

TECHBRIEF

**Critical Cleaning
for Cosmetics**





EXECUTIVE SUMMARY

Products in cosmetics, and related industries like tattoo and piercing are designed to adhere to skin, hair, and other biologic surfaces. That same adherence makes cleaning equipment composed of metals, plastic, glass, etc. a significant challenge. Alconox, LLC provides residue-free, aqueous detergents and application support that align with U.S., Canadian, and EU quality expectations and regulations so you can protect clients, product quality, and brand reputation.

REGULATORY & GUIDANCE LANDSCAPE



United States

- **FDA – MoCRA (2022)**: modernizes cosmetics oversight; FDA is establishing GMP requirements for cosmetics. Expect documented cleaning that prevents cross-contamination and ensures product quality.
- **ISO 22716 (Cosmetics GMP)**: widely followed in the U.S. to demonstrate GMP for cosmetics manufacturing (clean, controlled equipment; documented procedures, training, records).
- **OSHA 29 CFR 1910.1030 (Bloodborne Pathogens)**: tattoo/piercing operations must clean and decontaminate surfaces and equipment with written procedures and training.
- **CDC infection-control guidance**: cleaning before disinfection/sterilization to remove soils that shield microbes.



Canada

- **Health Canada – Cosmetic Regulations (Food & Drugs Act)**: require safe manufacture and handling; adoption of ISO 22716 is recognized best practice for GMP in cosmetics.
- Provincial/territorial public-health bylaws for personal services (tattoo & piercing) require written cleaning and reprocessing procedures, staff training, and records.



European Union

- **EU Cosmetics Regulation (EC) No 1223/2009 + ISO 22716**: mandate GMP for cosmetics; equipment must be designed and kept clean to avoid contamination.
- Member-state public-health rules for body-art emphasize validated cleaning prior to disinfection/sterilization.

Across regions, inspectors expect documented, residue-free cleaning of manufacturing and service equipment using methods that do not leave interfering residues.

CLEANING CHALLENGES WE SOLVE

Typical soils across cosmetics manufacturing and tattoo/piercing studios include:

- **Organics:** oils, waxes, butters, serums, silicones; dye-penetrant carriers; lubricants
- **Inorganics:** TiO₂ / ZnO pigments, mineral fillers, aluminum/chloride deodorant salts; metal oxides/rouge
- **Aromatics & colorants:** persistent fragrances, dyes, pigments that cause cross-over/cross-contamination

These residues are adherent, water-resistant, and film-forming. Incorrect chemistry or residual detergent compromises product effectiveness, stability, purity, aesthetics, irritancy profiles, and instrument sterilization.

ALCONOX, LLC APPROACH (Residue-Free, Aqueous)

Cleaning Need	Typical Soils & Use Case	Recommended Detergent	How to Use / Why it Works
Manual/Ultrasonic – Heavy organics	Oils, waxes, silicones on labware, small parts, applicators	Detonox® Ultimate Precision Cleaner (manual powerhouse) or Liquinox® Critical Cleaning Liquid Detergent (phosphate-free)	2–5% hot (70–80 °C) for waxes/silicones; high-emulsifying, free-rinsing; no scents/dyes/softeners
Manual – Inorganics/Scale	Salts, metal oxides, rouge; deodorant residues	Citranox® Liquid Acid Cleaner and Detergent (acidic)	1–3% warm; chelation + surfactants; brightens metals; residue-free
Automated/CIP – High load organics	Tanks, mixers, parts washers	Solujet® Low-Foaming Phosphate-Free Liquid (low-foam alkaline)	3–5% hot; low foam for spray-in-air; excellent for creams/lotions
Automated/CIP – TiO₂ / ZnO pigments	Sunscreens, color cosmetics, pearlescent compounds	Keylajet® Low-Foaming High Alkaline Liquid (low-foam, high alkalinity & chelation)	3–5%; breaks pigment films without high temp, robust chelation
Automated/CIP – High-emulsifying need in cosmetics	Very tenacious organics; fragrance-rich runs	Halojet® Low-Foam, High Emulsification Cleaner (low-foaming, high-emulsifying)	3% typical (range 2–5%); superior emulsification for stubborn creams, butters, oils; non-hazmat shipping benefit
Automated – Stubborn fragrances/dyes	Perfumed or colored runs	Detojet® Low-Foaming Liquid Detergent (low-foam; dye removal) or Citrajet® Low-Foaming Liquid Acid Cleaner (acid rinse)	1–3% each; removes odor/color while remaining residue-free
Tattoo/Piercing pre-disinfection/sterilization	Blood/protein soils, oils	Tergazyme® Enzyme-Active Powdered Detergent (manual enzymatic, where allowed)	1–3% warm (≤55 °C); protease + surfactants for protein films; rinse thoroughly before pre-disinfection/sterilization



GENERAL STARTING POINTS

- **Manual/ultrasonic:** 1–2% routine; 2–5% for tenacious residues.
- **CIP/washer:** 3–5% typical (Halojet detergent 3% recommended for high-emulsifying cosmetic residues).
- **Temperature:** hot (70–80 °C/160–180 °F) for waxes/silicones; **ambient** temperature for TiO₂/ZnO (titanium dioxide, zinc oxide) to avoid metallic salt formation unless using Keylajet detergent, which generally can clean these residues regardless of temperature.

PROCESS DESIGN

1. **Written SOPs** — Utilizing BATHOCARD principals to specify detergent, concentration, time, temperature, mechanical action and final rinsing procedure until conductivity/TOC baselines are met (where required).
2. **Residue limits** — define acceptance criteria (visual clean + analytical where applicable).
3. **Sampling** — rinse sampling for tanks/lines; swab coupons/crevices for small parts.
4. **Verification tools** — TOC for organics; conductivity for salts; HPLC/GC-MS for specific risk chemicals; IC for chloride/phosphate/sulfate when needed.
5. **Records & training** — batch cleaning logs, calibration of dosing, staff training consistent with ISO 22716, FDA MoCRA direction, OSHA/CDC or provincial body-art requirements.

APPLICATION NOTES



COSMETICS MANUFACTURING (Mixers, Tanks, Fill Lines – low foaming typically specified)

- **Sequence:** Pre-rinse → Alkaline wash → Optional oxidizing/acid step → Final high-purity water rinse.
- **For deodorants (AlCl₃) and mineral scales,** add Citranox/Citrajel detergent step for COP/CIP cleaning, respectively.
- **For high-fragrance, high-oil campaigns** or where maximum emulsification is needed, run Halojet cleaner at ~3% (2–5% range) as the primary wash in CIP/washer cycles; follow with a Citrajel rinse if hard-water scale or metal salts are present.
- **For stubborn dyes/fragrances,** include Detojet cycle or a validated purge with Keylajet/Solujel followed by Citrajel detergents.

LABS, PILOT, AND PACKAGING LINES

- **Manual or ultrasonic** with Detonox/Liquinox detergents at 2–3% hot.
- **Sensitive plastics or stress-crack-prone parts:** choose Detojet detergent (low-foam liquid) or surfactant-free options where needed.

TATTOO & PIERCING STUDIOS (Pre-Disinfection/Sterilization)

- **Clean first (CDC principle):** Tergazyme detergent at 1–2% warm (≤55 °C) for protein soils; 2–3% for heavy load.
- **Rinse thoroughly;** proceed to disinfection/sterilization per local health authority rules. Use single-use items where mandated.



WHY ALCONOX, LLC

- **80+ years of critical-cleaning science** in regulated markets (cosmetics, pharma, med-device).
- **Residue-free formulations**—no added dyes, fragrances, brighteners, or softeners.
- **Global technical support**—detergent selection, trial protocols, and validation language mapped to ISO 22716, FDA MoCRA, Health Canada Cosmetic Regulations, and EU 1223/2009 expectations.
- **Halojet® advantage:** high-emulsifying, low-foaming detergent for difficult cosmetic residues at ~3% and does not ship as hazmat, easing logistics.

EXAMPLE SOP SNIPPET (CIP Tank – Emulsified Creams)

- **Detergent:** Halojet 3% (adjust 2–5% as needed)
- **Temp:** 70 °C (158 °F)
- **Action/Time:** 20 min recirculation, target turbulence ≥ 1.5 m/s line velocity
- **Detergent Solution Volume:** 10-30% of tank volume
- **Rinse:** DI water to conductivity baseline $\pm 10\%$; optional TOC check for release
- **Records:** lot #, concentration verification, temp/time trend, final rinse result

REFERENCES / STANDARDS

- **ISO 22716:** Cosmetics — Good Manufacturing Practices (GMP)
- **U.S. FDA** – Modernization of Cosmetics Regulation Act (MoCRA, 2022); FDA cosmetics GMP rulemaking & guidance
- **OSHA 29 CFR 1910.1030** Bloodborne Pathogens Standard
- **CDC** infection-control principles (cleaning precedes disinfection/sterilization)
- **Health Canada** – Cosmetic Regulations (Food & Drugs Act) and guidance adopting ISO 22716
- **EU Regulation (EC) No 1223/2009** on cosmetic products
- **The Aqueous Cleaning Handbook**, 5th Ed., Moussourakis, Phillips, Silverstein, McLaughlin, 2024
- **Alconox, LLC website:** <https://alconox.com> and Technical Notes: <https://technotes.alconox.com>
- **BATHOCARD principals** — <https://technotes.alconox.com/industry/bathocard/>

TEST OUR PRODUCTS

Share your soil types, equipment, and method (manual, ultrasonic, washer, CIP). We'll recommend a detergent, starting parameters and a verification plan to satisfy QA and inspectors while keeping residues out of your products.

 <https://alconox.com/order-sample/>

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