	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-22-0047	Aerosol pressure/leak at storage	Challenge / study execution: Environmental stress and leak rate testing	Independent raw test data, deviations, control checks, representative conditions and Package safety.	Execution	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0048	Aerosol pressure/leak at storage	Result assessment / report / review: Environmental stress and leak rate testing	Approved conclusions, corrective actions, periodic trend or change-impact review of Package safety.	Review	Spray, mist, pump, roll-on and aerosol packages	C01 C20	Medium
CTV-22-0049	Aerosol burst/pressure proof	Study design / protocol: Applicable pressure container standards	Predefined sampling, method, worst cases, limitations and acceptance rationale for Can safety.	Planning	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0050	Aerosol burst/pressure proof	Challenge / study execution: Applicable pressure container standards	Independent raw test data, deviations, control checks, representative conditions and Can safety.	Execution	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0051	Aerosol burst/pressure proof	Result assessment / report / review: Applicable pressure container standards	Approved conclusions, corrective actions, periodic trend or change-impact review of Can safety.	Review	Spray, mist, pump, roll-on and aerosol packages	C01 C20	Medium
CTV-22-0052	Spray fan/pattern	Study design / protocol: Visual or imaging method suitability	Predefined sampling, method, worst cases, limitations and acceptance rationale for Consumer coverage.	Planning	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0053	Spray fan/pattern	Challenge / study execution: Visual or imaging method suitability	Independent raw test data, deviations, control checks, representative conditions and Consumer coverage.	Execution	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0054	Spray fan/pattern	Result assessment / report / review: Visual or imaging method suitability	Approved conclusions, corrective actions, periodic trend or change-impact review of Consumer coverage.	Review	Spray, mist, pump, roll-on and aerosol packages	C01 C20	Medium
CTV-22-0055	Roll-on application performance	Study design / protocol: Assess roller rotation and stuck-ball events	Predefined sampling, method, worst cases, limitations and acceptance rationale for Functionality.	Planning	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0056	Roll-on application performance	Challenge / study execution: Assess roller rotation and stuck-ball events	Independent raw test data, deviations, control checks, representative conditions and Functionality.	Execution	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0057	Roll-on application performance	Result assessment / report / review: Assess roller rotation and stuck-ball events	Approved conclusions, corrective actions, periodic trend or change-impact review of Functionality.	Review	Spray, mist, pump, roll-on and aerosol packages	C01 C20	Medium
CTV-22-0058	Pump clogging and priming	Study design / protocol: Challenge thickened, fragranced or particulate liquids	Predefined sampling, method, worst cases, limitations and acceptance rationale for Use reliability.	Planning	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0059	Pump clogging and priming	Challenge / study execution: Challenge thickened, fragranced or particulate liquids	Independent raw test data, deviations, control checks, representative conditions and Use reliability.	Execution	Spray, mist, pump, roll-on and aerosol packages	C01 C20	High
CTV-22-0060	Pump clogging and priming	Result assessment / report / review: Challenge thickened, fragranced or particulate liquids	Approved conclusions, corrective actions, periodic trend or change-impact review of Use reliability.	Review	Spray, mist, pump, roll-on and aerosol packages	C01 C20	Medium

23 PACKAGING, LABEL INSPECTION AND SERIALIZATION

81 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-23-0001	Label applicator	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and alignment and reject challenge mapped to label correctness.	Design	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0002	Label applicator	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Label applicator.	Installation	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0003	Label applicator	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of alignment and reject challenge; verify label correctness against predetermined product-specific criteria.	Operational	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0004	Label applicator	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of label correctness.	Operational	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0005	Label applicator	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and label correctness trends; number of runs justified by risk.	Performance	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0006	Label applicator	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting label correctness.	Lifecycle	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0007	Thermal inkjet batch coder	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and print contrast and expiry control mapped to traceability.	Design	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0008	Thermal inkjet batch coder	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Thermal inkjet batch coder.	Installation	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0009	Thermal inkjet batch coder	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of print contrast and expiry control; verify traceability against predetermined product-specific criteria.	Operational	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0010	Thermal inkjet batch coder	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of traceability.	Operational	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0011	Thermal inkjet batch coder	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and traceability trends; number of runs justified by risk.	Performance	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0012	Thermal inkjet batch coder	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting traceability.	Lifecycle	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0013	Laser coder	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and focal distance and readability mapped to coding integrity.	Design	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0014	Laser coder	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Laser coder.	Installation	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0015	Laser coder	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of focal distance and readability; verify coding integrity against predetermined product-specific criteria.	Operational	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0016	Laser coder	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of coding integrity.	Operational	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-23-0017	Laser coder	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and coding integrity trends; number of runs justified by risk.	Performance	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0018	Laser coder	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting coding integrity.	Lifecycle	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0019	Cartoner	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and carton feed and leaflet detection mapped to pack completeness.	Design	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0020	Cartoner	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Cartoner.	Installation	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0021	Cartoner	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of carton feed and leaflet detection; verify pack completeness against predetermined product-specific criteria.	Operational	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0022	Cartoner	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of pack completeness.	Operational	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0023	Cartoner	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and pack completeness trends; number of runs justified by risk.	Performance	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0024	Cartoner	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting pack completeness.	Lifecycle	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0025	Tamper evident band machine	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and heat settings and missing-band detection mapped to tamper evidence.	Design	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0026	Tamper evident band machine	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Tamper evident band machine.	Installation	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0027	Tamper evident band machine	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of heat settings and missing-band detection; verify tamper evidence against predetermined product-specific criteria.	Operational	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0028	Tamper evident band machine	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of tamper evidence.	Operational	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0029	Tamper evident band machine	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and tamper evidence trends; number of runs justified by risk.	Performance	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0030	Tamper evident band machine	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting tamper evidence.	Lifecycle	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0031	Induction cap sealer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and power, speed and liner compatibility mapped to leak integrity.	Design	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0032	Induction cap sealer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Induction cap sealer.	Installation	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0033	Induction cap sealer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of power, speed and liner compatibility; verify leak integrity against predetermined product-specific criteria.	Operational	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0034	Induction cap sealer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of leak integrity.	Operational	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-23-0035	Induction cap sealer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and leak integrity trends; number of runs justified by risk.	Performance	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0036	Induction cap sealer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting leak integrity.	Lifecycle	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0037	Heat-shrink tunnel	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and temperature uniformity and distortion mapped to pack integrity.	Design	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0038	Heat-shrink tunnel	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Heat-shrink tunnel.	Installation	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0039	Heat-shrink tunnel	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of temperature uniformity and distortion; verify pack integrity against predetermined product-specific criteria.	Operational	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0040	Heat-shrink tunnel	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of pack integrity.	Operational	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0041	Heat-shrink tunnel	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and pack integrity trends; number of runs justified by risk.	Performance	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0042	Heat-shrink tunnel	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting pack integrity.	Lifecycle	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0043	Camera vision label inspection	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and incorrect artwork and missing print mapped to inspection sensitivity.	Design	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0044	Camera vision label inspection	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Camera vision label inspection.	Installation	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0045	Camera vision label inspection	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of incorrect artwork and missing print; verify inspection sensitivity against predetermined product-specific criteria.	Operational	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0046	Camera vision label inspection	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of inspection sensitivity.	Operational	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0047	Camera vision label inspection	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and inspection sensitivity trends; number of runs justified by risk.	Performance	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0048	Camera vision label inspection	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting inspection sensitivity.	Lifecycle	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0049	Barcode verifier	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and print grade and scan accuracy mapped to product identity.	Design	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0050	Barcode verifier	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Barcode verifier.	Installation	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0051	Barcode verifier	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of print grade and scan accuracy; verify product identity against predetermined product-specific criteria.	Operational	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0052	Barcode verifier	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of product identity.	Operational	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-23-0053	Barcode verifier	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and product identity trends; number of runs justified by risk.	Performance	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0054	Barcode verifier	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting product identity.	Lifecycle	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0055	Case packer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and counting and bundle handling mapped to shipped quantity.	Design	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0056	Case packer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Case packer.	Installation	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0057	Case packer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of counting and bundle handling; verify shipped quantity against predetermined product-specific criteria.	Operational	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0058	Case packer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of shipped quantity.	Operational	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0059	Case packer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and shipped quantity trends; number of runs justified by risk.	Performance	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0060	Case packer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting shipped quantity.	Lifecycle	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0061	Artwork master comparison	Study design / protocol: Verify INCI, warnings and mandatory market language	Predefined sampling, method, worst cases, limitations and acceptance rationale for Approved label specification.	Planning	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0062	Artwork master comparison	Challenge / study execution: Verify INCI, warnings and mandatory market language	Independent raw test data, deviations, control checks, representative conditions and Approved label specification.	Execution	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0063	Artwork master comparison	Result assessment / report / review: Verify INCI, warnings and mandatory market language	Approved conclusions, corrective actions, periodic trend or change-impact review of Approved label specification.	Review	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0064	Label reconciliation	Study design / protocol: Assess start/end reels and rejects	Predefined sampling, method, worst cases, limitations and acceptance rationale for No mix-up.	Planning	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0065	Label reconciliation	Challenge / study execution: Assess start/end reels and rejects	Independent raw test data, deviations, control checks, representative conditions and No mix-up.	Execution	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0066	Label reconciliation	Result assessment / report / review: Assess start/end reels and rejects	Approved conclusions, corrective actions, periodic trend or change-impact review of No mix-up.	Review	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0067	Shelf-life/lot coding rules	Study design / protocol: Challenge short print, missing batch and expiry formats	Predefined sampling, method, worst cases, limitations and acceptance rationale for Traceability.	Planning	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0068	Shelf-life/lot coding rules	Challenge / study execution: Challenge short print, missing batch and expiry formats	Independent raw test data, deviations, control checks, representative conditions and Traceability.	Execution	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0069	Shelf-life/lot coding rules	Result assessment / report / review: Challenge short print, missing batch and expiry formats	Approved conclusions, corrective actions, periodic trend or change-impact review of Traceability.	Review	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0070	Tamper evidence validation	Study design / protocol: Show opening indication retained after transport	Predefined sampling, method, worst cases, limitations and acceptance rationale for Package security.	Planning	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-23-0071	Tamper evidence validation	Challenge / study execution: Show opening indication retained after transport	Independent raw test data, deviations, control checks, representative conditions and Package security.	Execution	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0072	Tamper evidence validation	Result assessment / report / review: Show opening indication retained after transport	Approved conclusions, corrective actions, periodic trend or change-impact review of Package security.	Review	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0073	Container closure leak study	Study design / protocol: Select pressure, vacuum, dye or other fit-for-pack methods	Predefined sampling, method, worst cases, limitations and acceptance rationale for Leak prevention.	Planning	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0074	Container closure leak study	Challenge / study execution: Select pressure, vacuum, dye or other fit-for-pack methods	Independent raw test data, deviations, control checks, representative conditions and Leak prevention.	Execution	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0075	Container closure leak study	Result assessment / report / review: Select pressure, vacuum, dye or other fit-for-pack methods	Approved conclusions, corrective actions, periodic trend or change-impact review of Leak prevention.	Review	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0076	Pack compatibility	Study design / protocol: Assess oil, alcohol, fragrance, surfactant effect	Predefined sampling, method, worst cases, limitations and acceptance rationale for No migration/leaching or degradation beyond limits.	Planning	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0077	Pack compatibility	Challenge / study execution: Assess oil, alcohol, fragrance, surfactant effect	Independent raw test data, deviations, control checks, representative conditions and No migration/leaching or degradation beyond limits.	Execution	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0078	Pack compatibility	Result assessment / report / review: Assess oil, alcohol, fragrance, surfactant effect	Approved conclusions, corrective actions, periodic trend or change-impact review of No migration/leaching or degradation beyond limits.	Review	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium
CTV-23-0079	Transport print durability	Study design / protocol: Challenge rubbing, moisture and heat	Predefined sampling, method, worst cases, limitations and acceptance rationale for Legible identification.	Planning	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0080	Transport print durability	Challenge / study execution: Challenge rubbing, moisture and heat	Independent raw test data, deviations, control checks, representative conditions and Legible identification.	Execution	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	High
CTV-23-0081	Transport print durability	Result assessment / report / review: Challenge rubbing, moisture and heat	Approved conclusions, corrective actions, periodic trend or change-impact review of Legible identification.	Review	Primary/secondary packs, label and distribution identifiers	C01 C02 C04 C06	Medium

24 CLEANING AND SANITATION VALIDATION

78 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-24-0001	CIP circulation skid	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and flow, concentration, time and rinse profile mapped to residue removal.	Design	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0002	CIP circulation skid	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for CIP circulation skid.	Installation	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0003	CIP circulation skid	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of flow, concentration, time and rinse profile; verify residue removal against predetermined product-specific criteria.	Operational	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0004	CIP circulation skid	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of residue removal.	Operational	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0005	CIP circulation skid	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and residue removal trends; number of runs justified by risk.	Performance	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0006	CIP circulation skid	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting residue removal.	Lifecycle	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0007	Manual wash sink	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and water temp and cleaning tool control mapped to manual cleaning reproducibility.	Design	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0008	Manual wash sink	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Manual wash sink.	Installation	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0009	Manual wash sink	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of water temp and cleaning tool control; verify manual cleaning reproducibility against predetermined product-specific criteria.	Operational	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0010	Manual wash sink	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of manual cleaning reproducibility.	Operational	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0011	Manual wash sink	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and manual cleaning reproducibility trends; number of runs justified by risk.	Performance	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0012	Manual wash sink	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting manual cleaning reproducibility.	Lifecycle	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0013	Automatic parts washer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and cycle control and load pattern mapped to hard-to-clean surfaces.	Design	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0014	Automatic parts washer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Automatic parts washer.	Installation	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0015	Automatic parts washer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of cycle control and load pattern; verify hard-to-clean surfaces against predetermined product-specific criteria.	Operational	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0016	Automatic parts washer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of hard-to-clean surfaces.	Operational	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0017	Automatic parts washer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and hard-to-clean surfaces trends; number of runs justified by risk.	Performance	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0018	Automatic parts washer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting hard-to-clean surfaces.	Lifecycle	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0019	Foam cleaning unit	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and dilution and dwell mapped to sanitation consistency.	Design	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0020	Foam cleaning unit	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Foam cleaning unit.	Installation	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0021	Foam cleaning unit	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of dilution and dwell; verify sanitation consistency against predetermined product-specific criteria.	Operational	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0022	Foam cleaning unit	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of sanitation consistency.	Operational	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-24-0023	Foam cleaning unit	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and sanitation consistency trends; number of runs justified by risk.	Performance	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0024	Foam cleaning unit	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting sanitation consistency.	Lifecycle	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0025	High pressure washer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and spray pressure and inaccessible surfaces mapped to cleaning completeness.	Design	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0026	High pressure washer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for High pressure washer.	Installation	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0027	High pressure washer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of spray pressure and inaccessible surfaces; verify cleaning completeness against predetermined product-specific criteria.	Operational	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0028	High pressure washer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of cleaning completeness.	Operational	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0029	High pressure washer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and cleaning completeness trends; number of runs justified by risk.	Performance	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0030	High pressure washer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting cleaning completeness.	Lifecycle	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0031	Sanitizer dosing pump	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and dose and contact time mapped to sanitation strength.	Design	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0032	Sanitizer dosing pump	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Sanitizer dosing pump.	Installation	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0033	Sanitizer dosing pump	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of dose and contact time; verify sanitation strength against predetermined product-specific criteria.	Operational	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0034	Sanitizer dosing pump	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of sanitation strength.	Operational	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0035	Sanitizer dosing pump	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and sanitation strength trends; number of runs justified by risk.	Performance	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0036	Sanitizer dosing pump	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting sanitation strength.	Lifecycle	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0037	COP soak tank	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and immersion and exposure mapped to part cleanliness.	Design	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0038	COP soak tank	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for COP soak tank.	Installation	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0039	COP soak tank	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of immersion and exposure; verify part cleanliness against predetermined product-specific criteria.	Operational	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0040	COP soak tank	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of part cleanliness.	Operational	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0041	COP soak tank	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and part cleanliness trends; number of runs justified by risk.	Performance	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0042	COP soak tank	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting part cleanliness.	Lifecycle	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0043	Portable conductivity meter	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and rinse conductivity method suitability mapped to rinsing assessment.	Design	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0044	Portable conductivity meter	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Portable conductivity meter.	Installation	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0045	Portable conductivity meter	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of rinse conductivity method suitability; verify rinsing assessment against predetermined product-specific criteria.	Operational	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0046	Portable conductivity meter	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of rinsing assessment.	Operational	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-24-0047	Portable conductivity meter	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and rinsing assessment trends; number of runs justified by risk.	Performance	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0048	Portable conductivity meter	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting rinsing assessment.	Lifecycle	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0049	Worst-case product family selection	Study design / protocol: Rank pigments, wax, oils, silicone and fragrance	Predefined sampling, method, worst cases, limitations and acceptance rationale for Scientific bracket/carryover study.	Planning	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0050	Worst-case product family selection	Challenge / study execution: Rank pigments, wax, oils, silicone and fragrance	Independent raw test data, deviations, control checks, representative conditions and Scientific bracket/carryover study.	Execution	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0051	Worst-case product family selection	Result assessment / report / review: Rank pigments, wax, oils, silicone and fragrance	Approved conclusions, corrective actions, periodic trend or change-impact review of Scientific bracket/carryover study.	Review	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0052	Detergent residue method	Study design / protocol: Confirm selectivity and analytical detection	Predefined sampling, method, worst cases, limitations and acceptance rationale for Residue assessment.	Planning	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0053	Detergent residue method	Challenge / study execution: Confirm selectivity and analytical detection	Independent raw test data, deviations, control checks, representative conditions and Residue assessment.	Execution	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0054	Detergent residue method	Result assessment / report / review: Confirm selectivity and analytical detection	Approved conclusions, corrective actions, periodic trend or change-impact review of Residue assessment.	Review	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0055	Swab recovery	Study design / protocol: Determine representative surface/material and challenging residues	Predefined sampling, method, worst cases, limitations and acceptance rationale for Recovery factor.	Planning	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0056	Swab recovery	Challenge / study execution: Determine representative surface/material and challenging residues	Independent raw test data, deviations, control checks, representative conditions and Recovery factor.	Execution	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0057	Swab recovery	Result assessment / report / review: Determine representative surface/material and challenging residues	Approved conclusions, corrective actions, periodic trend or change-impact review of Recovery factor.	Review	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0058	Rinse recovery	Study design / protocol: Study dilution and access of rinsing for tanks/hoses	Predefined sampling, method, worst cases, limitations and acceptance rationale for Recovery validation.	Planning	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0059	Rinse recovery	Challenge / study execution: Study dilution and access of rinsing for tanks/hoses	Independent raw test data, deviations, control checks, representative conditions and Recovery validation.	Execution	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0060	Rinse recovery	Result assessment / report / review: Study dilution and access of rinsing for tanks/hoses	Approved conclusions, corrective actions, periodic trend or change-impact review of Recovery validation.	Review	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0061	Dirty hold and clean hold	Study design / protocol: Challenge time since manufacture/cleaning	Predefined sampling, method, worst cases, limitations and acceptance rationale for Cleanability and bioburden.	Planning	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0062	Dirty hold and clean hold	Challenge / study execution: Challenge time since manufacture/cleaning	Independent raw test data, deviations, control checks, representative conditions and Cleanability and bioburden.	Execution	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0063	Dirty hold and clean hold	Result assessment / report / review: Challenge time since manufacture/cleaning	Approved conclusions, corrective actions, periodic trend or change-impact review of Cleanability and bioburden.	Review	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0064	Visual inspection threshold	Study design / protocol: Define illuminated surface inspection method	Predefined sampling, method, worst cases, limitations and acceptance rationale for Visual residues and acceptable conditions.	Planning	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0065	Visual inspection threshold	Challenge / study execution: Define illuminated surface inspection method	Independent raw test data, deviations, control checks, representative conditions and Visual residues and acceptable conditions.	Execution	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0066	Visual inspection threshold	Result assessment / report / review: Define illuminated surface inspection method	Approved conclusions, corrective actions, periodic trend or change-impact review of Visual residues and acceptable conditions.	Review	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0067	Microbiological cleaning verification	Study design / protocol: Establish pathogen/objectionable risk and swab methods	Predefined sampling, method, worst cases, limitations and acceptance rationale for Microbial carryover risk.	Planning	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0068	Microbiological cleaning verification	Challenge / study execution: Establish pathogen/objectionable risk and swab methods	Independent raw test data, deviations, control checks, representative conditions and Microbial carryover risk.	Execution	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0069	Microbiological cleaning verification	Result assessment / report / review: Establish pathogen/objectionable risk and swab methods	Approved conclusions, corrective actions, periodic trend or change-impact review of Microbial carryover risk.	Review	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0070	Sanitizer efficacy	Study design / protocol: Validate sanitizer concentration/contact/surface compatibility	Predefined sampling, method, worst cases, limitations and acceptance rationale for Demonstrated reduction under stated test conditions.	Planning	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-24-0071	Sanitizer efficacy	Challenge / study execution: Validate sanitizer concentration/contact/surface compatibility	Independent raw test data, deviations, control checks, representative conditions and Demonstrated reduction under stated test conditions.	Execution	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0072	Sanitizer efficacy	Result assessment / report / review: Validate sanitizer concentration/contact/surface compatibility	Approved conclusions, corrective actions, periodic trend or change-impact review of Demonstrated reduction under stated test conditions.	Review	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0073	Cleaning train coverage	Study design / protocol: Include valves, nozzles, gaskets, dead legs and transfer hoses	Predefined sampling, method, worst cases, limitations and acceptance rationale for Worst-case location mapping.	Planning	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0074	Cleaning train coverage	Challenge / study execution: Include valves, nozzles, gaskets, dead legs and transfer hoses	Independent raw test data, deviations, control checks, representative conditions and Worst-case location mapping.	Execution	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0075	Cleaning train coverage	Result assessment / report / review: Include valves, nozzles, gaskets, dead legs and transfer hoses	Approved conclusions, corrective actions, periodic trend or change-impact review of Worst-case location mapping.	Review	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium
CTV-24-0076	Detergent compatibility	Study design / protocol: Check corrosion, surface finish, polymer seal degradation	Predefined sampling, method, worst cases, limitations and acceptance rationale for Material integrity.	Planning	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0077	Detergent compatibility	Challenge / study execution: Check corrosion, surface finish, polymer seal degradation	Independent raw test data, deviations, control checks, representative conditions and Material integrity.	Execution	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	High
CTV-24-0078	Detergent compatibility	Result assessment / report / review: Check corrosion, surface finish, polymer seal degradation	Approved conclusions, corrective actions, periodic trend or change-impact review of Material integrity.	Review	Shared nonsterile cosmetic manufacturing trains	C01 C08 C09 C10	Medium

25 MANUFACTURING PROCESS VALIDATION AND SCALE UP

33 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-25-0001	Process mapping and CPP identification	Study design / protocol: Define chemistry and mixing/thermal/hold controls for each formula	Predefined sampling, method, worst cases, limitations and acceptance rationale for CPP/CQA control strategy.	Planning	All cosmetic forms, product families	C01 C20	High
CTV-25-0002	Process mapping and CPP identification	Challenge / study execution: Define chemistry and mixing/thermal/hold controls for each formula	Independent raw test data, deviations, control checks, representative conditions and CPP/CQA control strategy.	Execution	All cosmetic forms, product families	C01 C20	High
CTV-25-0003	Process mapping and CPP identification	Result assessment / report / review: Define chemistry and mixing/thermal/hold controls for each formula	Approved conclusions, corrective actions, periodic trend or change-impact review of CPP/CQA control strategy.	Review	All cosmetic forms, product families	C01 C20	Medium
CTV-25-0004	Process challenge / PPQ strategy	Study design / protocol: Risk-based reproducibility study at commercial scale	Predefined sampling, method, worst cases, limitations and acceptance rationale for Preapproved sampling and batch selection rationale.	Planning	All cosmetic forms, product families	C01 C20	High
CTV-25-0005	Process challenge / PPQ strategy	Challenge / study execution: Risk-based reproducibility study at commercial scale	Independent raw test data, deviations, control checks, representative conditions and Preapproved sampling and batch selection rationale.	Execution	All cosmetic forms, product families	C01 C20	High
CTV-25-0006	Process challenge / PPQ strategy	Result assessment / report / review: Risk-based reproducibility study at commercial scale	Approved conclusions, corrective actions, periodic trend or change-impact review of Preapproved sampling and batch selection rationale.	Review	All cosmetic forms, product families	C01 C20	Medium
CTV-25-0007	Small-scale to commercial equivalence	Study design / protocol: Evaluate equipment geometry and heating/cooling rates	Predefined sampling, method, worst cases, limitations and acceptance rationale for Physical and microbiological comparability.	Planning	All cosmetic forms, product families	C01 C20	High
CTV-25-0008	Small-scale to commercial equivalence	Challenge / study execution: Evaluate equipment geometry and heating/cooling rates	Independent raw test data, deviations, control checks, representative conditions and Physical and microbiological comparability.	Execution	All cosmetic forms, product families	C01 C20	High
CTV-25-0009	Small-scale to commercial equivalence	Result assessment / report / review: Evaluate equipment geometry and heating/cooling rates	Approved conclusions, corrective actions, periodic trend or change-impact review of Physical and microbiological comparability.	Review	All cosmetic forms, product families	C01 C20	Medium
CTV-25-0010	Multi-product equipment family grouping	Study design / protocol: Justify representative worst-case formula and cleaning	Predefined sampling, method, worst cases, limitations and acceptance rationale for Matrix with coverage and exclusions.	Planning	All cosmetic forms, product families	C01 C20	High
CTV-25-0011	Multi-product equipment family grouping	Challenge / study execution: Justify representative worst-case formula and cleaning	Independent raw test data, deviations, control checks, representative conditions and Matrix with coverage and exclusions.	Execution	All cosmetic forms, product families	C01 C20	High
CTV-25-0012	Multi-product equipment family grouping	Result assessment / report / review: Justify representative worst-case formula and cleaning	Approved conclusions, corrective actions, periodic trend or change-impact review of Matrix with coverage and exclusions.	Review	All cosmetic forms, product families	C01 C20	Medium
CTV-25-0013	High/low viscosity formulation envelope	Study design / protocol: Demonstrate fillers and mixers across viscosity bracket	Predefined sampling, method, worst cases, limitations and acceptance rationale for Acceptable product and packaging performance.	Planning	All cosmetic forms, product families	C01 C20	High
CTV-25-0014	High/low viscosity formulation envelope	Challenge / study execution: Demonstrate fillers and mixers across viscosity bracket	Independent raw test data, deviations, control checks, representative conditions and Acceptable product and packaging performance.	Execution	All cosmetic forms, product families	C01 C20	High
CTV-25-0015	High/low viscosity formulation envelope	Result assessment / report / review: Demonstrate fillers and mixers across viscosity bracket	Approved conclusions, corrective actions, periodic trend or change-impact review of Acceptable product and packaging performance.	Review	All cosmetic forms, product families	C01 C20	Medium
CTV-25-0016	Seasonal raw material variability	Study design / protocol: Study botanical and surfactant supply ranges	Predefined sampling, method, worst cases, limitations and acceptance rationale for Robustness controls.	Planning	All cosmetic forms, product families	C01 C20	High
CTV-25-0017	Seasonal raw material variability	Challenge / study execution: Study botanical and surfactant supply ranges	Independent raw test data, deviations, control checks, representative conditions and Robustness controls.	Execution	All cosmetic forms, product families	C01 C20	High
CTV-25-0018	Seasonal raw material variability	Result assessment / report / review: Study botanical and surfactant supply ranges	Approved conclusions, corrective actions, periodic trend or change-impact review of Robustness controls.	Review	All cosmetic forms, product families	C01 C20	Medium
CTV-25-0019	Operator and shift variation	Study design / protocol: Evaluate controls for dispensing, heating and fill	Predefined sampling, method, worst cases, limitations and acceptance rationale for Repeatability under routine operation.	Planning	All cosmetic forms, product families	C01 C20	High
CTV-25-0020	Operator and shift variation	Challenge / study execution: Evaluate controls for dispensing, heating and fill	Independent raw test data, deviations, control checks, representative conditions and Repeatability under routine operation.	Execution	All cosmetic forms, product families	C01 C20	High
CTV-25-0021	Operator and shift variation	Result assessment / report / review: Evaluate controls for dispensing, heating and fill	Approved conclusions, corrective actions, periodic trend or change-impact review of Repeatability under routine operation.	Review	All cosmetic forms, product families	C01 C20	Medium
CTV-25-0022	High-risk preservative changes	Study design / protocol: Validate effects of concentration, pH and excipient change	Predefined sampling, method, worst cases, limitations and acceptance rationale for Challenge test and stability impact.	Planning	All cosmetic forms, product families	C01 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-25-0023	High-risk preservative changes	Challenge / study execution: Validate effects of concentration, pH and excipient change	Independent raw test data, deviations, control checks, representative conditions and Challenge test and stability impact.	Execution	All cosmetic forms, product families	C01 C20	High
CTV-25-0024	High-risk preservative changes	Result assessment / report / review: Validate effects of concentration, pH and excipient change	Approved conclusions, corrective actions, periodic trend or change-impact review of Challenge test and stability impact.	Review	All cosmetic forms, product families	C01 C20	Medium
CTV-25-0025	Scale-up recirculation endpoint	Study design / protocol: Verify mixing uniformity at upper/lower load	Predefined sampling, method, worst cases, limitations and acceptance rationale for Sampling and process endpoint.	Planning	All cosmetic forms, product families	C01 C20	High
CTV-25-0026	Scale-up recirculation endpoint	Challenge / study execution: Verify mixing uniformity at upper/lower load	Independent raw test data, deviations, control checks, representative conditions and Sampling and process endpoint.	Execution	All cosmetic forms, product families	C01 C20	High
CTV-25-0027	Scale-up recirculation endpoint	Result assessment / report / review: Verify mixing uniformity at upper/lower load	Approved conclusions, corrective actions, periodic trend or change-impact review of Sampling and process endpoint.	Review	All cosmetic forms, product families	C01 C20	Medium
CTV-25-0028	Process parameter trending	Study design / protocol: Develop practical control charts and alert rules	Predefined sampling, method, worst cases, limitations and acceptance rationale for Continued evidence of control.	Planning	All cosmetic forms, product families	C01 C20	High
CTV-25-0029	Process parameter trending	Challenge / study execution: Develop practical control charts and alert rules	Independent raw test data, deviations, control checks, representative conditions and Continued evidence of control.	Execution	All cosmetic forms, product families	C01 C20	High
CTV-25-0030	Process parameter trending	Result assessment / report / review: Develop practical control charts and alert rules	Approved conclusions, corrective actions, periodic trend or change-impact review of Continued evidence of control.	Review	All cosmetic forms, product families	C01 C20	Medium
CTV-25-0031	Reprocess and rework strategy	Study design / protocol: Assess impacts on microbial stability, viscosity and traceability	Predefined sampling, method, worst cases, limitations and acceptance rationale for Approved reuse limitations.	Planning	All cosmetic forms, product families	C01 C20	High
CTV-25-0032	Reprocess and rework strategy	Challenge / study execution: Assess impacts on microbial stability, viscosity and traceability	Independent raw test data, deviations, control checks, representative conditions and Approved reuse limitations.	Execution	All cosmetic forms, product families	C01 C20	High
CTV-25-0033	Reprocess and rework strategy	Result assessment / report / review: Assess impacts on microbial stability, viscosity and traceability	Approved conclusions, corrective actions, periodic trend or change-impact review of Approved reuse limitations.	Review	All cosmetic forms, product families	C01 C20	Medium

26 MICROBIOLOGY, PRESERVATIVE EFFICACY AND HYGIENE

84 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-26-0001	Biological safety cabinet where used	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and airflow and filter integrity mapped to micro lab containment.	Design	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0002	Biological safety cabinet where used	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Biological safety cabinet where used.	Installation	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0003	Biological safety cabinet where used	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of airflow and filter integrity; verify micro lab containment against predetermined product-specific criteria.	Operational	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0004	Biological safety cabinet where used	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of micro lab containment.	Operational	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0005	Biological safety cabinet where used	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and micro lab containment trends; number of runs justified by risk.	Performance	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0006	Biological safety cabinet where used	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting micro lab containment.	Lifecycle	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0007	Laminar-flow clean bench where used	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and airflow, HEPA and work practice mapped to aseptic sampling integrity.	Design	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0008	Laminar-flow clean bench where used	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Laminar-flow clean bench where used.	Installation	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0009	Laminar-flow clean bench where used	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of airflow, HEPA and work practice; verify aseptic sampling integrity against predetermined product-specific criteria.	Operational	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0010	Laminar-flow clean bench where used	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of aseptic sampling integrity.	Operational	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0011	Laminar-flow clean bench where used	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and aseptic sampling integrity trends; number of runs justified by risk.	Performance	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0012	Laminar-flow clean bench where used	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting aseptic sampling integrity.	Lifecycle	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0013	Microbiology incubator	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and temperature uniformity and recovery mapped to reliable counts.	Design	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0014	Microbiology incubator	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Microbiology incubator.	Installation	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0015	Microbiology incubator	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of temperature uniformity and recovery; verify reliable counts against predetermined product-specific criteria.	Operational	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0016	Microbiology incubator	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of reliable counts.	Operational	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-26-0017	Microbiology incubator	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and reliable counts trends; number of runs justified by risk.	Performance	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0018	Microbiology incubator	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting reliable counts.	Lifecycle	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0019	Autoclave for lab media/waste	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and load pattern, time/temp and biological challenge mapped to micro lab decontamination.	Design	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0020	Autoclave for lab media/waste	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Autoclave for lab media/waste.	Installation	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0021	Autoclave for lab media/waste	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of load pattern, time/temp and biological challenge; verify micro lab decontamination against predetermined product-specific criteria.	Operational	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0022	Autoclave for lab media/waste	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of micro lab decontamination.	Operational	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0023	Autoclave for lab media/waste	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and micro lab decontamination trends; number of runs justified by risk.	Performance	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0024	Autoclave for lab media/waste	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting micro lab decontamination.	Lifecycle	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0025	Refrigerated culture storage	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and temperature mapping and excursion handling mapped to reference culture fitness.	Design	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0026	Refrigerated culture storage	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Refrigerated culture storage.	Installation	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0027	Refrigerated culture storage	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of temperature mapping and excursion handling; verify reference culture fitness against predetermined product-specific criteria.	Operational	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0028	Refrigerated culture storage	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of reference culture fitness.	Operational	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0029	Refrigerated culture storage	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and reference culture fitness trends; number of runs justified by risk.	Performance	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0030	Refrigerated culture storage	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting reference culture fitness.	Lifecycle	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0031	Colony counter	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and count agreement and false positives mapped to micro result reproducibility.	Design	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0032	Colony counter	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Colony counter.	Installation	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0033	Colony counter	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of count agreement and false positives; verify micro result reproducibility against predetermined product-specific criteria.	Operational	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0034	Colony counter	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of micro result reproducibility.	Operational	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-26-0035	Colony counter	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and micro result reproducibility trends; number of runs justified by risk.	Performance	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0036	Colony counter	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting micro result reproducibility.	Lifecycle	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0037	Membrane filtration manifold	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and recovery and cross sample carryover mapped to micro enumeration accuracy.	Design	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0038	Membrane filtration manifold	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Membrane filtration manifold.	Installation	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0039	Membrane filtration manifold	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of recovery and cross sample carryover; verify micro enumeration accuracy against predetermined product-specific criteria.	Operational	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0040	Membrane filtration manifold	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of micro enumeration accuracy.	Operational	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0041	Membrane filtration manifold	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and micro enumeration accuracy trends; number of runs justified by risk.	Performance	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0042	Membrane filtration manifold	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting micro enumeration accuracy.	Lifecycle	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0043	Microbiology analytical balance	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and mass and range mapped to media preparation.	Design	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0044	Microbiology analytical balance	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Microbiology analytical balance.	Installation	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0045	Microbiology analytical balance	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of mass and range; verify media preparation against predetermined product-specific criteria.	Operational	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0046	Microbiology analytical balance	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of media preparation.	Operational	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0047	Microbiology analytical balance	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and media preparation trends; number of runs justified by risk.	Performance	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0048	Microbiology analytical balance	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting media preparation.	Lifecycle	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0049	Media prep autoclave/sterilizer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and load qualification and sterility mapped to media reliability.	Design	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0050	Media prep autoclave/sterilizer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Media prep autoclave/sterilizer.	Installation	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0051	Media prep autoclave/sterilizer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of load qualification and sterility; verify media reliability against predetermined product-specific criteria.	Operational	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0052	Media prep autoclave/sterilizer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of media reliability.	Operational	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-26-0053	Media prep autoclave/sterilizer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and media reliability trends; number of runs justified by risk.	Performance	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0054	Media prep autoclave/sterilizer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting media reliability.	Lifecycle	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0055	ISO 11930 preservation efficacy	Study design / protocol: Inoculation, organism challenge, count recovery and interpretation	Predefined sampling, method, worst cases, limitations and acceptance rationale for Appropriate antimicrobial protection.	Planning	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0056	ISO 11930 preservation efficacy	Challenge / study execution: Inoculation, organism challenge, count recovery and interpretation	Independent raw test data, deviations, control checks, representative conditions and Appropriate antimicrobial protection.	Execution	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0057	ISO 11930 preservation efficacy	Result assessment / report / review: Inoculation, organism challenge, count recovery and interpretation	Approved conclusions, corrective actions, periodic trend or change-impact review of Appropriate antimicrobial protection.	Review	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0058	Microbiological low-risk justification	Study design / protocol: Determine no/water activity, pH, alcohol and pack risk	Predefined sampling, method, worst cases, limitations and acceptance rationale for ISO 29621 documented exemption rationale.	Planning	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0059	Microbiological low-risk justification	Challenge / study execution: Determine no/water activity, pH, alcohol and pack risk	Independent raw test data, deviations, control checks, representative conditions and ISO 29621 documented exemption rationale.	Execution	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0060	Microbiological low-risk justification	Result assessment / report / review: Determine no/water activity, pH, alcohol and pack risk	Approved conclusions, corrective actions, periodic trend or change-impact review of ISO 29621 documented exemption rationale.	Review	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0061	ISO 17516 finished product limits	Study design / protocol: Define product class and objectionable organism risk	Predefined sampling, method, worst cases, limitations and acceptance rationale for Correct cosmetic micro quality criteria.	Planning	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0062	ISO 17516 finished product limits	Challenge / study execution: Define product class and objectionable organism risk	Independent raw test data, deviations, control checks, representative conditions and Correct cosmetic micro quality criteria.	Execution	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0063	ISO 17516 finished product limits	Result assessment / report / review: Define product class and objectionable organism risk	Approved conclusions, corrective actions, periodic trend or change-impact review of Correct cosmetic micro quality criteria.	Review	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0064	Microbial method suitability	Study design / protocol: Neutralize preservatives, challenge method recovery	Predefined sampling, method, worst cases, limitations and acceptance rationale for No false negatives.	Planning	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0065	Microbial method suitability	Challenge / study execution: Neutralize preservatives, challenge method recovery	Independent raw test data, deviations, control checks, representative conditions and No false negatives.	Execution	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0066	Microbial method suitability	Result assessment / report / review: Neutralize preservatives, challenge method recovery	Approved conclusions, corrective actions, periodic trend or change-impact review of No false negatives.	Review	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0067	Environmental swab programme	Study design / protocol: Select product-contact and wet-hygiene hotspots	Predefined sampling, method, worst cases, limitations and acceptance rationale for Micro trend and action plan.	Planning	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0068	Environmental swab programme	Challenge / study execution: Select product-contact and wet-hygiene hotspots	Independent raw test data, deviations, control checks, representative conditions and Micro trend and action plan.	Execution	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0069	Environmental swab programme	Result assessment / report / review: Select product-contact and wet-hygiene hotspots	Approved conclusions, corrective actions, periodic trend or change-impact review of Micro trend and action plan.	Review	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0070	Water microbial suitability	Study design / protocol: Test method neutralization and sampling hold	Predefined sampling, method, worst cases, limitations and acceptance rationale for Representative results.	Planning	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-26-0071	Water microbial suitability	Challenge / study execution: Test method neutralization and sampling hold	Independent raw test data, deviations, control checks, representative conditions and Representative results.	Execution	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0072	Water microbial suitability	Result assessment / report / review: Test method neutralization and sampling hold	Approved conclusions, corrective actions, periodic trend or change-impact review of Representative results.	Review	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0073	Micro lab culture traceability	Study design / protocol: Confirm strain identity, passage and storage	Predefined sampling, method, worst cases, limitations and acceptance rationale for Control culture integrity.	Planning	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0074	Micro lab culture traceability	Challenge / study execution: Confirm strain identity, passage and storage	Independent raw test data, deviations, control checks, representative conditions and Control culture integrity.	Execution	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0075	Micro lab culture traceability	Result assessment / report / review: Confirm strain identity, passage and storage	Approved conclusions, corrective actions, periodic trend or change-impact review of Control culture integrity.	Review	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0076	Preservative assay / depletion	Study design / protocol: Measure in-package preservative and binding effect	Predefined sampling, method, worst cases, limitations and acceptance rationale for Stable preservative amount.	Planning	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0077	Preservative assay / depletion	Challenge / study execution: Measure in-package preservative and binding effect	Independent raw test data, deviations, control checks, representative conditions and Stable preservative amount.	Execution	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0078	Preservative assay / depletion	Result assessment / report / review: Measure in-package preservative and binding effect	Approved conclusions, corrective actions, periodic trend or change-impact review of Stable preservative amount.	Review	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0079	Packaging in-use contamination	Study design / protocol: Simulate jar finger contact and pump dispensing if relevant	Predefined sampling, method, worst cases, limitations and acceptance rationale for In-use protection evidence.	Planning	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0080	Packaging in-use contamination	Challenge / study execution: Simulate jar finger contact and pump dispensing if relevant	Independent raw test data, deviations, control checks, representative conditions and In-use protection evidence.	Execution	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0081	Packaging in-use contamination	Result assessment / report / review: Simulate jar finger contact and pump dispensing if relevant	Approved conclusions, corrective actions, periodic trend or change-impact review of In-use protection evidence.	Review	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium
CTV-26-0082	Microbial investigation method	Study design / protocol: Define isolate identification and objectionable organism assessment	Predefined sampling, method, worst cases, limitations and acceptance rationale for Appropriate disposition and CAPA.	Planning	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0083	Microbial investigation method	Challenge / study execution: Define isolate identification and objectionable organism assessment	Independent raw test data, deviations, control checks, representative conditions and Appropriate disposition and CAPA.	Execution	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	High
CTV-26-0084	Microbial investigation method	Result assessment / report / review: Define isolate identification and objectionable organism assessment	Approved conclusions, corrective actions, periodic trend or change-impact review of Appropriate disposition and CAPA.	Review	Water-containing, eye, oral, child and other at-risk cosmetics	C01 C08 C09 C10 C11	Medium

27 QC PHYSICOCHEMICAL TEST METHOD VALIDATION

51 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-27-0001	pH measurement method verification	Study design / protocol: Check temperature, dilution, electrode and sample matrix	Predefined sampling, method, worst cases, limitations and acceptance rationale for Accuracy/reproducibility for product.	Planning	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0002	pH measurement method verification	Challenge / study execution: Check temperature, dilution, electrode and sample matrix	Independent raw test data, deviations, control checks, representative conditions and Accuracy/reproducibility for product.	Execution	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0003	pH measurement method verification	Result assessment / report / review: Check temperature, dilution, electrode and sample matrix	Approved conclusions, corrective actions, periodic trend or change-impact review of Accuracy/reproducibility for product.	Review	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	Medium
CTV-27-0004	Viscosity rheology method	Study design / protocol: Define spindle, shear rate, equilibration and temperature	Predefined sampling, method, worst cases, limitations and acceptance rationale for Reproducible rheology method.	Planning	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0005	Viscosity rheology method	Challenge / study execution: Define spindle, shear rate, equilibration and temperature	Independent raw test data, deviations, control checks, representative conditions and Reproducible rheology method.	Execution	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0006	Viscosity rheology method	Result assessment / report / review: Define spindle, shear rate, equilibration and temperature	Approved conclusions, corrective actions, periodic trend or change-impact review of Reproducible rheology method.	Review	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	Medium
CTV-27-0007	Density/specific gravity method	Study design / protocol: Control temperature and entrained air	Predefined sampling, method, worst cases, limitations and acceptance rationale for Reliable net content conversion.	Planning	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0008	Density/specific gravity method	Challenge / study execution: Control temperature and entrained air	Independent raw test data, deviations, control checks, representative conditions and Reliable net content conversion.	Execution	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0009	Density/specific gravity method	Result assessment / report / review: Control temperature and entrained air	Approved conclusions, corrective actions, periodic trend or change-impact review of Reliable net content conversion.	Review	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	Medium
CTV-27-0010	Peroxide value assay	Study design / protocol: Validate for oil/anhydrous product matrix	Predefined sampling, method, worst cases, limitations and acceptance rationale for Oxidation indicator.	Planning	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0011	Peroxide value assay	Challenge / study execution: Validate for oil/anhydrous product matrix	Independent raw test data, deviations, control checks, representative conditions and Oxidation indicator.	Execution	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0012	Peroxide value assay	Result assessment / report / review: Validate for oil/anhydrous product matrix	Approved conclusions, corrective actions, periodic trend or change-impact review of Oxidation indicator.	Review	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	Medium
CTV-27-0013	Preservative concentration HPLC	Study design / protocol: Selectivity for emulsions and fragrances	Predefined sampling, method, worst cases, limitations and acceptance rationale for Specificity, precision, recovery.	Planning	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0014	Preservative concentration HPLC	Challenge / study execution: Selectivity for emulsions and fragrances	Independent raw test data, deviations, control checks, representative conditions and Specificity, precision, recovery.	Execution	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0015	Preservative concentration HPLC	Result assessment / report / review: Selectivity for emulsions and fragrances	Approved conclusions, corrective actions, periodic trend or change-impact review of Specificity, precision, recovery.	Review	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	Medium
CTV-27-0016	Fragrance allergen GC	Study design / protocol: Appropriate impurity/allergen assay and preparation	Predefined sampling, method, worst cases, limitations and acceptance rationale for Identity and quantitation.	Planning	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0017	Fragrance allergen GC	Challenge / study execution: Appropriate impurity/allergen assay and preparation	Independent raw test data, deviations, control checks, representative conditions and Identity and quantitation.	Execution	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0018	Fragrance allergen GC	Result assessment / report / review: Appropriate impurity/allergen assay and preparation	Approved conclusions, corrective actions, periodic trend or change-impact review of Identity and quantitation.	Review	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	Medium
CTV-27-0019	Residual solvent GC method	Study design / protocol: Assess nail lacquer/aerosol/solvent matrices	Predefined sampling, method, worst cases, limitations and acceptance rationale for Selectivity and reporting limits.	Planning	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0020	Residual solvent GC method	Challenge / study execution: Assess nail lacquer/aerosol/solvent matrices	Independent raw test data, deviations, control checks, representative conditions and Selectivity and reporting limits.	Execution	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0021	Residual solvent GC method	Result assessment / report / review: Assess nail lacquer/aerosol/solvent matrices	Approved conclusions, corrective actions, periodic trend or change-impact review of Selectivity and reporting limits.	Review	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	Medium
CTV-27-0022	Heavy metals ICP-MS	Study design / protocol: Define digestion and recovery for colours/botanicals	Predefined sampling, method, worst cases, limitations and acceptance rationale for Matrix-appropriate metal assay.	Planning	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-27-0023	Heavy metals ICP-MS	Challenge / study execution: Define digestion and recovery for colours/botanicals	Independent raw test data, deviations, control checks, representative conditions and Matrix-appropriate metal assay.	Execution	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0024	Heavy metals ICP-MS	Result assessment / report / review: Define digestion and recovery for colours/botanicals	Approved conclusions, corrective actions, periodic trend or change-impact review of Matrix-appropriate metal assay.	Review	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	Medium
CTV-27-0025	Colour shade by spectrophotometer	Study design / protocol: Define ΔE formula and standard reference	Predefined sampling, method, worst cases, limitations and acceptance rationale for Repeatable shade decisions.	Planning	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0026	Colour shade by spectrophotometer	Challenge / study execution: Define ΔE formula and standard reference	Independent raw test data, deviations, control checks, representative conditions and Repeatable shade decisions.	Execution	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0027	Colour shade by spectrophotometer	Result assessment / report / review: Define ΔE formula and standard reference	Approved conclusions, corrective actions, periodic trend or change-impact review of Repeatable shade decisions.	Review	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	Medium
CTV-27-0028	Particle size test	Study design / protocol: Sieve/laser microscopy for powder product	Predefined sampling, method, worst cases, limitations and acceptance rationale for Particle size accuracy.	Planning	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0029	Particle size test	Challenge / study execution: Sieve/laser microscopy for powder product	Independent raw test data, deviations, control checks, representative conditions and Particle size accuracy.	Execution	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0030	Particle size test	Result assessment / report / review: Sieve/laser microscopy for powder product	Approved conclusions, corrective actions, periodic trend or change-impact review of Particle size accuracy.	Review	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	Medium
CTV-27-0031	Microbial enumeration method suitability	Study design / protocol: Neutralization and recovery of challenge organisms	Predefined sampling, method, worst cases, limitations and acceptance rationale for No preservative interference.	Planning	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0032	Microbial enumeration method suitability	Challenge / study execution: Neutralization and recovery of challenge organisms	Independent raw test data, deviations, control checks, representative conditions and No preservative interference.	Execution	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0033	Microbial enumeration method suitability	Result assessment / report / review: Neutralization and recovery of challenge organisms	Approved conclusions, corrective actions, periodic trend or change-impact review of No preservative interference.	Review	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	Medium
CTV-27-0034	Emulsion droplet size method	Study design / protocol: Define microscopy, laser or image analysis	Predefined sampling, method, worst cases, limitations and acceptance rationale for Reliable droplet distribution.	Planning	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0035	Emulsion droplet size method	Challenge / study execution: Define microscopy, laser or image analysis	Independent raw test data, deviations, control checks, representative conditions and Reliable droplet distribution.	Execution	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0036	Emulsion droplet size method	Result assessment / report / review: Define microscopy, laser or image analysis	Approved conclusions, corrective actions, periodic trend or change-impact review of Reliable droplet distribution.	Review	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	Medium
CTV-27-0037	SPF test method suitability if classified cosmetic	Study design / protocol: Check legal classification before study design	Predefined sampling, method, worst cases, limitations and acceptance rationale for Applicable market-specific SPF evidence.	Planning	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0038	SPF test method suitability if classified cosmetic	Challenge / study execution: Check legal classification before study design	Independent raw test data, deviations, control checks, representative conditions and Applicable market-specific SPF evidence.	Execution	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0039	SPF test method suitability if classified cosmetic	Result assessment / report / review: Check legal classification before study design	Approved conclusions, corrective actions, periodic trend or change-impact review of Applicable market-specific SPF evidence.	Review	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	Medium
CTV-27-0040	Stability-indicating method	Study design / protocol: Confirm product/ingredient decomposition discrimination	Predefined sampling, method, worst cases, limitations and acceptance rationale for Reliable shelf-life indicators.	Planning	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0041	Stability-indicating method	Challenge / study execution: Confirm product/ingredient decomposition discrimination	Independent raw test data, deviations, control checks, representative conditions and Reliable shelf-life indicators.	Execution	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0042	Stability-indicating method	Result assessment / report / review: Confirm product/ingredient decomposition discrimination	Approved conclusions, corrective actions, periodic trend or change-impact review of Reliable shelf-life indicators.	Review	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	Medium
CTV-27-0043	Sampling plan qualification	Study design / protocol: Prove representative in-process and finished samples	Predefined sampling, method, worst cases, limitations and acceptance rationale for Sampling process precision.	Planning	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0044	Sampling plan qualification	Challenge / study execution: Prove representative in-process and finished samples	Independent raw test data, deviations, control checks, representative conditions and Sampling process precision.	Execution	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0045	Sampling plan qualification	Result assessment / report / review: Prove representative in-process and finished samples	Approved conclusions, corrective actions, periodic trend or change-impact review of Sampling process precision.	Review	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	Medium
CTV-27-0046	Lab proficiency/comparability	Study design / protocol: Cross-person/site method comparison	Predefined sampling, method, worst cases, limitations and acceptance rationale for Laboratory result reproducibility.	Planning	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-27-0047	Lab proficiency/comparability	Challenge / study execution: Cross-person/site method comparison	Independent raw test data, deviations, control checks, representative conditions and Laboratory result reproducibility.	Execution	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0048	Lab proficiency/comparability	Result assessment / report / review: Cross-person/site method comparison	Approved conclusions, corrective actions, periodic trend or change-impact review of Laboratory result reproducibility.	Review	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	Medium
CTV-27-0049	Method transfer	Study design / protocol: Assess transferring from R&D/external lab to QC	Predefined sampling, method, worst cases, limitations and acceptance rationale for Bias/precision acceptance.	Planning	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0050	Method transfer	Challenge / study execution: Assess transferring from R&D/external lab to QC	Independent raw test data, deviations, control checks, representative conditions and Bias/precision acceptance.	Execution	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	High
CTV-27-0051	Method transfer	Result assessment / report / review: Assess transferring from R&D/external lab to QC	Approved conclusions, corrective actions, periodic trend or change-impact review of Bias/precision acceptance.	Review	Testing raw materials, bulk and finished cosmetics	C01 C02 C04 C18 C20	Medium

28 QC LABORATORY INSTRUMENTS AND CALIBRATION

126 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-28-0001	pH meter	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and electrode slope, offset and temperature compensation mapped to pH test validity.	Design	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0002	pH meter	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for pH meter.	Installation	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0003	pH meter	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of electrode slope, offset and temperature compensation; verify pH test validity against predetermined product-specific criteria.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0004	pH meter	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of pH test validity.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0005	pH meter	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and pH test validity trends; number of runs justified by risk.	Performance	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0006	pH meter	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting pH test validity.	Lifecycle	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0007	Brookfield viscometer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and speed verification and temperature control mapped to viscosity results.	Design	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0008	Brookfield viscometer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Brookfield viscometer.	Installation	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0009	Brookfield viscometer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of speed verification and temperature control; verify viscosity results against predetermined product-specific criteria.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0010	Brookfield viscometer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of viscosity results.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0011	Brookfield viscometer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and viscosity results trends; number of runs justified by risk.	Performance	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0012	Brookfield viscometer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting viscosity results.	Lifecycle	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0013	Rheometer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and shear rate/torque and gap mapped to rheological consistency.	Design	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0014	Rheometer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Rheometer.	Installation	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0015	Rheometer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of shear rate/torque and gap; verify rheological consistency against predetermined product-specific criteria.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0016	Rheometer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of rheological consistency.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0017	Rheometer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and rheological consistency trends; number of runs justified by risk.	Performance	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0018	Rheometer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting rheological consistency.	Lifecycle	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0019	UV-visible spectrophotometer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and wavelength and photometric checks mapped to concentration accuracy.	Design	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0020	UV-visible spectrophotometer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for UV-visible spectrophotometer.	Installation	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0021	UV-visible spectrophotometer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of wavelength and photometric checks; verify concentration accuracy against predetermined product-specific criteria.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0022	UV-visible spectrophotometer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of concentration accuracy.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-28-0023	UV-visible spectrophotometer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and concentration accuracy trends; number of runs justified by risk.	Performance	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0024	UV-visible spectrophotometer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting concentration accuracy.	Lifecycle	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0025	HPLC system	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and flow, gradient, detector and autosampler mapped to assay reliability.	Design	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0026	HPLC system	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for HPLC system.	Installation	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0027	HPLC system	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of flow, gradient, detector and autosampler; verify assay reliability against predetermined product-specific criteria.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0028	HPLC system	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of assay reliability.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0029	HPLC system	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and assay reliability trends; number of runs justified by risk.	Performance	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0030	HPLC system	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting assay reliability.	Lifecycle	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0031	GC / GC-MS	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and inlet, oven, carrier and injection variability mapped to volatile analysis.	Design	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0032	GC / GC-MS	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for GC / GC-MS.	Installation	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0033	GC / GC-MS	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of inlet, oven, carrier and injection variability; verify volatile analysis against predetermined product-specific criteria.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0034	GC / GC-MS	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of volatile analysis.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0035	GC / GC-MS	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and volatile analysis trends; number of runs justified by risk.	Performance	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0036	GC / GC-MS	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting volatile analysis.	Lifecycle	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0037	ICP-MS / AAS	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and calibration, matrix and detection limits mapped to trace element results.	Design	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0038	ICP-MS / AAS	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for ICP-MS / AAS.	Installation	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0039	ICP-MS / AAS	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of calibration, matrix and detection limits; verify trace element results against predetermined product-specific criteria.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0040	ICP-MS / AAS	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of trace element results.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0041	ICP-MS / AAS	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and trace element results trends; number of runs justified by risk.	Performance	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0042	ICP-MS / AAS	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting trace element results.	Lifecycle	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0043	FTIR-ATR	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and wavelength/wavenumber and spectral similarity mapped to identity testing.	Design	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0044	FTIR-ATR	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for FTIR-ATR.	Installation	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0045	FTIR-ATR	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of wavelength/wavenumber and spectral similarity; verify identity testing against predetermined product-specific criteria.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0046	FTIR-ATR	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of identity testing.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-28-0047	FTIR-ATR	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and identity testing trends; number of runs justified by risk.	Performance	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0048	FTIR-ATR	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting identity testing.	Lifecycle	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0049	Karl Fischer moisture system	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and titrant factor and drift mapped to water determination.	Design	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0050	Karl Fischer moisture system	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Karl Fischer moisture system.	Installation	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0051	Karl Fischer moisture system	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of titrant factor and drift; verify water determination against predetermined product-specific criteria.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0052	Karl Fischer moisture system	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of water determination.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0053	Karl Fischer moisture system	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and water determination trends; number of runs justified by risk.	Performance	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0054	Karl Fischer moisture system	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting water determination.	Lifecycle	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0055	Balances and microbalances	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and calibration, eccentricity and linearity mapped to accurate weighment.	Design	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0056	Balances and microbalances	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Balances and microbalances.	Installation	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0057	Balances and microbalances	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of calibration, eccentricity and linearity; verify accurate weighment against predetermined product-specific criteria.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0058	Balances and microbalances	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of accurate weighment.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0059	Balances and microbalances	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and accurate weighment trends; number of runs justified by risk.	Performance	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0060	Balances and microbalances	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting accurate weighment.	Lifecycle	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0061	Analytical water bath	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and temperature stability mapped to reproducible sample preparation.	Design	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0062	Analytical water bath	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Analytical water bath.	Installation	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0063	Analytical water bath	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of temperature stability; verify reproducible sample preparation against predetermined product-specific criteria.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0064	Analytical water bath	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of reproducible sample preparation.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0065	Analytical water bath	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and reproducible sample preparation trends; number of runs justified by risk.	Performance	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0066	Analytical water bath	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting reproducible sample preparation.	Lifecycle	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0067	Melting point apparatus	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and temperature ramp mapped to wax melting tests.	Design	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0068	Melting point apparatus	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Melting point apparatus.	Installation	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0069	Melting point apparatus	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of temperature ramp; verify wax melting tests against predetermined product-specific criteria.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0070	Melting point apparatus	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of wax melting tests.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-28-0071	Melting point apparatus	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and wax melting tests trends; number of runs justified by risk.	Performance	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0072	Melting point apparatus	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting wax melting tests.	Lifecycle	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0073	Refractometer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and RI standard and sample temperature mapped to concentration/purity.	Design	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0074	Refractometer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Refractometer.	Installation	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0075	Refractometer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of RI standard and sample temperature; verify concentration/purity against predetermined product-specific criteria.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0076	Refractometer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of concentration/purity.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0077	Refractometer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and concentration/purity trends; number of runs justified by risk.	Performance	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0078	Refractometer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting concentration/purity.	Lifecycle	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0079	Digital densitometer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and density reference across range mapped to reliable density.	Design	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0080	Digital densitometer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Digital densitometer.	Installation	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0081	Digital densitometer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of density reference across range; verify reliable density against predetermined product-specific criteria.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0082	Digital densitometer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of reliable density.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0083	Digital densitometer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and reliable density trends; number of runs justified by risk.	Performance	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0084	Digital densitometer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting reliable density.	Lifecycle	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0085	Colour spectrophotometer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and white/black calibration and repeatability mapped to shade acceptance.	Design	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0086	Colour spectrophotometer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Colour spectrophotometer.	Installation	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0087	Colour spectrophotometer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of white/black calibration and repeatability; verify shade acceptance against predetermined product-specific criteria.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0088	Colour spectrophotometer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of shade acceptance.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0089	Colour spectrophotometer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and shade acceptance trends; number of runs justified by risk.	Performance	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0090	Colour spectrophotometer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting shade acceptance.	Lifecycle	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0091	Microscope/image analyser	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and magnification scale and sample handling mapped to particle/droplet size.	Design	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0092	Microscope/image analyser	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Microscope/image analyser.	Installation	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0093	Microscope/image analyser	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of magnification scale and sample handling; verify particle/droplet size against predetermined product-specific criteria.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0094	Microscope/image analyser	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of particle/droplet size.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-28-0095	Microscope/image analyser	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and particle/droplet size trends; number of runs justified by risk.	Performance	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0096	Microscope/image analyser	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting particle/droplet size.	Lifecycle	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0097	Environmental chamber	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and temperature/RH mapping and alarm mapped to stability exposure.	Design	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0098	Environmental chamber	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Environmental chamber.	Installation	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0099	Environmental chamber	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of temperature/RH mapping and alarm; verify stability exposure against predetermined product-specific criteria.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0100	Environmental chamber	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of stability exposure.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0101	Environmental chamber	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and stability exposure trends; number of runs justified by risk.	Performance	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0102	Environmental chamber	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting stability exposure.	Lifecycle	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0103	Stability refrigerator	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and setpoint, recovery and map mapped to sample storage integrity.	Design	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0104	Stability refrigerator	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Stability refrigerator.	Installation	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0105	Stability refrigerator	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of setpoint, recovery and map; verify sample storage integrity against predetermined product-specific criteria.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0106	Stability refrigerator	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of sample storage integrity.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0107	Stability refrigerator	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and sample storage integrity trends; number of runs justified by risk.	Performance	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0108	Stability refrigerator	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting sample storage integrity.	Lifecycle	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0109	Tensile/compression tester	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and load cell and crosshead speed mapped to stick/bar strength.	Design	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0110	Tensile/compression tester	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Tensile/compression tester.	Installation	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0111	Tensile/compression tester	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of load cell and crosshead speed; verify stick/bar strength against predetermined product-specific criteria.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0112	Tensile/compression tester	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of stick/bar strength.	Operational	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0113	Tensile/compression tester	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and stick/bar strength trends; number of runs justified by risk.	Performance	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0114	Tensile/compression tester	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting stick/bar strength.	Lifecycle	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0115	Calibration interval logic	Study design / protocol: Set risk-based interval for critical QC assets	Predefined sampling, method, worst cases, limitations and acceptance rationale for Calibration history and out-of-tolerance impact.	Planning	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0116	Calibration interval logic	Challenge / study execution: Set risk-based interval for critical QC assets	Independent raw test data, deviations, control checks, representative conditions and Calibration history and out-of-tolerance impact.	Execution	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0117	Calibration interval logic	Result assessment / report / review: Set risk-based interval for critical QC assets	Approved conclusions, corrective actions, periodic trend or change-impact review of Calibration history and out-of-tolerance impact.	Review	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0118	Computerized chromatographic data	Study design / protocol: Audit trail, integration, access and method version	Predefined sampling, method, worst cases, limitations and acceptance rationale for Data integrity.	Planning	Physicochemical and microbiology labs	C01 C18 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-28-0119	Computerized chromatographic data	Challenge / study execution: Audit trail, integration, access and method version	Independent raw test data, deviations, control checks, representative conditions and Data integrity.	Execution	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0120	Computerized chromatographic data	Result assessment / report / review: Audit trail, integration, access and method version	Approved conclusions, corrective actions, periodic trend or change-impact review of Data integrity.	Review	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0121	Reference standards and working standards	Study design / protocol: Qualification and expiry/retest criteria	Predefined sampling, method, worst cases, limitations and acceptance rationale for Assay reliability.	Planning	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0122	Reference standards and working standards	Challenge / study execution: Qualification and expiry/retest criteria	Independent raw test data, deviations, control checks, representative conditions and Assay reliability.	Execution	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0123	Reference standards and working standards	Result assessment / report / review: Qualification and expiry/retest criteria	Approved conclusions, corrective actions, periodic trend or change-impact review of Assay reliability.	Review	Physicochemical and microbiology labs	C01 C18 C20	Medium
CTV-28-0124	System suitability	Study design / protocol: Predefine SST for chromatographic or spectral method	Predefined sampling, method, worst cases, limitations and acceptance rationale for Qualified runs and failed SST handling.	Planning	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0125	System suitability	Challenge / study execution: Predefine SST for chromatographic or spectral method	Independent raw test data, deviations, control checks, representative conditions and Qualified runs and failed SST handling.	Execution	Physicochemical and microbiology labs	C01 C18 C20	High
CTV-28-0126	System suitability	Result assessment / report / review: Predefine SST for chromatographic or spectral method	Approved conclusions, corrective actions, periodic trend or change-impact review of Qualified runs and failed SST handling.	Review	Physicochemical and microbiology labs	C01 C18 C20	Medium

29 ANALYTICAL DEVELOPMENT, R&D AND FORMULATION TRANSFER

63 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-29-0001	R&D benchtop high shear mixer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and speed and power mapped to formulation replication.	Design	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0002	R&D benchtop high shear mixer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for R&D benchtop high shear mixer.	Installation	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	Medium
CTV-29-0003	R&D benchtop high shear mixer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of speed and power; verify formulation replication against predetermined product-specific criteria.	Operational	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0004	R&D benchtop high shear mixer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of formulation replication.	Operational	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0005	R&D benchtop high shear mixer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and formulation replication trends; number of runs justified by risk.	Performance	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0006	R&D benchtop high shear mixer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting formulation replication.	Lifecycle	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	Medium
CTV-29-0007	Pilot emulsifier	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and scale and vacuum mapped to pilot similarity.	Design	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0008	Pilot emulsifier	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Pilot emulsifier.	Installation	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	Medium
CTV-29-0009	Pilot emulsifier	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of scale and vacuum; verify pilot similarity against predetermined product-specific criteria.	Operational	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0010	Pilot emulsifier	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of pilot similarity.	Operational	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0011	Pilot emulsifier	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and pilot similarity trends; number of runs justified by risk.	Performance	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0012	Pilot emulsifier	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting pilot similarity.	Lifecycle	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	Medium
CTV-29-0013	Pilot liquid mixer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and impeller and temperature mapped to pilot process equivalence.	Design	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0014	Pilot liquid mixer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Pilot liquid mixer.	Installation	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	Medium
CTV-29-0015	Pilot liquid mixer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of impeller and temperature; verify pilot process equivalence against predetermined product-specific criteria.	Operational	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0016	Pilot liquid mixer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of pilot process equivalence.	Operational	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0017	Pilot liquid mixer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and pilot process equivalence trends; number of runs justified by risk.	Performance	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0018	Pilot liquid mixer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting pilot process equivalence.	Lifecycle	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	Medium
CTV-29-0019	Climate / light stability cabinets	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and UV/visible exposure and thermal gradients mapped to stress testing.	Design	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0020	Climate / light stability cabinets	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Climate / light stability cabinets.	Installation	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	Medium
CTV-29-0021	Climate / light stability cabinets	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of UV/visible exposure and thermal gradients; verify stress testing against predetermined product-specific criteria.	Operational	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0022	Climate / light stability cabinets	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of stress testing.	Operational	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-29-0023	Climate / light stability cabinets	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and stress testing trends; number of runs justified by risk.	Performance	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0024	Climate / light stability cabinets	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting stress testing.	Lifecycle	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	Medium
CTV-29-0025	Pilot hot-pour system	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and cool profile and mould mapped to lip balm scale-up.	Design	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0026	Pilot hot-pour system	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Pilot hot-pour system.	Installation	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	Medium
CTV-29-0027	Pilot hot-pour system	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of cool profile and mould; verify lip balm scale-up against predetermined product-specific criteria.	Operational	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0028	Pilot hot-pour system	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of lip balm scale-up.	Operational	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0029	Pilot hot-pour system	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and lip balm scale-up trends; number of runs justified by risk.	Performance	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0030	Pilot hot-pour system	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting lip balm scale-up.	Lifecycle	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	Medium
CTV-29-0031	Pilot filler	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and fill profile and closure behaviour mapped to pack proof of concept.	Design	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0032	Pilot filler	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Pilot filler.	Installation	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	Medium
CTV-29-0033	Pilot filler	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of fill profile and closure behaviour; verify pack proof of concept against predetermined product-specific criteria.	Operational	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0034	Pilot filler	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of pack proof of concept.	Operational	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0035	Pilot filler	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and pack proof of concept trends; number of runs justified by risk.	Performance	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0036	Pilot filler	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting pack proof of concept.	Lifecycle	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	Medium
CTV-29-0037	Technology transfer dossier	Study design / protocol: Compile recipe sequence, process design and known failure modes	Predefined sampling, method, worst cases, limitations and acceptance rationale for Commercial formula/CPP transfer.	Planning	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0038	Technology transfer dossier	Challenge / study execution: Compile recipe sequence, process design and known failure modes	Independent raw test data, deviations, control checks, representative conditions and Commercial formula/CPP transfer.	Execution	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0039	Technology transfer dossier	Result assessment / report / review: Compile recipe sequence, process design and known failure modes	Approved conclusions, corrective actions, periodic trend or change-impact review of Commercial formula/CPP transfer.	Review	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	Medium
CTV-29-0040	Ingredient alternatives qualification	Study design / protocol: Compare sourcing impacts and sensitive interactions	Predefined sampling, method, worst cases, limitations and acceptance rationale for Formula equivalence.	Planning	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0041	Ingredient alternatives qualification	Challenge / study execution: Compare sourcing impacts and sensitive interactions	Independent raw test data, deviations, control checks, representative conditions and Formula equivalence.	Execution	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0042	Ingredient alternatives qualification	Result assessment / report / review: Compare sourcing impacts and sensitive interactions	Approved conclusions, corrective actions, periodic trend or change-impact review of Formula equivalence.	Review	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	Medium
CTV-29-0043	Preservative system optimization	Study design / protocol: Study interactions with surfactants, polymer, package	Predefined sampling, method, worst cases, limitations and acceptance rationale for PET evidence.	Planning	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0044	Preservative system optimization	Challenge / study execution: Study interactions with surfactants, polymer, package	Independent raw test data, deviations, control checks, representative conditions and PET evidence.	Execution	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0045	Preservative system optimization	Result assessment / report / review: Study interactions with surfactants, polymer, package	Approved conclusions, corrective actions, periodic trend or change-impact review of PET evidence.	Review	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	Medium
CTV-29-0046	Formulation factorial DOE	Study design / protocol: Identify interactions pH, viscosity, preservative and heat	Predefined sampling, method, worst cases, limitations and acceptance rationale for Design space or justified control range.	Planning	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-29-0047	Formulation factorial DOE	Challenge / study execution: Identify interactions pH, viscosity, preservative and heat	Independent raw test data, deviations, control checks, representative conditions and Design space or justified control range.	Execution	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0048	Formulation factorial DOE	Result assessment / report / review: Identify interactions pH, viscosity, preservative and heat	Approved conclusions, corrective actions, periodic trend or change-impact review of Design space or justified control range.	Review	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	Medium
CTV-29-0049	Bench to plant mixing similarity	Study design / protocol: Compare tip speed/power/volume/thermal history	Predefined sampling, method, worst cases, limitations and acceptance rationale for Product CQA equivalence.	Planning	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0050	Bench to plant mixing similarity	Challenge / study execution: Compare tip speed/power/volume/thermal history	Independent raw test data, deviations, control checks, representative conditions and Product CQA equivalence.	Execution	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0051	Bench to plant mixing similarity	Result assessment / report / review: Compare tip speed/power/volume/thermal history	Approved conclusions, corrective actions, periodic trend or change-impact review of Product CQA equivalence.	Review	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	Medium
CTV-29-0052	Prototypes safety dossier	Study design / protocol: Record toxicity/allergen and sensitization rationale	Predefined sampling, method, worst cases, limitations and acceptance rationale for Development safety support.	Planning	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0053	Prototypes safety dossier	Challenge / study execution: Record toxicity/allergen and sensitization rationale	Independent raw test data, deviations, control checks, representative conditions and Development safety support.	Execution	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0054	Prototypes safety dossier	Result assessment / report / review: Record toxicity/allergen and sensitization rationale	Approved conclusions, corrective actions, periodic trend or change-impact review of Development safety support.	Review	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	Medium
CTV-29-0055	Shade/odour master control	Study design / protocol: Set validated sensory/instrumental standard	Predefined sampling, method, worst cases, limitations and acceptance rationale for Commercial batch acceptance.	Planning	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0056	Shade/odour master control	Challenge / study execution: Set validated sensory/instrumental standard	Independent raw test data, deviations, control checks, representative conditions and Commercial batch acceptance.	Execution	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0057	Shade/odour master control	Result assessment / report / review: Set validated sensory/instrumental standard	Approved conclusions, corrective actions, periodic trend or change-impact review of Commercial batch acceptance.	Review	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	Medium
CTV-29-0058	R&D data integrity	Study design / protocol: Version formulation notebooks and lab raw data	Predefined sampling, method, worst cases, limitations and acceptance rationale for Reconstructable development history.	Planning	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0059	R&D data integrity	Challenge / study execution: Version formulation notebooks and lab raw data	Independent raw test data, deviations, control checks, representative conditions and Reconstructable development history.	Execution	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0060	R&D data integrity	Result assessment / report / review: Version formulation notebooks and lab raw data	Approved conclusions, corrective actions, periodic trend or change-impact review of Reconstructable development history.	Review	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	Medium
CTV-29-0061	Scale-down failure investigation	Study design / protocol: Use representative tests for separation/sedimentation	Predefined sampling, method, worst cases, limitations and acceptance rationale for Corrective process decisions.	Planning	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0062	Scale-down failure investigation	Challenge / study execution: Use representative tests for separation/sedimentation	Independent raw test data, deviations, control checks, representative conditions and Corrective process decisions.	Execution	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	High
CTV-29-0063	Scale-down failure investigation	Result assessment / report / review: Use representative tests for separation/sedimentation	Approved conclusions, corrective actions, periodic trend or change-impact review of Corrective process decisions.	Review	R&D laboratory to commercial cosmetics	C01 C08 C09 C20	Medium

30 STABILITY, SHELF LIFE AND COMPATIBILITY

45 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-30-0001	Real-time stability protocol	Study design / protocol: Define storage, batch lots, sample times and critical attributes	Predefined sampling, method, worst cases, limitations and acceptance rationale for Shelf-life or PAO rationale.	Planning	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0002	Real-time stability protocol	Challenge / study execution: Define storage, batch lots, sample times and critical attributes	Independent raw test data, deviations, control checks, representative conditions and Shelf-life or PAO rationale.	Execution	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0003	Real-time stability protocol	Result assessment / report / review: Define storage, batch lots, sample times and critical attributes	Approved conclusions, corrective actions, periodic trend or change-impact review of Shelf-life or PAO rationale.	Review	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	Medium
CTV-30-0004	Accelerated stability / stress	Study design / protocol: Challenge heat, freeze-thaw, humidity and light	Predefined sampling, method, worst cases, limitations and acceptance rationale for Screen instability mechanisms.	Planning	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0005	Accelerated stability / stress	Challenge / study execution: Challenge heat, freeze-thaw, humidity and light	Independent raw test data, deviations, control checks, representative conditions and Screen instability mechanisms.	Execution	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0006	Accelerated stability / stress	Result assessment / report / review: Challenge heat, freeze-thaw, humidity and light	Approved conclusions, corrective actions, periodic trend or change-impact review of Screen instability mechanisms.	Review	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	Medium
CTV-30-0007	Freeze-thaw cycles	Study design / protocol: Check separation, crystallisation and emulsion reversibility	Predefined sampling, method, worst cases, limitations and acceptance rationale for Product appearance and rheology.	Planning	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0008	Freeze-thaw cycles	Challenge / study execution: Check separation, crystallisation and emulsion reversibility	Independent raw test data, deviations, control checks, representative conditions and Product appearance and rheology.	Execution	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0009	Freeze-thaw cycles	Result assessment / report / review: Check separation, crystallisation and emulsion reversibility	Approved conclusions, corrective actions, periodic trend or change-impact review of Product appearance and rheology.	Review	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	Medium
CTV-30-0010	Photostability / UV exposure	Study design / protocol: Assess photo-labile ingredients, colorants and translucent packaging	Predefined sampling, method, worst cases, limitations and acceptance rationale for Colour/odor/active changes.	Planning	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0011	Photostability / UV exposure	Challenge / study execution: Assess photo-labile ingredients, colorants and translucent packaging	Independent raw test data, deviations, control checks, representative conditions and Colour/odor/active changes.	Execution	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0012	Photostability / UV exposure	Result assessment / report / review: Assess photo-labile ingredients, colorants and translucent packaging	Approved conclusions, corrective actions, periodic trend or change-impact review of Colour/odor/active changes.	Review	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	Medium
CTV-30-0013	Preservative efficacy at end of shelf life	Study design / protocol: Plan PET or supportive risk-assessed method	Predefined sampling, method, worst cases, limitations and acceptance rationale for Micro protection over life.	Planning	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0014	Preservative efficacy at end of shelf life	Challenge / study execution: Plan PET or supportive risk-assessed method	Independent raw test data, deviations, control checks, representative conditions and Micro protection over life.	Execution	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0015	Preservative efficacy at end of shelf life	Result assessment / report / review: Plan PET or supportive risk-assessed method	Approved conclusions, corrective actions, periodic trend or change-impact review of Micro protection over life.	Review	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	Medium
CTV-30-0016	Container closure compatibility	Study design / protocol: Test polymer swelling, fragrance scalping and permeation	Predefined sampling, method, worst cases, limitations and acceptance rationale for Pack integrity and composition.	Planning	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0017	Container closure compatibility	Challenge / study execution: Test polymer swelling, fragrance scalping and permeation	Independent raw test data, deviations, control checks, representative conditions and Pack integrity and composition.	Execution	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0018	Container closure compatibility	Result assessment / report / review: Test polymer swelling, fragrance scalping and permeation	Approved conclusions, corrective actions, periodic trend or change-impact review of Pack integrity and composition.	Review	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	Medium
CTV-30-0019	Extractables/leachables risk screening	Study design / protocol: Evaluate product-pack contact risk proportionately	Predefined sampling, method, worst cases, limitations and acceptance rationale for Safety report compatibility conclusions.	Planning	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0020	Extractables/leachables risk screening	Challenge / study execution: Evaluate product-pack contact risk proportionately	Independent raw test data, deviations, control checks, representative conditions and Safety report compatibility conclusions.	Execution	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0021	Extractables/leachables risk screening	Result assessment / report / review: Evaluate product-pack contact risk proportionately	Approved conclusions, corrective actions, periodic trend or change-impact review of Safety report compatibility conclusions.	Review	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	Medium
CTV-30-0022	Weight loss/permeation	Study design / protocol: Test volatile perfumes and alcohol packs	Predefined sampling, method, worst cases, limitations and acceptance rationale for Mass and concentration.	Planning	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-30-0023	Weight loss/permeation	Challenge / study execution: Test volatile perfumes and alcohol packs	Independent raw test data, deviations, control checks, representative conditions and Mass and concentration.	Execution	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0024	Weight loss/permeation	Result assessment / report / review: Test volatile perfumes and alcohol packs	Approved conclusions, corrective actions, periodic trend or change-impact review of Mass and concentration.	Review	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	Medium
CTV-30-0025	Pump and spray function aging	Study design / protocol: Age then assess dose, spray and leak	Predefined sampling, method, worst cases, limitations and acceptance rationale for Consumer functionality.	Planning	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0026	Pump and spray function aging	Challenge / study execution: Age then assess dose, spray and leak	Independent raw test data, deviations, control checks, representative conditions and Consumer functionality.	Execution	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0027	Pump and spray function aging	Result assessment / report / review: Age then assess dose, spray and leak	Approved conclusions, corrective actions, periodic trend or change-impact review of Consumer functionality.	Review	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	Medium
CTV-30-0028	Label permanence / adhesive aging	Study design / protocol: Age under humidity, heat and oil exposure	Predefined sampling, method, worst cases, limitations and acceptance rationale for Legibility and adhesion.	Planning	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0029	Label permanence / adhesive aging	Challenge / study execution: Age under humidity, heat and oil exposure	Independent raw test data, deviations, control checks, representative conditions and Legibility and adhesion.	Execution	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0030	Label permanence / adhesive aging	Result assessment / report / review: Age under humidity, heat and oil exposure	Approved conclusions, corrective actions, periodic trend or change-impact review of Legibility and adhesion.	Review	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	Medium
CTV-30-0031	In-use stability / period after opening	Study design / protocol: Assess contact/re-entry and packaging design	Predefined sampling, method, worst cases, limitations and acceptance rationale for PAO justification where required.	Planning	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0032	In-use stability / period after opening	Challenge / study execution: Assess contact/re-entry and packaging design	Independent raw test data, deviations, control checks, representative conditions and PAO justification where required.	Execution	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0033	In-use stability / period after opening	Result assessment / report / review: Assess contact/re-entry and packaging design	Approved conclusions, corrective actions, periodic trend or change-impact review of PAO justification where required.	Review	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	Medium
CTV-30-0034	Microbiological stability	Study design / protocol: Monitor specified organisms/total count over shelf life	Predefined sampling, method, worst cases, limitations and acceptance rationale for No unacceptable microbial change.	Planning	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0035	Microbiological stability	Challenge / study execution: Monitor specified organisms/total count over shelf life	Independent raw test data, deviations, control checks, representative conditions and No unacceptable microbial change.	Execution	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0036	Microbiological stability	Result assessment / report / review: Monitor specified organisms/total count over shelf life	Approved conclusions, corrective actions, periodic trend or change-impact review of No unacceptable microbial change.	Review	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	Medium
CTV-30-0037	Natural oils rancidity	Study design / protocol: Track peroxide, odour and antioxidant response	Predefined sampling, method, worst cases, limitations and acceptance rationale for Oxidative stability.	Planning	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0038	Natural oils rancidity	Challenge / study execution: Track peroxide, odour and antioxidant response	Independent raw test data, deviations, control checks, representative conditions and Oxidative stability.	Execution	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0039	Natural oils rancidity	Result assessment / report / review: Track peroxide, odour and antioxidant response	Approved conclusions, corrective actions, periodic trend or change-impact review of Oxidative stability.	Review	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	Medium
CTV-30-0040	Packaging light barrier	Study design / protocol: Assess amber/opaque vs clear packaging	Predefined sampling, method, worst cases, limitations and acceptance rationale for Protection of photo-labile actives.	Planning	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0041	Packaging light barrier	Challenge / study execution: Assess amber/opaque vs clear packaging	Independent raw test data, deviations, control checks, representative conditions and Protection of photo-labile actives.	Execution	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0042	Packaging light barrier	Result assessment / report / review: Assess amber/opaque vs clear packaging	Approved conclusions, corrective actions, periodic trend or change-impact review of Protection of photo-labile actives.	Review	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	Medium
CTV-30-0043	Transportation impact on stability	Study design / protocol: Integrate distribution temperature and vibration risks	Predefined sampling, method, worst cases, limitations and acceptance rationale for No unacceptable quality shift.	Planning	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0044	Transportation impact on stability	Challenge / study execution: Integrate distribution temperature and vibration risks	Independent raw test data, deviations, control checks, representative conditions and No unacceptable quality shift.	Execution	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	High
CTV-30-0045	Transportation impact on stability	Result assessment / report / review: Integrate distribution temperature and vibration risks	Approved conclusions, corrective actions, periodic trend or change-impact review of No unacceptable quality shift.	Review	All finished cosmetics and primary packaging	C01 C04 C05 C08 C09	Medium

31 PRODUCT SAFETY, CLAIMS AND CONSUMER USE

45 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-31-0001	Cosmetic Product Safety Report	Study design / protocol: Compile product composition, exposure, toxicology and assessor evaluation	Predefined sampling, method, worst cases, limitations and acceptance rationale for CPSR for EU/GB as applicable.	Planning	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0002	Cosmetic Product Safety Report	Challenge / study execution: Compile product composition, exposure, toxicology and assessor evaluation	Independent raw test data, deviations, control checks, representative conditions and CPSR for EU/GB as applicable.	Execution	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0003	Cosmetic Product Safety Report	Result assessment / report / review: Compile product composition, exposure, toxicology and assessor evaluation	Approved conclusions, corrective actions, periodic trend or change-impact review of CPSR for EU/GB as applicable.	Review	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	Medium
CTV-31-0004	MoCRA adequate safety substantiation	Study design / protocol: Document reliable evidence appropriate to intended US use	Predefined sampling, method, worst cases, limitations and acceptance rationale for Safety substantiation record.	Planning	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0005	MoCRA adequate safety substantiation	Challenge / study execution: Document reliable evidence appropriate to intended US use	Independent raw test data, deviations, control checks, representative conditions and Safety substantiation record.	Execution	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0006	MoCRA adequate safety substantiation	Result assessment / report / review: Document reliable evidence appropriate to intended US use	Approved conclusions, corrective actions, periodic trend or change-impact review of Safety substantiation record.	Review	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	Medium
CTV-31-0007	Skin compatibility study	Study design / protocol: Assess patch/HRIPT etc. where ethically and scientifically justified	Predefined sampling, method, worst cases, limitations and acceptance rationale for Clinically relevant tolerability evidence.	Planning	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0008	Skin compatibility study	Challenge / study execution: Assess patch/HRIPT etc. where ethically and scientifically justified	Independent raw test data, deviations, control checks, representative conditions and Clinically relevant tolerability evidence.	Execution	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0009	Skin compatibility study	Result assessment / report / review: Assess patch/HRIPT etc. where ethically and scientifically justified	Approved conclusions, corrective actions, periodic trend or change-impact review of Clinically relevant tolerability evidence.	Review	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	Medium
CTV-31-0010	Eye area safety substantiation	Study design / protocol: Evaluate ocular exposure and applicator hygiene	Predefined sampling, method, worst cases, limitations and acceptance rationale for Eye product safety assessment.	Planning	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0011	Eye area safety substantiation	Challenge / study execution: Evaluate ocular exposure and applicator hygiene	Independent raw test data, deviations, control checks, representative conditions and Eye product safety assessment.	Execution	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0012	Eye area safety substantiation	Result assessment / report / review: Evaluate ocular exposure and applicator hygiene	Approved conclusions, corrective actions, periodic trend or change-impact review of Eye product safety assessment.	Review	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	Medium
CTV-31-0013	Oral exposure safety	Study design / protocol: Evaluate foreseeable ingestion for lip/oral products	Predefined sampling, method, worst cases, limitations and acceptance rationale for Margin-of-safety rationale.	Planning	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0014	Oral exposure safety	Challenge / study execution: Evaluate foreseeable ingestion for lip/oral products	Independent raw test data, deviations, control checks, representative conditions and Margin-of-safety rationale.	Execution	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0015	Oral exposure safety	Result assessment / report / review: Evaluate foreseeable ingestion for lip/oral products	Approved conclusions, corrective actions, periodic trend or change-impact review of Margin-of-safety rationale.	Review	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	Medium
CTV-31-0016	Baby cosmetics safety	Study design / protocol: Assess age-dependent exposure and heightened micro risk	Predefined sampling, method, worst cases, limitations and acceptance rationale for Evidence for intended consumers.	Planning	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-31-0017	Baby cosmetics safety	Challenge / study execution: Assess age-dependent exposure and heightened micro risk	Independent raw test data, deviations, control checks, representative conditions and Evidence for intended consumers.	Execution	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0018	Baby cosmetics safety	Result assessment / report / review: Assess age-dependent exposure and heightened micro risk	Approved conclusions, corrective actions, periodic trend or change-impact review of Evidence for intended consumers.	Review	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	Medium
CTV-31-0019	Sensitive skin claims	Study design / protocol: Validate study design / claims wording	Predefined sampling, method, worst cases, limitations and acceptance rationale for Support for 'sensitive' or 'hypoallergenic' claims.	Planning	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0020	Sensitive skin claims	Challenge / study execution: Validate study design / claims wording	Independent raw test data, deviations, control checks, representative conditions and Support for 'sensitive' or 'hypoallergenic' claims.	Execution	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0021	Sensitive skin claims	Result assessment / report / review: Validate study design / claims wording	Approved conclusions, corrective actions, periodic trend or change-impact review of Support for 'sensitive' or 'hypoallergenic' claims.	Review	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	Medium
CTV-31-0022	Dermatologically tested claims	Study design / protocol: Check study methodology and test population	Predefined sampling, method, worst cases, limitations and acceptance rationale for Accurate consumer communication.	Planning	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0023	Dermatologically tested claims	Challenge / study execution: Check study methodology and test population	Independent raw test data, deviations, control checks, representative conditions and Accurate consumer communication.	Execution	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0024	Dermatologically tested claims	Result assessment / report / review: Check study methodology and test population	Approved conclusions, corrective actions, periodic trend or change-impact review of Accurate consumer communication.	Review	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	Medium
CTV-31-0025	Moisturization efficacy	Study design / protocol: Define corneometer or other endpoint	Predefined sampling, method, worst cases, limitations and acceptance rationale for Study support for hydration claim.	Planning	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0026	Moisturization efficacy	Challenge / study execution: Define corneometer or other endpoint	Independent raw test data, deviations, control checks, representative conditions and Study support for hydration claim.	Execution	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0027	Moisturization efficacy	Result assessment / report / review: Define corneometer or other endpoint	Approved conclusions, corrective actions, periodic trend or change-impact review of Study support for hydration claim.	Review	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	Medium
CTV-31-0028	Transepidermal water loss claim	Study design / protocol: Define TEWL reproducibility and test conditions	Predefined sampling, method, worst cases, limitations and acceptance rationale for Barrier performance evidence.	Planning	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0029	Transepidermal water loss claim	Challenge / study execution: Define TEWL reproducibility and test conditions	Independent raw test data, deviations, control checks, representative conditions and Barrier performance evidence.	Execution	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0030	Transepidermal water loss claim	Result assessment / report / review: Define TEWL reproducibility and test conditions	Approved conclusions, corrective actions, periodic trend or change-impact review of Barrier performance evidence.	Review	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	Medium
CTV-31-0031	Deodorant efficacy claim	Study design / protocol: Define odour assessment and volunteer protocol	Predefined sampling, method, worst cases, limitations and acceptance rationale for Claims support.	Planning	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0032	Deodorant efficacy claim	Challenge / study execution: Define odour assessment and volunteer protocol	Independent raw test data, deviations, control checks, representative conditions and Claims support.	Execution	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0033	Deodorant efficacy claim	Result assessment / report / review: Define odour assessment and volunteer protocol	Approved conclusions, corrective actions, periodic trend or change-impact review of Claims support.	Review	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	Medium
CTV-31-0034	Hair strength / shine claims	Study design / protocol: Instrumental or consumer test reliability	Predefined sampling, method, worst cases, limitations and acceptance rationale for Claim substantiation.	Planning	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-31-0035	Hair strength / shine claims	Challenge / study execution: Instrumental or consumer test reliability	Independent raw test data, deviations, control checks, representative conditions and Claim substantiation.	Execution	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0036	Hair strength / shine claims	Result assessment / report / review: Instrumental or consumer test reliability	Approved conclusions, corrective actions, periodic trend or change-impact review of Claim substantiation.	Review	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	Medium
CTV-31-0037	Water-resistant claim	Study design / protocol: Apply relevant test rules for marketed product category	Predefined sampling, method, worst cases, limitations and acceptance rationale for Defensible performance statement.	Planning	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0038	Water-resistant claim	Challenge / study execution: Apply relevant test rules for marketed product category	Independent raw test data, deviations, control checks, representative conditions and Defensible performance statement.	Execution	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0039	Water-resistant claim	Result assessment / report / review: Apply relevant test rules for marketed product category	Approved conclusions, corrective actions, periodic trend or change-impact review of Defensible performance statement.	Review	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	Medium
CTV-31-0040	Natural / organic claims	Study design / protocol: ISO 16128 indices plus separate legal/marketing review	Predefined sampling, method, worst cases, limitations and acceptance rationale for No mistaken equivalence to certification.	Planning	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0041	Natural / organic claims	Challenge / study execution: ISO 16128 indices plus separate legal/marketing review	Independent raw test data, deviations, control checks, representative conditions and No mistaken equivalence to certification.	Execution	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0042	Natural / organic claims	Result assessment / report / review: ISO 16128 indices plus separate legal/marketing review	Approved conclusions, corrective actions, periodic trend or change-impact review of No mistaken equivalence to certification.	Review	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	Medium
CTV-31-0043	Safety signal management	Study design / protocol: Capture adverse reaction, seriousness and trend	Predefined sampling, method, worst cases, limitations and acceptance rationale for Safety review and corrective action.	Planning	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0044	Safety signal management	Challenge / study execution: Capture adverse reaction, seriousness and trend	Independent raw test data, deviations, control checks, representative conditions and Safety review and corrective action.	Execution	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	High
CTV-31-0045	Safety signal management	Result assessment / report / review: Capture adverse reaction, seriousness and trend	Approved conclusions, corrective actions, periodic trend or change-impact review of Safety review and corrective action.	Review	Safety substantiation and evidence for marketed cosmetic claims	C04 C05 C06 C21 C22	Medium

32 REGULATORY PRODUCT DOSSIER, LABELING AND PIF

33 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-32-0001	INCI ingredient list and restrictions	Study design / protocol: Verify identity, order, restricted ingredients, nanomaterial and allergen details	Predefined sampling, method, worst cases, limitations and acceptance rationale for Label compliance for each market.	Planning	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	High
CTV-32-0002	INCI ingredient list and restrictions	Challenge / study execution: Verify identity, order, restricted ingredients, nanomaterial and allergen details	Independent raw test data, deviations, control checks, representative conditions and Label compliance for each market.	Execution	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	High
CTV-32-0003	INCI ingredient list and restrictions	Result assessment / report / review: Verify identity, order, restricted ingredients, nanomaterial and allergen details	Approved conclusions, corrective actions, periodic trend or change-impact review of Label compliance for each market.	Review	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	Medium
CTV-32-0004	India product specification map	Study design / protocol: Match Cosmetics Rules and Ninth Schedule / current BIS standard	Predefined sampling, method, worst cases, limitations and acceptance rationale for Required test dossier.	Planning	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	High
CTV-32-0005	India product specification map	Challenge / study execution: Match Cosmetics Rules and Ninth Schedule / current BIS standard	Independent raw test data, deviations, control checks, representative conditions and Required test dossier.	Execution	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	High
CTV-32-0006	India product specification map	Result assessment / report / review: Match Cosmetics Rules and Ninth Schedule / current BIS standard	Approved conclusions, corrective actions, periodic trend or change-impact review of Required test dossier.	Review	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	Medium
CTV-32-0007	EU Product Information File	Study design / protocol: Compile description, CPSR, GMP, claims, test history	Predefined sampling, method, worst cases, limitations and acceptance rationale for EU PIF completeness.	Planning	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	High
CTV-32-0008	EU Product Information File	Challenge / study execution: Compile description, CPSR, GMP, claims, test history	Independent raw test data, deviations, control checks, representative conditions and EU PIF completeness.	Execution	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	High
CTV-32-0009	EU Product Information File	Result assessment / report / review: Compile description, CPSR, GMP, claims, test history	Approved conclusions, corrective actions, periodic trend or change-impact review of EU PIF completeness.	Review	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	Medium
CTV-32-0010	EU CPNP notification	Study design / protocol: Record required EU notification when applicable	Predefined sampling, method, worst cases, limitations and acceptance rationale for Notification evidence, not EU product approval.	Planning	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	High
CTV-32-0011	EU CPNP notification	Challenge / study execution: Record required EU notification when applicable	Independent raw test data, deviations, control checks, representative conditions and Notification evidence, not EU product approval.	Execution	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	High
CTV-32-0012	EU CPNP notification	Result assessment / report / review: Record required EU notification when applicable	Approved conclusions, corrective actions, periodic trend or change-impact review of Notification evidence, not EU product approval.	Review	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	Medium
CTV-32-0013	GB SCPN notification	Study design / protocol: Ensure GB notifications before marketing	Predefined sampling, method, worst cases, limitations and acceptance rationale for GB RP and notification record.	Planning	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	High
CTV-32-0014	GB SCPN notification	Challenge / study execution: Ensure GB notifications before marketing	Independent raw test data, deviations, control checks, representative conditions and GB RP and notification record.	Execution	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	High
CTV-32-0015	GB SCPN notification	Result assessment / report / review: Ensure GB notifications before marketing	Approved conclusions, corrective actions, periodic trend or change-impact review of GB RP and notification record.	Review	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	Medium
CTV-32-0016	US facility/product obligations	Study design / protocol: Track MoCRA registration/listing with exemptions and renewals	Predefined sampling, method, worst cases, limitations and acceptance rationale for US registration/listing trace.	Planning	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	High
CTV-32-0017	US facility/product obligations	Challenge / study execution: Track MoCRA registration/listing with exemptions and renewals	Independent raw test data, deviations, control checks, representative conditions and US registration/listing trace.	Execution	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	High
CTV-32-0018	US facility/product obligations	Result assessment / report / review: Track MoCRA registration/listing with exemptions and renewals	Approved conclusions, corrective actions, periodic trend or change-impact review of US registration/listing trace.	Review	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	Medium
CTV-32-0019	Cosmetic claims approval matrix	Study design / protocol: Match each marketing statement to validated evidence	Predefined sampling, method, worst cases, limitations and acceptance rationale for No unsupported claims.	Planning	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	High
CTV-32-0020	Cosmetic claims approval matrix	Challenge / study execution: Match each marketing statement to validated evidence	Independent raw test data, deviations, control checks, representative conditions and No unsupported claims.	Execution	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	High
CTV-32-0021	Cosmetic claims approval matrix	Result assessment / report / review: Match each marketing statement to validated evidence	Approved conclusions, corrective actions, periodic trend or change-impact review of No unsupported claims.	Review	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	Medium
CTV-32-0022	Ingredient restricted substance compliance	Study design / protocol: Check updated destination market Annex restrictions	Predefined sampling, method, worst cases, limitations and acceptance rationale for Ingredient compliance report.	Planning	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-32-0023	Ingredient restricted substance compliance	Challenge / study execution: Check updated destination market Annex restrictions	Independent raw test data, deviations, control checks, representative conditions and Ingredient compliance report.	Execution	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	High
CTV-32-0024	Ingredient restricted substance compliance	Result assessment / report / review: Check updated destination market Annex restrictions	Approved conclusions, corrective actions, periodic trend or change-impact review of Ingredient compliance report.	Review	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	Medium
CTV-32-0025	Packaging warning statements	Study design / protocol: Verify directions, allergy warnings, flammability and age warnings	Predefined sampling, method, worst cases, limitations and acceptance rationale for Approved artwork.	Planning	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	High
CTV-32-0026	Packaging warning statements	Challenge / study execution: Verify directions, allergy warnings, flammability and age warnings	Independent raw test data, deviations, control checks, representative conditions and Approved artwork.	Execution	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	High
CTV-32-0027	Packaging warning statements	Result assessment / report / review: Verify directions, allergy warnings, flammability and age warnings	Approved conclusions, corrective actions, periodic trend or change-impact review of Approved artwork.	Review	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	Medium
CTV-32-0028	Traceability / adverse event record	Study design / protocol: Link distributed batches to complaint and serious adverse event reporting	Predefined sampling, method, worst cases, limitations and acceptance rationale for Traceable and reportable events.	Planning	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	High
CTV-32-0029	Traceability / adverse event record	Challenge / study execution: Link distributed batches to complaint and serious adverse event reporting	Independent raw test data, deviations, control checks, representative conditions and Traceable and reportable events.	Execution	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	High
CTV-32-0030	Traceability / adverse event record	Result assessment / report / review: Link distributed batches to complaint and serious adverse event reporting	Approved conclusions, corrective actions, periodic trend or change-impact review of Traceable and reportable events.	Review	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	Medium
CTV-32-0031	Overseas importer/Responsible Person trace	Study design / protocol: Confirm signed responsibilities and product dossier access	Predefined sampling, method, worst cases, limitations and acceptance rationale for Regulatory contracts and records.	Planning	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	High
CTV-32-0032	Overseas importer/Responsible Person trace	Challenge / study execution: Confirm signed responsibilities and product dossier access	Independent raw test data, deviations, control checks, representative conditions and Regulatory contracts and records.	Execution	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	High
CTV-32-0033	Overseas importer/Responsible Person trace	Result assessment / report / review: Confirm signed responsibilities and product dossier access	Approved conclusions, corrective actions, periodic trend or change-impact review of Regulatory contracts and records.	Review	India, EU/GB, US and export destination	C02 C04 C05 C06 C13 C14 C21	Medium

33 COMPUTERIZED SYSTEMS AND DATA CONTROLS

72 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-33-0001	Electronic batch record or MES	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and recipe permissions and override trail mapped to batch accuracy.	Design	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0002	Electronic batch record or MES	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Electronic batch record or MES.	Installation	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium
CTV-33-0003	Electronic batch record or MES	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of recipe permissions and override trail; verify batch accuracy against predetermined product-specific criteria.	Operational	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0004	Electronic batch record or MES	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of batch accuracy.	Operational	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0005	Electronic batch record or MES	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and batch accuracy trends; number of runs justified by risk.	Performance	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0006	Electronic batch record or MES	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting batch accuracy.	Lifecycle	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium
CTV-33-0007	PLC controller on mixers	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and sensor signal and setpoint write access mapped to mixing control.	Design	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0008	PLC controller on mixers	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for PLC controller on mixers.	Installation	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium
CTV-33-0009	PLC controller on mixers	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of sensor signal and setpoint write access; verify mixing control against predetermined product-specific criteria.	Operational	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0010	PLC controller on mixers	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of mixing control.	Operational	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0011	PLC controller on mixers	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and mixing control trends; number of runs justified by risk.	Performance	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0012	PLC controller on mixers	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting mixing control.	Lifecycle	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium
CTV-33-0013	SCADA/HMI trending	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and trend capture and alarm acknowledgments mapped to process records.	Design	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0014	SCADA/HMI trending	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for SCADA/HMI trending.	Installation	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium
CTV-33-0015	SCADA/HMI trending	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of trend capture and alarm acknowledgments; verify process records against predetermined product-specific criteria.	Operational	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0016	SCADA/HMI trending	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of process records.	Operational	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0017	SCADA/HMI trending	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and process records trends; number of runs justified by risk.	Performance	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0018	SCADA/HMI trending	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting process records.	Lifecycle	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium
CTV-33-0019	Warehouse management system	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and inventory holds and FEFO mapped to stock status.	Design	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0020	Warehouse management system	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Warehouse management system.	Installation	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium
CTV-33-0021	Warehouse management system	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of inventory holds and FEFO; verify stock status against predetermined product-specific criteria.	Operational	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0022	Warehouse management system	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of stock status.	Operational	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-33-0023	Warehouse management system	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and stock status trends; number of runs justified by risk.	Performance	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0024	Warehouse management system	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting stock status.	Lifecycle	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium
CTV-33-0025	Laboratory LIMS	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and sample identity and release locking mapped to QC traceability.	Design	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0026	Laboratory LIMS	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Laboratory LIMS.	Installation	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium
CTV-33-0027	Laboratory LIMS	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of sample identity and release locking; verify QC traceability against predetermined product-specific criteria.	Operational	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0028	Laboratory LIMS	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of QC traceability.	Operational	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0029	Laboratory LIMS	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and QC traceability trends; number of runs justified by risk.	Performance	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0030	Laboratory LIMS	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting QC traceability.	Lifecycle	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium
CTV-33-0031	Chromatography data software	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and integration, audit trail and method versions mapped to test data integrity.	Design	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0032	Chromatography data software	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Chromatography data software.	Installation	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium
CTV-33-0033	Chromatography data software	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of integration, audit trail and method versions; verify test data integrity against predetermined product-specific criteria.	Operational	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0034	Chromatography data software	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of test data integrity.	Operational	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0035	Chromatography data software	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and test data integrity trends; number of runs justified by risk.	Performance	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0036	Chromatography data software	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting test data integrity.	Lifecycle	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium
CTV-33-0037	Stability data repository	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and sample schedule and report linking mapped to stability trace.	Design	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0038	Stability data repository	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Stability data repository.	Installation	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium
CTV-33-0039	Stability data repository	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of sample schedule and report linking; verify stability trace against predetermined product-specific criteria.	Operational	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0040	Stability data repository	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of stability trace.	Operational	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0041	Stability data repository	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and stability trace trends; number of runs justified by risk.	Performance	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0042	Stability data repository	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting stability trace.	Lifecycle	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium
CTV-33-0043	Temperature mapping recorder	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and logging and probe synchronization mapped to temperature evidence.	Design	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0044	Temperature mapping recorder	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Temperature mapping recorder.	Installation	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium
CTV-33-0045	Temperature mapping recorder	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of logging and probe synchronization; verify temperature evidence against predetermined product-specific criteria.	Operational	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0046	Temperature mapping recorder	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of temperature evidence.	Operational	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-33-0047	Temperature mapping recorder	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and temperature evidence trends; number of runs justified by risk.	Performance	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0048	Temperature mapping recorder	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting temperature evidence.	Lifecycle	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium
CTV-33-0049	Electronic label artwork system	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and version approvals and change archive mapped to label correctness.	Design	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0050	Electronic label artwork system	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Electronic label artwork system.	Installation	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium
CTV-33-0051	Electronic label artwork system	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of version approvals and change archive; verify label correctness against predetermined product-specific criteria.	Operational	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0052	Electronic label artwork system	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of label correctness.	Operational	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0053	Electronic label artwork system	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and label correctness trends; number of runs justified by risk.	Performance	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0054	Electronic label artwork system	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting label correctness.	Lifecycle	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium
CTV-33-0055	User access role matrix	Study design / protocol: Test separation of review, edit and release functions	Predefined sampling, method, worst cases, limitations and acceptance rationale for Authorized actions.	Planning	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0056	User access role matrix	Challenge / study execution: Test separation of review, edit and release functions	Independent raw test data, deviations, control checks, representative conditions and Authorized actions.	Execution	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0057	User access role matrix	Result assessment / report / review: Test separation of review, edit and release functions	Approved conclusions, corrective actions, periodic trend or change-impact review of Authorized actions.	Review	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium
CTV-33-0058	Audit trail review	Study design / protocol: Challenge creation, edits, deletions and reason controls	Predefined sampling, method, worst cases, limitations and acceptance rationale for Traceable changes.	Planning	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0059	Audit trail review	Challenge / study execution: Challenge creation, edits, deletions and reason controls	Independent raw test data, deviations, control checks, representative conditions and Traceable changes.	Execution	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0060	Audit trail review	Result assessment / report / review: Challenge creation, edits, deletions and reason controls	Approved conclusions, corrective actions, periodic trend or change-impact review of Traceable changes.	Review	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium
CTV-33-0061	Backup/restore challenge	Study design / protocol: Restore batch and QC data from validated backup	Predefined sampling, method, worst cases, limitations and acceptance rationale for Data availability.	Planning	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0062	Backup/restore challenge	Challenge / study execution: Restore batch and QC data from validated backup	Independent raw test data, deviations, control checks, representative conditions and Data availability.	Execution	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0063	Backup/restore challenge	Result assessment / report / review: Restore batch and QC data from validated backup	Approved conclusions, corrective actions, periodic trend or change-impact review of Data availability.	Review	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium
CTV-33-0064	Interface reconciliation	Study design / protocol: Check PLC to MES and LIMS to ERP records	Predefined sampling, method, worst cases, limitations and acceptance rationale for No data loss.	Planning	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0065	Interface reconciliation	Challenge / study execution: Check PLC to MES and LIMS to ERP records	Independent raw test data, deviations, control checks, representative conditions and No data loss.	Execution	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0066	Interface reconciliation	Result assessment / report / review: Check PLC to MES and LIMS to ERP records	Approved conclusions, corrective actions, periodic trend or change-impact review of No data loss.	Review	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium
CTV-33-0067	Electronic signatures and approvals	Study design / protocol: Assess legal requirement and attribution for each market	Predefined sampling, method, worst cases, limitations and acceptance rationale for Traceable approval evidence.	Planning	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0068	Electronic signatures and approvals	Challenge / study execution: Assess legal requirement and attribution for each market	Independent raw test data, deviations, control checks, representative conditions and Traceable approval evidence.	Execution	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0069	Electronic signatures and approvals	Result assessment / report / review: Assess legal requirement and attribution for each market	Approved conclusions, corrective actions, periodic trend or change-impact review of Traceable approval evidence.	Review	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium
CTV-33-0070	System periodic review	Study design / protocol: Trend incidents, changes, patches and access	Predefined sampling, method, worst cases, limitations and acceptance rationale for Continued fitness.	Planning	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-33-0071	System periodic review	Challenge / study execution: Trend incidents, changes, patches and access	Independent raw test data, deviations, control checks, representative conditions and Continued fitness.	Execution	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	High
CTV-33-0072	System periodic review	Result assessment / report / review: Trend incidents, changes, patches and access	Approved conclusions, corrective actions, periodic trend or change-impact review of Continued fitness.	Review	Manufacturing, lab and enterprise systems	C01 C04 C06 C20	Medium

34 WAREHOUSE TEMPERATURE, DISTRIBUTION AND TRANSPORT

69 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-34-0001	Warehouse temperature logger network	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and sensor placement and time sync mapped to storage conditions.	Design	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0002	Warehouse temperature logger network	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Warehouse temperature logger network.	Installation	Raw materials, finished goods and samples	C01 C02 C20	Medium
CTV-34-0003	Warehouse temperature logger network	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of sensor placement and time sync; verify storage conditions against predetermined product-specific criteria.	Operational	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0004	Warehouse temperature logger network	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of storage conditions.	Operational	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0005	Warehouse temperature logger network	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and storage conditions trends; number of runs justified by risk.	Performance	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0006	Warehouse temperature logger network	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting storage conditions.	Lifecycle	Raw materials, finished goods and samples	C01 C02 C20	Medium
CTV-34-0007	Controlled temperature store	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and hot/cold spots and door opening mapped to ingredient integrity.	Design	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0008	Controlled temperature store	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Controlled temperature store.	Installation	Raw materials, finished goods and samples	C01 C02 C20	Medium
CTV-34-0009	Controlled temperature store	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of hot/cold spots and door opening; verify ingredient integrity against predetermined product-specific criteria.	Operational	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0010	Controlled temperature store	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of ingredient integrity.	Operational	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0011	Controlled temperature store	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and ingredient integrity trends; number of runs justified by risk.	Performance	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0012	Controlled temperature store	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting ingredient integrity.	Lifecycle	Raw materials, finished goods and samples	C01 C02 C20	Medium
CTV-34-0013	Cold storage room	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and mapping and excursion recovery mapped to sensitive ingredients.	Design	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0014	Cold storage room	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Cold storage room.	Installation	Raw materials, finished goods and samples	C01 C02 C20	Medium
CTV-34-0015	Cold storage room	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of mapping and excursion recovery; verify sensitive ingredients against predetermined product-specific criteria.	Operational	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0016	Cold storage room	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of sensitive ingredients.	Operational	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0017	Cold storage room	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and sensitive ingredients trends; number of runs justified by risk.	Performance	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0018	Cold storage room	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting sensitive ingredients.	Lifecycle	Raw materials, finished goods and samples	C01 C02 C20	Medium
CTV-34-0019	Raw material racking	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and load capacity and identification mapped to material safety.	Design	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0020	Raw material racking	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Raw material racking.	Installation	Raw materials, finished goods and samples	C01 C02 C20	Medium
CTV-34-0021	Raw material racking	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of load capacity and identification; verify material safety against predetermined product-specific criteria.	Operational	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0022	Raw material racking	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of material safety.	Operational	Raw materials, finished goods and samples	C01 C02 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-34-0023	Raw material racking	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and material safety trends; number of runs justified by risk.	Performance	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0024	Raw material racking	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting material safety.	Lifecycle	Raw materials, finished goods and samples	C01 C02 C20	Medium
CTV-34-0025	Forklift/pallet jacks	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and handling and cleanability mapped to pack protection.	Design	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0026	Forklift/pallet jacks	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Forklift/pallet jacks.	Installation	Raw materials, finished goods and samples	C01 C02 C20	Medium
CTV-34-0027	Forklift/pallet jacks	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of handling and cleanability; verify pack protection against predetermined product-specific criteria.	Operational	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0028	Forklift/pallet jacks	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of pack protection.	Operational	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0029	Forklift/pallet jacks	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and pack protection trends; number of runs justified by risk.	Performance	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0030	Forklift/pallet jacks	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting pack protection.	Lifecycle	Raw materials, finished goods and samples	C01 C02 C20	Medium
CTV-34-0031	Finished goods storage shelves	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and shelf segregation and identification mapped to status control.	Design	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0032	Finished goods storage shelves	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Finished goods storage shelves.	Installation	Raw materials, finished goods and samples	C01 C02 C20	Medium
CTV-34-0033	Finished goods storage shelves	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of shelf segregation and identification; verify status control against predetermined product-specific criteria.	Operational	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0034	Finished goods storage shelves	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of status control.	Operational	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0035	Finished goods storage shelves	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and status control trends; number of runs justified by risk.	Performance	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0036	Finished goods storage shelves	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting status control.	Lifecycle	Raw materials, finished goods and samples	C01 C02 C20	Medium
CTV-34-0037	Truck/container monitoring logger	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and probe positioning and duration mapped to distribution exposure.	Design	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0038	Truck/container monitoring logger	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Truck/container monitoring logger.	Installation	Raw materials, finished goods and samples	C01 C02 C20	Medium
CTV-34-0039	Truck/container monitoring logger	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of probe positioning and duration; verify distribution exposure against predetermined product-specific criteria.	Operational	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0040	Truck/container monitoring logger	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of distribution exposure.	Operational	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0041	Truck/container monitoring logger	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and distribution exposure trends; number of runs justified by risk.	Performance	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0042	Truck/container monitoring logger	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting distribution exposure.	Lifecycle	Raw materials, finished goods and samples	C01 C02 C20	Medium
CTV-34-0043	Shipping label scanner	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and shipping verification and wrong-pick detection mapped to lot traceability.	Design	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0044	Shipping label scanner	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Shipping label scanner.	Installation	Raw materials, finished goods and samples	C01 C02 C20	Medium
CTV-34-0045	Shipping label scanner	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of shipping verification and wrong-pick detection; verify lot traceability against predetermined product-specific criteria.	Operational	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0046	Shipping label scanner	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of lot traceability.	Operational	Raw materials, finished goods and samples	C01 C02 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-34-0047	Shipping label scanner	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and lot traceability trends; number of runs justified by risk.	Performance	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0048	Shipping label scanner	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting lot traceability.	Lifecycle	Raw materials, finished goods and samples	C01 C02 C20	Medium
CTV-34-0049	Warehouse thermal mapping	Study design / protocol: Hot/cold seasonal qualification and operational loading	Predefined sampling, method, worst cases, limitations and acceptance rationale for Temperature distribution evidence.	Planning	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0050	Warehouse thermal mapping	Challenge / study execution: Hot/cold seasonal qualification and operational loading	Independent raw test data, deviations, control checks, representative conditions and Temperature distribution evidence.	Execution	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0051	Warehouse thermal mapping	Result assessment / report / review: Hot/cold seasonal qualification and operational loading	Approved conclusions, corrective actions, periodic trend or change-impact review of Temperature distribution evidence.	Review	Raw materials, finished goods and samples	C01 C02 C20	Medium
CTV-34-0052	FEFO effectiveness	Study design / protocol: Challenge expiry/hold/rejection picking restrictions	Predefined sampling, method, worst cases, limitations and acceptance rationale for No expired/raw material release.	Planning	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0053	FEFO effectiveness	Challenge / study execution: Challenge expiry/hold/rejection picking restrictions	Independent raw test data, deviations, control checks, representative conditions and No expired/raw material release.	Execution	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0054	FEFO effectiveness	Result assessment / report / review: Challenge expiry/hold/rejection picking restrictions	Approved conclusions, corrective actions, periodic trend or change-impact review of No expired/raw material release.	Review	Raw materials, finished goods and samples	C01 C02 C20	Medium
CTV-34-0055	Distribution simulation	Study design / protocol: Vibration, drop, humidity and temperature exposure	Predefined sampling, method, worst cases, limitations and acceptance rationale for Product and pack stability.	Planning	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0056	Distribution simulation	Challenge / study execution: Vibration, drop, humidity and temperature exposure	Independent raw test data, deviations, control checks, representative conditions and Product and pack stability.	Execution	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0057	Distribution simulation	Result assessment / report / review: Vibration, drop, humidity and temperature exposure	Approved conclusions, corrective actions, periodic trend or change-impact review of Product and pack stability.	Review	Raw materials, finished goods and samples	C01 C02 C20	Medium
CTV-34-0058	Excursion disposition	Study design / protocol: Link stability limits to acceptance of temperature excursions	Predefined sampling, method, worst cases, limitations and acceptance rationale for QA decision record.	Planning	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0059	Excursion disposition	Challenge / study execution: Link stability limits to acceptance of temperature excursions	Independent raw test data, deviations, control checks, representative conditions and QA decision record.	Execution	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0060	Excursion disposition	Result assessment / report / review: Link stability limits to acceptance of temperature excursions	Approved conclusions, corrective actions, periodic trend or change-impact review of QA decision record.	Review	Raw materials, finished goods and samples	C01 C02 C20	Medium
CTV-34-0061	Return product assessment	Study design / protocol: Check seal, traceability and contamination risk	Predefined sampling, method, worst cases, limitations and acceptance rationale for Safe disposition.	Planning	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0062	Return product assessment	Challenge / study execution: Check seal, traceability and contamination risk	Independent raw test data, deviations, control checks, representative conditions and Safe disposition.	Execution	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0063	Return product assessment	Result assessment / report / review: Check seal, traceability and contamination risk	Approved conclusions, corrective actions, periodic trend or change-impact review of Safe disposition.	Review	Raw materials, finished goods and samples	C01 C02 C20	Medium
CTV-34-0064	Traceability/recall challenge	Study design / protocol: Run mock recall to distributor/retailer lot level	Predefined sampling, method, worst cases, limitations and acceptance rationale for Recall retrieval and time record.	Planning	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0065	Traceability/recall challenge	Challenge / study execution: Run mock recall to distributor/retailer lot level	Independent raw test data, deviations, control checks, representative conditions and Recall retrieval and time record.	Execution	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0066	Traceability/recall challenge	Result assessment / report / review: Run mock recall to distributor/retailer lot level	Approved conclusions, corrective actions, periodic trend or change-impact review of Recall retrieval and time record.	Review	Raw materials, finished goods and samples	C01 C02 C20	Medium
CTV-34-0067	Container warehouse odour transfer	Study design / protocol: Assess fragrance and odorous solvent segregation	Predefined sampling, method, worst cases, limitations and acceptance rationale for No unacceptable fragrance contamination.	Planning	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0068	Container warehouse odour transfer	Challenge / study execution: Assess fragrance and odorous solvent segregation	Independent raw test data, deviations, control checks, representative conditions and No unacceptable fragrance contamination.	Execution	Raw materials, finished goods and samples	C01 C02 C20	High
CTV-34-0069	Container warehouse odour transfer	Result assessment / report / review: Assess fragrance and odorous solvent segregation	Approved conclusions, corrective actions, periodic trend or change-impact review of No unacceptable fragrance contamination.	Review	Raw materials, finished goods and samples	C01 C02 C20	Medium

35 SUPPLIER, PURCHASE AND OUTSOURCED SERVICES

30 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-35-0001	Supplier qualification	Study design / protocol: Risk-rank ingredient manufacturers and contract packers	Predefined sampling, method, worst cases, limitations and acceptance rationale for Approved supplier status.	Planning	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	High
CTV-35-0002	Supplier qualification	Challenge / study execution: Risk-rank ingredient manufacturers and contract packers	Independent raw test data, deviations, control checks, representative conditions and Approved supplier status.	Execution	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	High
CTV-35-0003	Supplier qualification	Result assessment / report / review: Risk-rank ingredient manufacturers and contract packers	Approved conclusions, corrective actions, periodic trend or change-impact review of Approved supplier status.	Review	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	Medium
CTV-35-0004	COA verification	Study design / protocol: Challenge supplier results against periodic independent testing	Predefined sampling, method, worst cases, limitations and acceptance rationale for Reliable incoming release.	Planning	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	High
CTV-35-0005	COA verification	Challenge / study execution: Challenge supplier results against periodic independent testing	Independent raw test data, deviations, control checks, representative conditions and Reliable incoming release.	Execution	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	High
CTV-35-0006	COA verification	Result assessment / report / review: Challenge supplier results against periodic independent testing	Approved conclusions, corrective actions, periodic trend or change-impact review of Reliable incoming release.	Review	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	Medium
CTV-35-0007	Supplier change control	Study design / protocol: Assess fragrance/preservative or pigment source substitution	Predefined sampling, method, worst cases, limitations and acceptance rationale for Process and stability impact.	Planning	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	High
CTV-35-0008	Supplier change control	Challenge / study execution: Assess fragrance/preservative or pigment source substitution	Independent raw test data, deviations, control checks, representative conditions and Process and stability impact.	Execution	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	High
CTV-35-0009	Supplier change control	Result assessment / report / review: Assess fragrance/preservative or pigment source substitution	Approved conclusions, corrective actions, periodic trend or change-impact review of Process and stability impact.	Review	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	Medium
CTV-35-0010	Fragrance allergen declaration	Study design / protocol: Verify up-to-date IFRA/allergen dossiers where relevant	Predefined sampling, method, worst cases, limitations and acceptance rationale for Market label and safe formulation.	Planning	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	High
CTV-35-0011	Fragrance allergen declaration	Challenge / study execution: Verify up-to-date IFRA/allergen dossiers where relevant	Independent raw test data, deviations, control checks, representative conditions and Market label and safe formulation.	Execution	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	High
CTV-35-0012	Fragrance allergen declaration	Result assessment / report / review: Verify up-to-date IFRA/allergen dossiers where relevant	Approved conclusions, corrective actions, periodic trend or change-impact review of Market label and safe formulation.	Review	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	Medium
CTV-35-0013	Packaging supplier qualification	Study design / protocol: Assess component dimensional and migration risk	Predefined sampling, method, worst cases, limitations and acceptance rationale for Fit-for-use specification.	Planning	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	High
CTV-35-0014	Packaging supplier qualification	Challenge / study execution: Assess component dimensional and migration risk	Independent raw test data, deviations, control checks, representative conditions and Fit-for-use specification.	Execution	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	High
CTV-35-0015	Packaging supplier qualification	Result assessment / report / review: Assess component dimensional and migration risk	Approved conclusions, corrective actions, periodic trend or change-impact review of Fit-for-use specification.	Review	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	Medium
CTV-35-0016	External laboratory qualification	Study design / protocol: Method suitability, results traceability and accreditation relevance	Predefined sampling, method, worst cases, limitations and acceptance rationale for Reliable outsourced tests.	Planning	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-35-0017	External laboratory qualification	Challenge / study execution: Method suitability, results traceability and accreditation relevance	Independent raw test data, deviations, control checks, representative conditions and Reliable outsourced tests.	Execution	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	High
CTV-35-0018	External laboratory qualification	Result assessment / report / review: Method suitability, results traceability and accreditation relevance	Approved conclusions, corrective actions, periodic trend or change-impact review of Reliable outsourced tests.	Review	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	Medium
CTV-35-0019	Contract manufacturer technical agreement	Study design / protocol: Define responsibilities for process, changes, complaints and release	Predefined sampling, method, worst cases, limitations and acceptance rationale for Agreement evidence.	Planning	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	High
CTV-35-0020	Contract manufacturer technical agreement	Challenge / study execution: Define responsibilities for process, changes, complaints and release	Independent raw test data, deviations, control checks, representative conditions and Agreement evidence.	Execution	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	High
CTV-35-0021	Contract manufacturer technical agreement	Result assessment / report / review: Define responsibilities for process, changes, complaints and release	Approved conclusions, corrective actions, periodic trend or change-impact review of Agreement evidence.	Review	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	Medium
CTV-35-0022	Critical service provider qualification	Study design / protocol: Cleaning, pest, calibration and HVAC qualification	Predefined sampling, method, worst cases, limitations and acceptance rationale for Risk-ranked supplier surveillance.	Planning	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	High
CTV-35-0023	Critical service provider qualification	Challenge / study execution: Cleaning, pest, calibration and HVAC qualification	Independent raw test data, deviations, control checks, representative conditions and Risk-ranked supplier surveillance.	Execution	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	High
CTV-35-0024	Critical service provider qualification	Result assessment / report / review: Cleaning, pest, calibration and HVAC qualification	Approved conclusions, corrective actions, periodic trend or change-impact review of Risk-ranked supplier surveillance.	Review	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	Medium
CTV-35-0025	Supply chain counterfeit prevention	Study design / protocol: Check raw material identity, sealing and paperwork	Predefined sampling, method, worst cases, limitations and acceptance rationale for Traceability and authenticity.	Planning	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	High
CTV-35-0026	Supply chain counterfeit prevention	Challenge / study execution: Check raw material identity, sealing and paperwork	Independent raw test data, deviations, control checks, representative conditions and Traceability and authenticity.	Execution	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	High
CTV-35-0027	Supply chain counterfeit prevention	Result assessment / report / review: Check raw material identity, sealing and paperwork	Approved conclusions, corrective actions, periodic trend or change-impact review of Traceability and authenticity.	Review	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	Medium
CTV-35-0028	Purchase specification control	Study design / protocol: Version-lock specifications and approved grade	Predefined sampling, method, worst cases, limitations and acceptance rationale for No unauthorized substitution.	Planning	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	High
CTV-35-0029	Purchase specification control	Challenge / study execution: Version-lock specifications and approved grade	Independent raw test data, deviations, control checks, representative conditions and No unauthorized substitution.	Execution	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	High
CTV-35-0030	Purchase specification control	Result assessment / report / review: Version-lock specifications and approved grade	Approved conclusions, corrective actions, periodic trend or change-impact review of No unauthorized substitution.	Review	Ingredients, packaging, contract labs and toll manufacturers	C01 C02 C04 C06	Medium

36 ENGINEERING MAINTENANCE AND METROLOGY

72 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-36-0001	Preventive maintenance system	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and task schedule and overdue escalation mapped to equipment readiness.	Design	All manufacturing and utility systems	C01 C20	High
CTV-36-0002	Preventive maintenance system	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Preventive maintenance system.	Installation	All manufacturing and utility systems	C01 C20	Medium
CTV-36-0003	Preventive maintenance system	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of task schedule and overdue escalation; verify equipment readiness against predetermined product-specific criteria.	Operational	All manufacturing and utility systems	C01 C20	High
CTV-36-0004	Preventive maintenance system	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of equipment readiness.	Operational	All manufacturing and utility systems	C01 C20	High
CTV-36-0005	Preventive maintenance system	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and equipment readiness trends; number of runs justified by risk.	Performance	All manufacturing and utility systems	C01 C20	High
CTV-36-0006	Preventive maintenance system	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting equipment readiness.	Lifecycle	All manufacturing and utility systems	C01 C20	Medium
CTV-36-0007	Calibration reference pressure gauge	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and calibration standards and uncertainty mapped to pressure control reliability.	Design	All manufacturing and utility systems	C01 C20	High
CTV-36-0008	Calibration reference pressure gauge	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Calibration reference pressure gauge.	Installation	All manufacturing and utility systems	C01 C20	Medium
CTV-36-0009	Calibration reference pressure gauge	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of calibration standards and uncertainty; verify pressure control reliability against predetermined product-specific criteria.	Operational	All manufacturing and utility systems	C01 C20	High
CTV-36-0010	Calibration reference pressure gauge	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of pressure control reliability.	Operational	All manufacturing and utility systems	C01 C20	High
CTV-36-0011	Calibration reference pressure gauge	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and pressure control reliability trends; number of runs justified by risk.	Performance	All manufacturing and utility systems	C01 C20	High
CTV-36-0012	Calibration reference pressure gauge	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting pressure control reliability.	Lifecycle	All manufacturing and utility systems	C01 C20	Medium
CTV-36-0013	Temperature calibration dry block	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and uniformity and reference comparison mapped to temperature sensor accuracy.	Design	All manufacturing and utility systems	C01 C20	High
CTV-36-0014	Temperature calibration dry block	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Temperature calibration dry block.	Installation	All manufacturing and utility systems	C01 C20	Medium
CTV-36-0015	Temperature calibration dry block	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of uniformity and reference comparison; verify temperature sensor accuracy against predetermined product-specific criteria.	Operational	All manufacturing and utility systems	C01 C20	High
CTV-36-0016	Temperature calibration dry block	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of temperature sensor accuracy.	Operational	All manufacturing and utility systems	C01 C20	High
CTV-36-0017	Temperature calibration dry block	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and temperature sensor accuracy trends; number of runs justified by risk.	Performance	All manufacturing and utility systems	C01 C20	High
CTV-36-0018	Temperature calibration dry block	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting temperature sensor accuracy.	Lifecycle	All manufacturing and utility systems	C01 C20	Medium
CTV-36-0019	Portable tachometer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and RPM measurement repeatability mapped to mixing speed verification.	Design	All manufacturing and utility systems	C01 C20	High
CTV-36-0020	Portable tachometer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Portable tachometer.	Installation	All manufacturing and utility systems	C01 C20	Medium
CTV-36-0021	Portable tachometer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of RPM measurement repeatability; verify mixing speed verification against predetermined product-specific criteria.	Operational	All manufacturing and utility systems	C01 C20	High
CTV-36-0022	Portable tachometer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of mixing speed verification.	Operational	All manufacturing and utility systems	C01 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-36-0023	Portable tachometer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and mixing speed verification trends; number of runs justified by risk.	Performance	All manufacturing and utility systems	C01 C20	High
CTV-36-0024	Portable tachometer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting mixing speed verification.	Lifecycle	All manufacturing and utility systems	C01 C20	Medium
CTV-36-0025	Torque meter	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and working range and calibration mapped to cap closure torque.	Design	All manufacturing and utility systems	C01 C20	High
CTV-36-0026	Torque meter	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Torque meter.	Installation	All manufacturing and utility systems	C01 C20	Medium
CTV-36-0027	Torque meter	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of working range and calibration; verify cap closure torque against predetermined product-specific criteria.	Operational	All manufacturing and utility systems	C01 C20	High
CTV-36-0028	Torque meter	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of cap closure torque.	Operational	All manufacturing and utility systems	C01 C20	High
CTV-36-0029	Torque meter	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and cap closure torque trends; number of runs justified by risk.	Performance	All manufacturing and utility systems	C01 C20	High
CTV-36-0030	Torque meter	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting cap closure torque.	Lifecycle	All manufacturing and utility systems	C01 C20	Medium
CTV-36-0031	Pump flow meter	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and calibration range and fluid compatibility mapped to dosing/transfer accuracy.	Design	All manufacturing and utility systems	C01 C20	High
CTV-36-0032	Pump flow meter	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Pump flow meter.	Installation	All manufacturing and utility systems	C01 C20	Medium
CTV-36-0033	Pump flow meter	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of calibration range and fluid compatibility; verify dosing/transfer accuracy against predetermined product-specific criteria.	Operational	All manufacturing and utility systems	C01 C20	High
CTV-36-0034	Pump flow meter	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of dosing/transfer accuracy.	Operational	All manufacturing and utility systems	C01 C20	High
CTV-36-0035	Pump flow meter	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and dosing/transfer accuracy trends; number of runs justified by risk.	Performance	All manufacturing and utility systems	C01 C20	High
CTV-36-0036	Pump flow meter	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting dosing/transfer accuracy.	Lifecycle	All manufacturing and utility systems	C01 C20	Medium
CTV-36-0037	Differential pressure meter	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and range and zero drift mapped to filter monitoring.	Design	All manufacturing and utility systems	C01 C20	High
CTV-36-0038	Differential pressure meter	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Differential pressure meter.	Installation	All manufacturing and utility systems	C01 C20	Medium
CTV-36-0039	Differential pressure meter	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of range and zero drift; verify filter monitoring against predetermined product-specific criteria.	Operational	All manufacturing and utility systems	C01 C20	High
CTV-36-0040	Differential pressure meter	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of filter monitoring.	Operational	All manufacturing and utility systems	C01 C20	High
CTV-36-0041	Differential pressure meter	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and filter monitoring trends; number of runs justified by risk.	Performance	All manufacturing and utility systems	C01 C20	High
CTV-36-0042	Differential pressure meter	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting filter monitoring.	Lifecycle	All manufacturing and utility systems	C01 C20	Medium
CTV-36-0043	Portable conductivity tester	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and cell constant and calibration mapped to process water monitoring.	Design	All manufacturing and utility systems	C01 C20	High
CTV-36-0044	Portable conductivity tester	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Portable conductivity tester.	Installation	All manufacturing and utility systems	C01 C20	Medium
CTV-36-0045	Portable conductivity tester	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of cell constant and calibration; verify process water monitoring against predetermined product-specific criteria.	Operational	All manufacturing and utility systems	C01 C20	High
CTV-36-0046	Portable conductivity tester	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of process water monitoring.	Operational	All manufacturing and utility systems	C01 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-36-0047	Portable conductivity tester	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and process water monitoring trends; number of runs justified by risk.	Performance	All manufacturing and utility systems	C01 C20	High
CTV-36-0048	Portable conductivity tester	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting process water monitoring.	Lifecycle	All manufacturing and utility systems	C01 C20	Medium
CTV-36-0049	Metal detector reference pieces	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and challenge-piece retention and detection mapped to foreign metal control.	Design	All manufacturing and utility systems	C01 C20	High
CTV-36-0050	Metal detector reference pieces	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Metal detector reference pieces.	Installation	All manufacturing and utility systems	C01 C20	Medium
CTV-36-0051	Metal detector reference pieces	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of challenge-piece retention and detection; verify foreign metal control against predetermined product-specific criteria.	Operational	All manufacturing and utility systems	C01 C20	High
CTV-36-0052	Metal detector reference pieces	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of foreign metal control.	Operational	All manufacturing and utility systems	C01 C20	High
CTV-36-0053	Metal detector reference pieces	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and foreign metal control trends; number of runs justified by risk.	Performance	All manufacturing and utility systems	C01 C20	High
CTV-36-0054	Metal detector reference pieces	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting foreign metal control.	Lifecycle	All manufacturing and utility systems	C01 C20	Medium
CTV-36-0055	Out-of-tolerance impact assessment	Study design / protocol: Assess lot impact since last passing check	Predefined sampling, method, worst cases, limitations and acceptance rationale for Science-based release disposition.	Planning	All manufacturing and utility systems	C01 C20	High
CTV-36-0056	Out-of-tolerance impact assessment	Challenge / study execution: Assess lot impact since last passing check	Independent raw test data, deviations, control checks, representative conditions and Science-based release disposition.	Execution	All manufacturing and utility systems	C01 C20	High
CTV-36-0057	Out-of-tolerance impact assessment	Result assessment / report / review: Assess lot impact since last passing check	Approved conclusions, corrective actions, periodic trend or change-impact review of Science-based release disposition.	Review	All manufacturing and utility systems	C01 C20	Medium
CTV-36-0058	Post-repair requalification	Study design / protocol: Evaluate process-impacting parts and software updates	Predefined sampling, method, worst cases, limitations and acceptance rationale for Documented retest decision.	Planning	All manufacturing and utility systems	C01 C20	High
CTV-36-0059	Post-repair requalification	Challenge / study execution: Evaluate process-impacting parts and software updates	Independent raw test data, deviations, control checks, representative conditions and Documented retest decision.	Execution	All manufacturing and utility systems	C01 C20	High
CTV-36-0060	Post-repair requalification	Result assessment / report / review: Evaluate process-impacting parts and software updates	Approved conclusions, corrective actions, periodic trend or change-impact review of Documented retest decision.	Review	All manufacturing and utility systems	C01 C20	Medium
CTV-36-0061	Wetted parts replacement	Study design / protocol: Assess seals, lubricants, hose and gasket change	Predefined sampling, method, worst cases, limitations and acceptance rationale for Material compatibility.	Planning	All manufacturing and utility systems	C01 C20	High
CTV-36-0062	Wetted parts replacement	Challenge / study execution: Assess seals, lubricants, hose and gasket change	Independent raw test data, deviations, control checks, representative conditions and Material compatibility.	Execution	All manufacturing and utility systems	C01 C20	High
CTV-36-0063	Wetted parts replacement	Result assessment / report / review: Assess seals, lubricants, hose and gasket change	Approved conclusions, corrective actions, periodic trend or change-impact review of Material compatibility.	Review	All manufacturing and utility systems	C01 C20	Medium
CTV-36-0064	Equipment breakdown batch handling	Study design / protocol: Set maximum repair/hold and cleaning re-entry	Predefined sampling, method, worst cases, limitations and acceptance rationale for Batch release decision.	Planning	All manufacturing and utility systems	C01 C20	High
CTV-36-0065	Equipment breakdown batch handling	Challenge / study execution: Set maximum repair/hold and cleaning re-entry	Independent raw test data, deviations, control checks, representative conditions and Batch release decision.	Execution	All manufacturing and utility systems	C01 C20	High
CTV-36-0066	Equipment breakdown batch handling	Result assessment / report / review: Set maximum repair/hold and cleaning re-entry	Approved conclusions, corrective actions, periodic trend or change-impact review of Batch release decision.	Review	All manufacturing and utility systems	C01 C20	Medium
CTV-36-0067	Critical spares qualification	Study design / protocol: Identify non-OEM replacements impact	Predefined sampling, method, worst cases, limitations and acceptance rationale for Form/fit/function proof.	Planning	All manufacturing and utility systems	C01 C20	High
CTV-36-0068	Critical spares qualification	Challenge / study execution: Identify non-OEM replacements impact	Independent raw test data, deviations, control checks, representative conditions and Form/fit/function proof.	Execution	All manufacturing and utility systems	C01 C20	High
CTV-36-0069	Critical spares qualification	Result assessment / report / review: Identify non-OEM replacements impact	Approved conclusions, corrective actions, periodic trend or change-impact review of Form/fit/function proof.	Review	All manufacturing and utility systems	C01 C20	Medium
CTV-36-0070	Lifecycle spare parts status	Study design / protocol: Check obsolescence and uncontrolled substitute	Predefined sampling, method, worst cases, limitations and acceptance rationale for Validated state continuity.	Planning	All manufacturing and utility systems	C01 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-36-0071	Lifecycle spare parts status	Challenge / study execution: Check obsolescence and uncontrolled substitute	Independent raw test data, deviations, control checks, representative conditions and Validated state continuity.	Execution	All manufacturing and utility systems	C01 C20	High
CTV-36-0072	Lifecycle spare parts status	Result assessment / report / review: Check obsolescence and uncontrolled substitute	Approved conclusions, corrective actions, periodic trend or change-impact review of Validated state continuity.	Review	All manufacturing and utility systems	C01 C20	Medium

37 HR, PERSONNEL HYGIENE AND ADMINISTRATION

45 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-37-0001	Gowning laundry/wash system	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and wash temperature and segregation mapped to garment hygiene.	Design	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0002	Gowning laundry/wash system	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Gowning laundry/wash system.	Installation	All personnel in production, testing, warehousing	C01 C02	Medium
CTV-37-0003	Gowning laundry/wash system	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of wash temperature and segregation; verify garment hygiene against predetermined product-specific criteria.	Operational	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0004	Gowning laundry/wash system	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of garment hygiene.	Operational	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0005	Gowning laundry/wash system	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and garment hygiene trends; number of runs justified by risk.	Performance	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0006	Gowning laundry/wash system	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting garment hygiene.	Lifecycle	All personnel in production, testing, warehousing	C01 C02	Medium
CTV-37-0007	Handwashing and sanitizer station	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and dispense adequacy and refill control mapped to personnel hygiene.	Design	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0008	Handwashing and sanitizer station	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Handwashing and sanitizer station.	Installation	All personnel in production, testing, warehousing	C01 C02	Medium
CTV-37-0009	Handwashing and sanitizer station	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of dispense adequacy and refill control; verify personnel hygiene against predetermined product-specific criteria.	Operational	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0010	Handwashing and sanitizer station	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of personnel hygiene.	Operational	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0011	Handwashing and sanitizer station	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and personnel hygiene trends; number of runs justified by risk.	Performance	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0012	Handwashing and sanitizer station	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting personnel hygiene.	Lifecycle	All personnel in production, testing, warehousing	C01 C02	Medium
CTV-37-0013	Personnel entry access control	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and authorized area entry and emergency override mapped to controlled access.	Design	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0014	Personnel entry access control	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Personnel entry access control.	Installation	All personnel in production, testing, warehousing	C01 C02	Medium
CTV-37-0015	Personnel entry access control	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of authorized area entry and emergency override; verify controlled access against predetermined product-specific criteria.	Operational	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0016	Personnel entry access control	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of controlled access.	Operational	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0017	Personnel entry access control	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and controlled access trends; number of runs justified by risk.	Performance	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0018	Personnel entry access control	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting controlled access.	Lifecycle	All personnel in production, testing, warehousing	C01 C02	Medium
CTV-37-0019	Training / competency LMS	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and versioning, comprehension and retraining triggers mapped to personnel competence.	Design	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0020	Training / competency LMS	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Training / competency LMS.	Installation	All personnel in production, testing, warehousing	C01 C02	Medium
CTV-37-0021	Training / competency LMS	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of versioning, comprehension and retraining triggers; verify personnel competence against predetermined product-specific criteria.	Operational	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0022	Training / competency LMS	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of personnel competence.	Operational	All personnel in production, testing, warehousing	C01 C02	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-37-0023	Training / competency LMS	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and personnel competence trends; number of runs justified by risk.	Performance	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0024	Training / competency LMS	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting personnel competence.	Lifecycle	All personnel in production, testing, warehousing	C01 C02	Medium
CTV-37-0025	GMP training qualification	Study design / protocol: Demonstrate worker competence for relevant operation	Predefined sampling, method, worst cases, limitations and acceptance rationale for Approved training and observation.	Planning	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0026	GMP training qualification	Challenge / study execution: Demonstrate worker competence for relevant operation	Independent raw test data, deviations, control checks, representative conditions and Approved training and observation.	Execution	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0027	GMP training qualification	Result assessment / report / review: Demonstrate worker competence for relevant operation	Approved conclusions, corrective actions, periodic trend or change-impact review of Approved training and observation.	Review	All personnel in production, testing, warehousing	C01 C02	Medium
CTV-37-0028	Hand hygiene effectiveness	Study design / protocol: Audit handwashing practice and hygiene trend	Predefined sampling, method, worst cases, limitations and acceptance rationale for Reduced contamination risk.	Planning	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0029	Hand hygiene effectiveness	Challenge / study execution: Audit handwashing practice and hygiene trend	Independent raw test data, deviations, control checks, representative conditions and Reduced contamination risk.	Execution	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0030	Hand hygiene effectiveness	Result assessment / report / review: Audit handwashing practice and hygiene trend	Approved conclusions, corrective actions, periodic trend or change-impact review of Reduced contamination risk.	Review	All personnel in production, testing, warehousing	C01 C02	Medium
CTV-37-0031	Contractor hygiene qualification	Study design / protocol: Briefing and supervision in controlled areas	Predefined sampling, method, worst cases, limitations and acceptance rationale for Visitor/contractor records.	Planning	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0032	Contractor hygiene qualification	Challenge / study execution: Briefing and supervision in controlled areas	Independent raw test data, deviations, control checks, representative conditions and Visitor/contractor records.	Execution	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0033	Contractor hygiene qualification	Result assessment / report / review: Briefing and supervision in controlled areas	Approved conclusions, corrective actions, periodic trend or change-impact review of Visitor/contractor records.	Review	All personnel in production, testing, warehousing	C01 C02	Medium
CTV-37-0034	Personal belongings restrictions	Study design / protocol: Review changing room/production transitions	Predefined sampling, method, worst cases, limitations and acceptance rationale for Foreign material prevention.	Planning	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0035	Personal belongings restrictions	Challenge / study execution: Review changing room/production transitions	Independent raw test data, deviations, control checks, representative conditions and Foreign material prevention.	Execution	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0036	Personal belongings restrictions	Result assessment / report / review: Review changing room/production transitions	Approved conclusions, corrective actions, periodic trend or change-impact review of Foreign material prevention.	Review	All personnel in production, testing, warehousing	C01 C02	Medium
CTV-37-0037	Illness/skin condition reporting	Study design / protocol: Control illness risk for eye, baby, water-based products	Predefined sampling, method, worst cases, limitations and acceptance rationale for Hygiene escalation path.	Planning	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0038	Illness/skin condition reporting	Challenge / study execution: Control illness risk for eye, baby, water-based products	Independent raw test data, deviations, control checks, representative conditions and Hygiene escalation path.	Execution	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0039	Illness/skin condition reporting	Result assessment / report / review: Control illness risk for eye, baby, water-based products	Approved conclusions, corrective actions, periodic trend or change-impact review of Hygiene escalation path.	Review	All personnel in production, testing, warehousing	C01 C02	Medium
CTV-37-0040	Job role critical skills matrix	Study design / protocol: Define equipment release, label clearance and testing competence	Predefined sampling, method, worst cases, limitations and acceptance rationale for Approved staff authorization.	Planning	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0041	Job role critical skills matrix	Challenge / study execution: Define equipment release, label clearance and testing competence	Independent raw test data, deviations, control checks, representative conditions and Approved staff authorization.	Execution	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0042	Job role critical skills matrix	Result assessment / report / review: Define equipment release, label clearance and testing competence	Approved conclusions, corrective actions, periodic trend or change-impact review of Approved staff authorization.	Review	All personnel in production, testing, warehousing	C01 C02	Medium
CTV-37-0043	Training after deviation/change	Study design / protocol: Trace assignment of CAPA retraining	Predefined sampling, method, worst cases, limitations and acceptance rationale for Effectiveness checks.	Planning	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0044	Training after deviation/change	Challenge / study execution: Trace assignment of CAPA retraining	Independent raw test data, deviations, control checks, representative conditions and Effectiveness checks.	Execution	All personnel in production, testing, warehousing	C01 C02	High
CTV-37-0045	Training after deviation/change	Result assessment / report / review: Trace assignment of CAPA retraining	Approved conclusions, corrective actions, periodic trend or change-impact review of Effectiveness checks.	Review	All personnel in production, testing, warehousing	C01 C02	Medium

38 ENVIRONMENTAL, HEALTH AND SAFETY CONTROLS

72 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-38-0001	Flammable vapour detector	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and sensor response and alarm level mapped to solvent hazard detection.	Design	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0002	Flammable vapour detector	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Flammable vapour detector.	Installation	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium
CTV-38-0003	Flammable vapour detector	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of sensor response and alarm level; verify solvent hazard detection against predetermined product-specific criteria.	Operational	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0004	Flammable vapour detector	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of solvent hazard detection.	Operational	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0005	Flammable vapour detector	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and solvent hazard detection trends; number of runs justified by risk.	Performance	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0006	Flammable vapour detector	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting solvent hazard detection.	Lifecycle	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium
CTV-38-0007	Explosion-rated exhaust fan	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and air volume and power failure mapped to vapour control.	Design	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0008	Explosion-rated exhaust fan	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Explosion-rated exhaust fan.	Installation	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium
CTV-38-0009	Explosion-rated exhaust fan	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of air volume and power failure; verify vapour control against predetermined product-specific criteria.	Operational	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0010	Explosion-rated exhaust fan	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of vapour control.	Operational	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0011	Explosion-rated exhaust fan	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and vapour control trends; number of runs justified by risk.	Performance	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0012	Explosion-rated exhaust fan	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting vapour control.	Lifecycle	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium
CTV-38-0013	Solvent spill kit station	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and response material and accessibility mapped to spill management.	Design	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0014	Solvent spill kit station	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Solvent spill kit station.	Installation	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium
CTV-38-0015	Solvent spill kit station	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of response material and accessibility; verify spill management against predetermined product-specific criteria.	Operational	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0016	Solvent spill kit station	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of spill management.	Operational	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0017	Solvent spill kit station	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and spill management trends; number of runs justified by risk.	Performance	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0018	Solvent spill kit station	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting spill management.	Lifecycle	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium
CTV-38-0019	Drum bonding/grounding station	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and earth resistance and continuity mapped to static ignition risk.	Design	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0020	Drum bonding/grounding station	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Drum bonding/grounding station.	Installation	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium
CTV-38-0021	Drum bonding/grounding station	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of earth resistance and continuity; verify static ignition risk against predetermined product-specific criteria.	Operational	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0022	Drum bonding/grounding station	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of static ignition risk.	Operational	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-38-0023	Drum bonding/grounding station	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and static ignition risk trends; number of runs justified by risk.	Performance	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0024	Drum bonding/grounding station	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting static ignition risk.	Lifecycle	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium
CTV-38-0025	Dust extraction system	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and capture velocity and bag-filter change mapped to dust exposure control.	Design	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0026	Dust extraction system	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Dust extraction system.	Installation	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium
CTV-38-0027	Dust extraction system	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of capture velocity and bag-filter change; verify dust exposure control against predetermined product-specific criteria.	Operational	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0028	Dust extraction system	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of dust exposure control.	Operational	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0029	Dust extraction system	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and dust exposure control trends; number of runs justified by risk.	Performance	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0030	Dust extraction system	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting dust exposure control.	Lifecycle	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium
CTV-38-0031	Local exhaust at nail lacquer room	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and fume capture and ventilation mapped to worker exposure.	Design	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0032	Local exhaust at nail lacquer room	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Local exhaust at nail lacquer room.	Installation	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium
CTV-38-0033	Local exhaust at nail lacquer room	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of fume capture and ventilation; verify worker exposure against predetermined product-specific criteria.	Operational	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0034	Local exhaust at nail lacquer room	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of worker exposure.	Operational	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0035	Local exhaust at nail lacquer room	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and worker exposure trends; number of runs justified by risk.	Performance	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0036	Local exhaust at nail lacquer room	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting worker exposure.	Lifecycle	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium
CTV-38-0037	Eyewash and safety shower	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and flow and accessibility mapped to emergency readiness.	Design	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0038	Eyewash and safety shower	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Eyewash and safety shower.	Installation	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium
CTV-38-0039	Eyewash and safety shower	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of flow and accessibility; verify emergency readiness against predetermined product-specific criteria.	Operational	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0040	Eyewash and safety shower	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of emergency readiness.	Operational	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0041	Eyewash and safety shower	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and emergency readiness trends; number of runs justified by risk.	Performance	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0042	Eyewash and safety shower	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting emergency readiness.	Lifecycle	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium
CTV-38-0043	Waste solvent holding tank	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and seal, secondary containment and labelling mapped to environmental protection.	Design	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0044	Waste solvent holding tank	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Waste solvent holding tank.	Installation	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium
CTV-38-0045	Waste solvent holding tank	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of seal, secondary containment and labelling; verify environmental protection against predetermined product-specific criteria.	Operational	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0046	Waste solvent holding tank	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of environmental protection.	Operational	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-38-0047	Waste solvent holding tank	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and environmental protection trends; number of runs justified by risk.	Performance	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0048	Waste solvent holding tank	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting environmental protection.	Lifecycle	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium
CTV-38-0049	Industrial effluent pretreatment	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and pH and chemical discharge control mapped to effluent safety.	Design	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0050	Industrial effluent pretreatment	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Industrial effluent pretreatment.	Installation	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium
CTV-38-0051	Industrial effluent pretreatment	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of pH and chemical discharge control; verify effluent safety against predetermined product-specific criteria.	Operational	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0052	Industrial effluent pretreatment	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of effluent safety.	Operational	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0053	Industrial effluent pretreatment	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and effluent safety trends; number of runs justified by risk.	Performance	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0054	Industrial effluent pretreatment	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting effluent safety.	Lifecycle	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium
CTV-38-0055	HAZOP / process hazard review	Study design / protocol: Assess hot oil, corrosives, solvents, compressed gas and powders	Predefined sampling, method, worst cases, limitations and acceptance rationale for Risk controls.	Planning	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0056	HAZOP / process hazard review	Challenge / study execution: Assess hot oil, corrosives, solvents, compressed gas and powders	Independent raw test data, deviations, control checks, representative conditions and Risk controls.	Execution	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0057	HAZOP / process hazard review	Result assessment / report / review: Assess hot oil, corrosives, solvents, compressed gas and powders	Approved conclusions, corrective actions, periodic trend or change-impact review of Risk controls.	Review	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium
CTV-38-0058	Combustible dust assessment	Study design / protocol: Identify explosible powder scenarios and dust zones	Predefined sampling, method, worst cases, limitations and acceptance rationale for Hazard assessment.	Planning	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0059	Combustible dust assessment	Challenge / study execution: Identify explosible powder scenarios and dust zones	Independent raw test data, deviations, control checks, representative conditions and Hazard assessment.	Execution	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0060	Combustible dust assessment	Result assessment / report / review: Identify explosible powder scenarios and dust zones	Approved conclusions, corrective actions, periodic trend or change-impact review of Hazard assessment.	Review	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium
CTV-38-0061	Chemical compatibility review	Study design / protocol: Assess sanitizer with acid/alkali and alcohol	Predefined sampling, method, worst cases, limitations and acceptance rationale for Safe storage.	Planning	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0062	Chemical compatibility review	Challenge / study execution: Assess sanitizer with acid/alkali and alcohol	Independent raw test data, deviations, control checks, representative conditions and Safe storage.	Execution	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0063	Chemical compatibility review	Result assessment / report / review: Assess sanitizer with acid/alkali and alcohol	Approved conclusions, corrective actions, periodic trend or change-impact review of Safe storage.	Review	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium
CTV-38-0064	Fire response drill verification	Study design / protocol: Test evacuation and utility shutdown	Predefined sampling, method, worst cases, limitations and acceptance rationale for Emergency readiness.	Planning	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0065	Fire response drill verification	Challenge / study execution: Test evacuation and utility shutdown	Independent raw test data, deviations, control checks, representative conditions and Emergency readiness.	Execution	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0066	Fire response drill verification	Result assessment / report / review: Test evacuation and utility shutdown	Approved conclusions, corrective actions, periodic trend or change-impact review of Emergency readiness.	Review	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium
CTV-38-0067	Waste segregation and destruction	Study design / protocol: Control rejected/expired cosmetics and solvents	Predefined sampling, method, worst cases, limitations and acceptance rationale for No diversion/contamination.	Planning	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0068	Waste segregation and destruction	Challenge / study execution: Control rejected/expired cosmetics and solvents	Independent raw test data, deviations, control checks, representative conditions and No diversion/contamination.	Execution	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0069	Waste segregation and destruction	Result assessment / report / review: Control rejected/expired cosmetics and solvents	Approved conclusions, corrective actions, periodic trend or change-impact review of No diversion/contamination.	Review	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium
CTV-38-0070	Noise, heat and ergonomic exposure	Study design / protocol: Assess high-shear, compressors and repetitive manual fill	Predefined sampling, method, worst cases, limitations and acceptance rationale for EHS improvement plan.	Planning	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-38-0071	Noise, heat and ergonomic exposure	Challenge / study execution: Assess high-shear, compressors and repetitive manual fill	Independent raw test data, deviations, control checks, representative conditions and EHS improvement plan.	Execution	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	High
CTV-38-0072	Noise, heat and ergonomic exposure	Result assessment / report / review: Assess high-shear, compressors and repetitive manual fill	Approved conclusions, corrective actions, periodic trend or change-impact review of EHS improvement plan.	Review	Solvents, alcohol, powders, hot surfaces and waste	C01 C15 C20	Medium

39 CAPA, CHANGE, COMPLAINTS AND RECALL EFFECTIVENESS

30 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-39-0001	Deviation investigation	Study design / protocol: Apply causal analysis for rejected batch or QC result	Predefined sampling, method, worst cases, limitations and acceptance rationale for Root-cause effectiveness.	Planning	Whole product lifecycle	C01 C02 C04 C06	High
CTV-39-0002	Deviation investigation	Challenge / study execution: Apply causal analysis for rejected batch or QC result	Independent raw test data, deviations, control checks, representative conditions and Root-cause effectiveness.	Execution	Whole product lifecycle	C01 C02 C04 C06	High
CTV-39-0003	Deviation investigation	Result assessment / report / review: Apply causal analysis for rejected batch or QC result	Approved conclusions, corrective actions, periodic trend or change-impact review of Root-cause effectiveness.	Review	Whole product lifecycle	C01 C02 C04 C06	Medium
CTV-39-0004	CAPA effectiveness	Study design / protocol: Measure improvement beyond training alone	Predefined sampling, method, worst cases, limitations and acceptance rationale for Predefined effectiveness checks.	Planning	Whole product lifecycle	C01 C02 C04 C06	High
CTV-39-0005	CAPA effectiveness	Challenge / study execution: Measure improvement beyond training alone	Independent raw test data, deviations, control checks, representative conditions and Predefined effectiveness checks.	Execution	Whole product lifecycle	C01 C02 C04 C06	High
CTV-39-0006	CAPA effectiveness	Result assessment / report / review: Measure improvement beyond training alone	Approved conclusions, corrective actions, periodic trend or change-impact review of Predefined effectiveness checks.	Review	Whole product lifecycle	C01 C02 C04 C06	Medium
CTV-39-0007	Out-of-specification analytical result	Study design / protocol: Rule out lab error without invalid retest	Predefined sampling, method, worst cases, limitations and acceptance rationale for Sound sample disposition.	Planning	Whole product lifecycle	C01 C02 C04 C06	High
CTV-39-0008	Out-of-specification analytical result	Challenge / study execution: Rule out lab error without invalid retest	Independent raw test data, deviations, control checks, representative conditions and Sound sample disposition.	Execution	Whole product lifecycle	C01 C02 C04 C06	High
CTV-39-0009	Out-of-specification analytical result	Result assessment / report / review: Rule out lab error without invalid retest	Approved conclusions, corrective actions, periodic trend or change-impact review of Sound sample disposition.	Review	Whole product lifecycle	C01 C02 C04 C06	Medium
CTV-39-0010	Out-of-trend stability issue	Study design / protocol: Investigate drift before failure	Predefined sampling, method, worst cases, limitations and acceptance rationale for Trend and escalation.	Planning	Whole product lifecycle	C01 C02 C04 C06	High
CTV-39-0011	Out-of-trend stability issue	Challenge / study execution: Investigate drift before failure	Independent raw test data, deviations, control checks, representative conditions and Trend and escalation.	Execution	Whole product lifecycle	C01 C02 C04 C06	High
CTV-39-0012	Out-of-trend stability issue	Result assessment / report / review: Investigate drift before failure	Approved conclusions, corrective actions, periodic trend or change-impact review of Trend and escalation.	Review	Whole product lifecycle	C01 C02 C04 C06	Medium
CTV-39-0013	Change control impact	Study design / protocol: Map raw material, preservative, package, equipment and label changes	Predefined sampling, method, worst cases, limitations and acceptance rationale for Risk and study retrigger.	Planning	Whole product lifecycle	C01 C02 C04 C06	High
CTV-39-0014	Change control impact	Challenge / study execution: Map raw material, preservative, package, equipment and label changes	Independent raw test data, deviations, control checks, representative conditions and Risk and study retrigger.	Execution	Whole product lifecycle	C01 C02 C04 C06	High
CTV-39-0015	Change control impact	Result assessment / report / review: Map raw material, preservative, package, equipment and label changes	Approved conclusions, corrective actions, periodic trend or change-impact review of Risk and study retrigger.	Review	Whole product lifecycle	C01 C02 C04 C06	Medium
CTV-39-0016	Consumer complaint investigation	Study design / protocol: Test retention sample or representative market lot	Predefined sampling, method, worst cases, limitations and acceptance rationale for Complaint-to-CAPA trace.	Planning	Whole product lifecycle	C01 C02 C04 C06	High
CTV-39-0017	Consumer complaint investigation	Challenge / study execution: Test retention sample or representative market lot	Independent raw test data, deviations, control checks, representative conditions and Complaint-to-CAPA trace.	Execution	Whole product lifecycle	C01 C02 C04 C06	High
CTV-39-0018	Consumer complaint investigation	Result assessment / report / review: Test retention sample or representative market lot	Approved conclusions, corrective actions, periodic trend or change-impact review of Complaint-to-CAPA trace.	Review	Whole product lifecycle	C01 C02 C04 C06	Medium
CTV-39-0019	Product recall simulation	Study design / protocol: Verify ability to locate every sold lot	Predefined sampling, method, worst cases, limitations and acceptance rationale for Retrieval effectiveness.	Planning	Whole product lifecycle	C01 C02 C04 C06	High
CTV-39-0020	Product recall simulation	Challenge / study execution: Verify ability to locate every sold lot	Independent raw test data, deviations, control checks, representative conditions and Retrieval effectiveness.	Execution	Whole product lifecycle	C01 C02 C04 C06	High
CTV-39-0021	Product recall simulation	Result assessment / report / review: Verify ability to locate every sold lot	Approved conclusions, corrective actions, periodic trend or change-impact review of Retrieval effectiveness.	Review	Whole product lifecycle	C01 C02 C04 C06	Medium
CTV-39-0022	Adverse event escalation	Study design / protocol: Identify serious adverse event reporting obligation where applicable	Predefined sampling, method, worst cases, limitations and acceptance rationale for Timely regulatory management.	Planning	Whole product lifecycle	C01 C02 C04 C06	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-39-0023	Adverse event escalation	Challenge / study execution: Identify serious adverse event reporting obligation where applicable	Independent raw test data, deviations, control checks, representative conditions and Timely regulatory management.	Execution	Whole product lifecycle	C01 C02 C04 C06	High
CTV-39-0024	Adverse event escalation	Result assessment / report / review: Identify serious adverse event reporting obligation where applicable	Approved conclusions, corrective actions, periodic trend or change-impact review of Timely regulatory management.	Review	Whole product lifecycle	C01 C02 C04 C06	Medium
CTV-39-0025	Customer-return sampling	Study design / protocol: Evaluate returned pack integrity and temperature history	Predefined sampling, method, worst cases, limitations and acceptance rationale for Recall/quality assessment.	Planning	Whole product lifecycle	C01 C02 C04 C06	High
CTV-39-0026	Customer-return sampling	Challenge / study execution: Evaluate returned pack integrity and temperature history	Independent raw test data, deviations, control checks, representative conditions and Recall/quality assessment.	Execution	Whole product lifecycle	C01 C02 C04 C06	High
CTV-39-0027	Customer-return sampling	Result assessment / report / review: Evaluate returned pack integrity and temperature history	Approved conclusions, corrective actions, periodic trend or change-impact review of Recall/quality assessment.	Review	Whole product lifecycle	C01 C02 C04 C06	Medium
CTV-39-0028	Management review of validation KPI	Study design / protocol: Review deviations, completion and recurring changes	Predefined sampling, method, worst cases, limitations and acceptance rationale for Quality system improvement.	Planning	Whole product lifecycle	C01 C02 C04 C06	High
CTV-39-0029	Management review of validation KPI	Challenge / study execution: Review deviations, completion and recurring changes	Independent raw test data, deviations, control checks, representative conditions and Quality system improvement.	Execution	Whole product lifecycle	C01 C02 C04 C06	High
CTV-39-0030	Management review of validation KPI	Result assessment / report / review: Review deviations, completion and recurring changes	Approved conclusions, corrective actions, periodic trend or change-impact review of Quality system improvement.	Review	Whole product lifecycle	C01 C02 C04 C06	Medium

40 SPECIAL POPULATION, HIGH-RISK AND CLAIMS-SPECIFIC CONTROLS

60 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-40-0001	Mascara applicator assembly station	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and brush/mascara pack contamination mapped to eye product safety.	Design	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0002	Mascara applicator assembly station	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Mascara applicator assembly station.	Installation	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	Medium
CTV-40-0003	Mascara applicator assembly station	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of brush/mascara pack contamination; verify eye product safety against predetermined product-specific criteria.	Operational	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0004	Mascara applicator assembly station	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of eye product safety.	Operational	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0005	Mascara applicator assembly station	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and eye product safety trends; number of runs justified by risk.	Performance	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0006	Mascara applicator assembly station	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting eye product safety.	Lifecycle	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	Medium
CTV-40-0007	Baby lotion controlled packing station	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and environmental monitoring for open batch mapped to child product micro quality.	Design	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0008	Baby lotion controlled packing station	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Baby lotion controlled packing station.	Installation	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	Medium
CTV-40-0009	Baby lotion controlled packing station	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of environmental monitoring for open batch; verify child product micro quality against predetermined product-specific criteria.	Operational	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0010	Baby lotion controlled packing station	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of child product micro quality.	Operational	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0011	Baby lotion controlled packing station	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and child product micro quality trends; number of runs justified by risk.	Performance	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0012	Baby lotion controlled packing station	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting child product micro quality.	Lifecycle	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	Medium
CTV-40-0013	Low-preservative gel filling station	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and exposure time and hygiene mapped to in-use microbial safety.	Design	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0014	Low-preservative gel filling station	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Low-preservative gel filling station.	Installation	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	Medium
CTV-40-0015	Low-preservative gel filling station	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of exposure time and hygiene; verify in-use microbial safety against predetermined product-specific criteria.	Operational	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0016	Low-preservative gel filling station	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of in-use microbial safety.	Operational	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-40-0017	Low-preservative gel filling station	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and in-use microbial safety trends; number of runs justified by risk.	Performance	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0018	Low-preservative gel filling station	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting in-use microbial safety.	Lifecycle	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	Medium
CTV-40-0019	Intimate-care product mixer	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and pH and preservative controls mapped to mucosal suitability.	Design	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0020	Intimate-care product mixer	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Intimate-care product mixer.	Installation	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	Medium
CTV-40-0021	Intimate-care product mixer	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of pH and preservative controls; verify mucosal suitability against predetermined product-specific criteria.	Operational	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0022	Intimate-care product mixer	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of mucosal suitability.	Operational	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0023	Intimate-care product mixer	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and mucosal suitability trends; number of runs justified by risk.	Performance	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0024	Intimate-care product mixer	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting mucosal suitability.	Lifecycle	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	Medium
CTV-40-0025	Airless pump assembly	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and air ingress, priming and seal integrity mapped to preservative-free pack protection.	Design	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0026	Airless pump assembly	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Airless pump assembly.	Installation	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	Medium
CTV-40-0027	Airless pump assembly	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of air ingress, priming and seal integrity; verify preservative-free pack protection against predetermined product-specific criteria.	Operational	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0028	Airless pump assembly	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of preservative-free pack protection.	Operational	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0029	Airless pump assembly	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and preservative-free pack protection trends; number of runs justified by risk.	Performance	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0030	Airless pump assembly	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting preservative-free pack protection.	Lifecycle	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	Medium
CTV-40-0031	Water-based eye cosmetic PET	Study design / protocol: Tailor antimicrobial challenge to eye use risk	Predefined sampling, method, worst cases, limitations and acceptance rationale for Evidence of product protection.	Planning	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0032	Water-based eye cosmetic PET	Challenge / study execution: Tailor antimicrobial challenge to eye use risk	Independent raw test data, deviations, control checks, representative conditions and Evidence of product protection.	Execution	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0033	Water-based eye cosmetic PET	Result assessment / report / review: Tailor antimicrobial challenge to eye use risk	Approved conclusions, corrective actions, periodic trend or change-impact review of Evidence of product protection.	Review	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	Medium
CTV-40-0034	Preservative-free/airless pack claim	Study design / protocol: Establish microbial protection through system design	Predefined sampling, method, worst cases, limitations and acceptance rationale for In-use protection and pack suitability.	Planning	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-40-0035	Preservative-free/airless pack claim	Challenge / study execution: Establish microbial protection through system design	Independent raw test data, deviations, control checks, representative conditions and In-use protection and pack suitability.	Execution	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0036	Preservative-free/airless pack claim	Result assessment / report / review: Establish microbial protection through system design	Approved conclusions, corrective actions, periodic trend or change-impact review of In-use protection and pack suitability.	Review	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	Medium
CTV-40-0037	Baby and child product exposure	Study design / protocol: Assess body weight and foreseeable ingestion/skin exposure	Predefined sampling, method, worst cases, limitations and acceptance rationale for Safety report rationale.	Planning	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0038	Baby and child product exposure	Challenge / study execution: Assess body weight and foreseeable ingestion/skin exposure	Independent raw test data, deviations, control checks, representative conditions and Safety report rationale.	Execution	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0039	Baby and child product exposure	Result assessment / report / review: Assess body weight and foreseeable ingestion/skin exposure	Approved conclusions, corrective actions, periodic trend or change-impact review of Safety report rationale.	Review	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	Medium
CTV-40-0040	Mucosal contact formulation	Study design / protocol: Assess pH, irritation, preservative and appropriate exposure	Predefined sampling, method, worst cases, limitations and acceptance rationale for Relevant safety substantiation.	Planning	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0041	Mucosal contact formulation	Challenge / study execution: Assess pH, irritation, preservative and appropriate exposure	Independent raw test data, deviations, control checks, representative conditions and Relevant safety substantiation.	Execution	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0042	Mucosal contact formulation	Result assessment / report / review: Assess pH, irritation, preservative and appropriate exposure	Approved conclusions, corrective actions, periodic trend or change-impact review of Relevant safety substantiation.	Review	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	Medium
CTV-40-0043	Sunscreen / SPF classification	Study design / protocol: Screen each market for drug/therapeutic rules before cosmetic testing	Predefined sampling, method, worst cases, limitations and acceptance rationale for Correct legal framework.	Planning	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0044	Sunscreen / SPF classification	Challenge / study execution: Screen each market for drug/therapeutic rules before cosmetic testing	Independent raw test data, deviations, control checks, representative conditions and Correct legal framework.	Execution	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0045	Sunscreen / SPF classification	Result assessment / report / review: Screen each market for drug/therapeutic rules before cosmetic testing	Approved conclusions, corrective actions, periodic trend or change-impact review of Correct legal framework.	Review	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	Medium
CTV-40-0046	Active ingredient sensitivity	Study design / protocol: Evaluate retinoids, acids, essential oils and fragrance limits	Predefined sampling, method, worst cases, limitations and acceptance rationale for Market-specific safety.	Planning	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0047	Active ingredient sensitivity	Challenge / study execution: Evaluate retinoids, acids, essential oils and fragrance limits	Independent raw test data, deviations, control checks, representative conditions and Market-specific safety.	Execution	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0048	Active ingredient sensitivity	Result assessment / report / review: Evaluate retinoids, acids, essential oils and fragrance limits	Approved conclusions, corrective actions, periodic trend or change-impact review of Market-specific safety.	Review	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	Medium
CTV-40-0049	Low-water-activity product classification	Study design / protocol: Assess microbiology low-risk claim under ISO 29621	Predefined sampling, method, worst cases, limitations and acceptance rationale for Documented exemption rationale.	Planning	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0050	Low-water-activity product classification	Challenge / study execution: Assess microbiology low-risk claim under ISO 29621	Independent raw test data, deviations, control checks, representative conditions and Documented exemption rationale.	Execution	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0051	Low-water-activity product classification	Result assessment / report / review: Assess microbiology low-risk claim under ISO 29621	Approved conclusions, corrective actions, periodic trend or change-impact review of Documented exemption rationale.	Review	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	Medium
CTV-40-0052	Nanomaterial ingredient review	Study design / protocol: Check dossier, notification, exposure and labeling where relevant	Predefined sampling, method, worst cases, limitations and acceptance rationale for Legal safety assessment.	Planning	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-40-0053	Nanomaterial ingredient review	Challenge / study execution: Check dossier, notification, exposure and labeling where relevant	Independent raw test data, deviations, control checks, representative conditions and Legal safety assessment.	Execution	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0054	Nanomaterial ingredient review	Result assessment / report / review: Check dossier, notification, exposure and labeling where relevant	Approved conclusions, corrective actions, periodic trend or change-impact review of Legal safety assessment.	Review	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	Medium
CTV-40-0055	Microbiome-friendly claim	Study design / protocol: Require defensible reproducible endpoints	Predefined sampling, method, worst cases, limitations and acceptance rationale for Claim evidence.	Planning	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0056	Microbiome-friendly claim	Challenge / study execution: Require defensible reproducible endpoints	Independent raw test data, deviations, control checks, representative conditions and Claim evidence.	Execution	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0057	Microbiome-friendly claim	Result assessment / report / review: Require defensible reproducible endpoints	Approved conclusions, corrective actions, periodic trend or change-impact review of Claim evidence.	Review	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	Medium
CTV-40-0058	Vegan/cruelty-free claims	Study design / protocol: Verify sourcing and market legal constraints	Predefined sampling, method, worst cases, limitations and acceptance rationale for Traceable claim proof.	Planning	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0059	Vegan/cruelty-free claims	Challenge / study execution: Verify sourcing and market legal constraints	Independent raw test data, deviations, control checks, representative conditions and Traceable claim proof.	Execution	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	High
CTV-40-0060	Vegan/cruelty-free claims	Result assessment / report / review: Verify sourcing and market legal constraints	Approved conclusions, corrective actions, periodic trend or change-impact review of Traceable claim proof.	Review	Baby, eye, mucosal, low-preservative and sunscreen-borderline	C04 C06 C08 C09 C10 C16 C22	Medium

41 CONTRACT MANUFACTURE, TECHNOLOGY TRANSFER AND HANDOVER

45 controlled validation/qualification checkpoints | Each row requires site risk screening, approved protocol, evidence and QA disposition.

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-41-0001	Factory acceptance test station	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and critical machine function against URS mapped to FAT evidence.	Design	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0002	Factory acceptance test station	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Factory acceptance test station.	Installation	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	Medium
CTV-41-0003	Factory acceptance test station	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of critical machine function against URS; verify FAT evidence against predetermined product-specific criteria.	Operational	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0004	Factory acceptance test station	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of FAT evidence.	Operational	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0005	Factory acceptance test station	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and FAT evidence trends; number of runs justified by risk.	Performance	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0006	Factory acceptance test station	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting FAT evidence.	Lifecycle	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	Medium
CTV-41-0007	Site commissioning loop	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and utilities and machine interfaces mapped to site readiness.	Design	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0008	Site commissioning loop	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Site commissioning loop.	Installation	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	Medium
CTV-41-0009	Site commissioning loop	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of utilities and machine interfaces; verify site readiness against predetermined product-specific criteria.	Operational	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0010	Site commissioning loop	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of site readiness.	Operational	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0011	Site commissioning loop	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and site readiness trends; number of runs justified by risk.	Performance	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0012	Site commissioning loop	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting site readiness.	Lifecycle	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	Medium
CTV-41-0013	Pilot batch production line	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and representative batch performance mapped to transfer equivalence.	Design	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0014	Pilot batch production line	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for Pilot batch production line.	Installation	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	Medium
CTV-41-0015	Pilot batch production line	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of representative batch performance; verify transfer equivalence against predetermined product-specific criteria.	Operational	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0016	Pilot batch production line	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of transfer equivalence.	Operational	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-41-0017	Pilot batch production line	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and transfer equivalence trends; number of runs justified by risk.	Performance	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0018	Pilot batch production line	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting transfer equivalence.	Lifecycle	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	Medium
CTV-41-0019	New line cleaning changeover	URS and hygienic design suitability: define intended use and quality-impact characteristics	URS, risk/criticality rationale, capacity, materials of construction and product family cleaning design mapped to residue control.	Design	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0020	New line cleaning changeover	IQ: verify installation, surface finish, product-contact seals and utility interfaces	Equipment tag, as-built drawing, critical contacts, calibration, manuals, asset register, drainability and utilities for New line cleaning changeover.	Installation	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	Medium
CTV-41-0021	New line cleaning changeover	OQ: challenge low, nominal and upper justified operating boundaries	Approved boundary tests of product family cleaning design; verify residue control against predetermined product-specific criteria.	Operational	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0022	New line cleaning changeover	OQ: assess alarms, operator errors, control faults, power loss and safe recovery	Interlock/fault challenge and recovery evidence show adequate control of residue control.	Operational	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0023	New line cleaning changeover	PQ / performance verification on representative product or worst-case load	Reproducibility, operator/load/lot challenge matrix, in-process results and residue control trends; number of runs justified by risk.	Performance	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0024	New line cleaning changeover	Cleaning, maintenance and periodic requalification impact assessment	Identify product residue, maintenance/calibration impact, inspection points and triggers affecting residue control.	Lifecycle	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	Medium
CTV-41-0025	FAT-SAT-to-IQ traceability	Study design / protocol: Determine what supplier tests can be leveraged	Predefined sampling, method, worst cases, limitations and acceptance rationale for Bridging evidence for acceptance.	Planning	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0026	FAT-SAT-to-IQ traceability	Challenge / study execution: Determine what supplier tests can be leveraged	Independent raw test data, deviations, control checks, representative conditions and Bridging evidence for acceptance.	Execution	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0027	FAT-SAT-to-IQ traceability	Result assessment / report / review: Determine what supplier tests can be leveraged	Approved conclusions, corrective actions, periodic trend or change-impact review of Bridging evidence for acceptance.	Review	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	Medium
CTV-41-0028	Facility qualification handover	Study design / protocol: Reconcile drawings, calibration, SOP and PM records	Predefined sampling, method, worst cases, limitations and acceptance rationale for Validation readiness.	Planning	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0029	Facility qualification handover	Challenge / study execution: Reconcile drawings, calibration, SOP and PM records	Independent raw test data, deviations, control checks, representative conditions and Validation readiness.	Execution	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0030	Facility qualification handover	Result assessment / report / review: Reconcile drawings, calibration, SOP and PM records	Approved conclusions, corrective actions, periodic trend or change-impact review of Validation readiness.	Review	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	Medium
CTV-41-0031	Line transfer comparative batch	Study design / protocol: Compare legacy and new site CQAs	Predefined sampling, method, worst cases, limitations and acceptance rationale for Equivalent product quality.	Planning	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0032	Line transfer comparative batch	Challenge / study execution: Compare legacy and new site CQAs	Independent raw test data, deviations, control checks, representative conditions and Equivalent product quality.	Execution	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0033	Line transfer comparative batch	Result assessment / report / review: Compare legacy and new site CQAs	Approved conclusions, corrective actions, periodic trend or change-impact review of Equivalent product quality.	Review	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	Medium
CTV-41-0034	Contract packaging validation matrix	Study design / protocol: Assess machines / packs / variants at contract site	Predefined sampling, method, worst cases, limitations and acceptance rationale for Coverage justification.	Planning	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High

CHECK ID	ASSET / PROCESS	MICRO-LEVEL CHECKPOINT	EVIDENCE / ACCEPTANCE FOCUS	STAGE	SCOPE	STANDARDS	RISK
CTV-41-0035	Contract packaging validation matrix	Challenge / study execution: Assess machines / packs / variants at contract site	Independent raw test data, deviations, control checks, representative conditions and Coverage justification.	Execution	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0036	Contract packaging validation matrix	Result assessment / report / review: Assess machines / packs / variants at contract site	Approved conclusions, corrective actions, periodic trend or change-impact review of Coverage justification.	Review	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	Medium
CTV-41-0037	Third-party cleaning qualification	Study design / protocol: Allocate evidence between brand owner and toll manufacturer	Predefined sampling, method, worst cases, limitations and acceptance rationale for Documented split responsibilities.	Planning	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0038	Third-party cleaning qualification	Challenge / study execution: Allocate evidence between brand owner and toll manufacturer	Independent raw test data, deviations, control checks, representative conditions and Documented split responsibilities.	Execution	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0039	Third-party cleaning qualification	Result assessment / report / review: Allocate evidence between brand owner and toll manufacturer	Approved conclusions, corrective actions, periodic trend or change-impact review of Documented split responsibilities.	Review	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	Medium
CTV-41-0040	Regulatory manufacturing site change	Study design / protocol: Update export dossiers/notification when needed	Predefined sampling, method, worst cases, limitations and acceptance rationale for Approved market change decision.	Planning	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0041	Regulatory manufacturing site change	Challenge / study execution: Update export dossiers/notification when needed	Independent raw test data, deviations, control checks, representative conditions and Approved market change decision.	Execution	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0042	Regulatory manufacturing site change	Result assessment / report / review: Update export dossiers/notification when needed	Approved conclusions, corrective actions, periodic trend or change-impact review of Approved market change decision.	Review	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	Medium
CTV-41-0043	Post-transfer continued monitoring	Study design / protocol: Trend first months of new line output	Predefined sampling, method, worst cases, limitations and acceptance rationale for Stable commercial execution.	Planning	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0044	Post-transfer continued monitoring	Challenge / study execution: Trend first months of new line output	Independent raw test data, deviations, control checks, representative conditions and Stable commercial execution.	Execution	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	High
CTV-41-0045	Post-transfer continued monitoring	Result assessment / report / review: Trend first months of new line output	Approved conclusions, corrective actions, periodic trend or change-impact review of Stable commercial execution.	Review	Greenfield, expansion, toll manufacture and line transfer	C01 C02 C04 C20	Medium

ISHA'S GMP TURNKEY CONSULTANCY EUROPE LIMITED

IRELAND / EUROPE | GLOBAL COSMETICS GMP & VALIDATION SERVICES

IRELAND CONTACT OFFICE

3 Graydon Green, Newcastle, Dublin, D22 Y9V9, Ireland

Telephone: +353 89 989 1842

Email: info@ishasgmpeu.ie

Website: www.ishasgmpeu.ie

SPECIALIST SERVICES

Global cosmetics GMP and validation consultancy: hygienic facility design, equipment and utility qualification, cosmetic manufacturing process verification, emulsion and surfactant process studies, cleaning and sanitation, microbiological quality and preservative efficacy, cosmetic formulation development and technology transfer, stability and packaging compatibility, QC method suitability, safety dossier support, EU/GB PIF and Indian cosmetics licensing support, supplier assurance, audits, staff training and turnkey cosmetics projects.

INDIA + IRELAND | ENSURING GLOBAL GMP COMPLIANCE

This catalog is a screening reference, not site qualification evidence or a certification/accreditation claim.