

INDUSTRY/APPLICATION KEY CONCERNS	ARTICLES CLEANED/SOILS REMOVED	CLEANING METHOD	CLEANER: Powder	Liquid	
<b>Laboratories</b> Reproducible results, no interfering residues, extending equipment life. Maintaining laboratory accreditation. Laboratory safety.	Glass, metal, plastic labware, ceramics, tissue culture, porcelain, clean rooms, animal cages, bioreactors, tubing, benches, safety equipment.	Manual, ultrasonic, soak	ALCONOX	LIQUINOX (p-free)	
		Machine, power spray, labware washer, washer-sterilizer, cage-washers	ALCOJET TERGAJET (p-free)	DETOJET SOLUJET (p-free)	
	Tubes, reusable pipets.	Siphon-type washer-rinsers	ALCOTABS (tablet)		
	Microbiology, water lab, and environmental sampling. Phosphate-sensitive labware. EPA procedures. (Acid for water rinse cycle.)	Field, manual, ultrasonic, soak	TERGAJET (p-free)	LIQUINOX (p-free)	
		Machine washer, labware washer	TERGAJET (p-free)	SOLUJET-base CITRAJET-acid	
	Radioactive equipment/contaminants. Stopcock grease.	Manual, ultrasonic, soak	ALCONOX	DETONOX	
		Machine washer, warewasher	ALCOJET	KEYLAJET	
	Trace metals, metal oxides, scale, salts, starches, amines.	Manual, ultrasonic, soak		CITRANOX (p-free)	
		Machine washer, warewasher		CITRAJET (p-free)	
	Proteinaceous soils, biowastes, tissue, blood and other body fluids, fermentation residues.	Manual, ultrasonic, soak	TERGAZYME	DETOJET	
Glassware washer		ALCOJET	DETOJET		
		TERGAJET (p-free)	SOLUJET (p-free)		
Glassware needing surfactant or metal-free cleaning for enzyme kinetics, tissue culture, pipet soaking and trace inorganics.	Soak	ALNOCHROMIX			
<b>Medical Device Manufacturing</b> Passing cleaning validation for FDA good manufacturing practices, EU regulations and similar requirements. Stainless steel, titanium, plastics and other device substrates.	Cutting and machining oils, lubricants, mold release, environmental residue.	Manual, ultrasonic, soak	ALCONOX	LIQUINOX (p-free) DETONOX	
		Machine washer, power wash, CIP	ALCOJET TERGAJET (p-free)	SOLUJET (p-free)	
	Inorganic residues, salts, metallics, oxidation.	Manual, ultrasonic, soak		CITRANOX (p-free)	
		Machine washer, power wash, CIP		CITRAJET (p-free) SOLUJET (p-free)	
	Reprocessing: protein, organic, biologic films and related residues.	Manual, ultrasonic, soak	TERGAZYME	DETOJET	
		Machine washer, power wash, CIP	ALCOJET		
	<b>Pharmaceutical</b> Passing cleaning validation for FDA good manufacturing practices, EU regulations and similar requirements. Stainless steel, elastomers, glassware and other pharma substrates.	Titanium dioxide, petrolatum, oils, emulsions, ointments, carbopols, lacquers, zinc oxides, steroids, alcohols, sugars, and Eudragit* (L/S/L30/D55/NE30D) polymers.	Manual, ultrasonic, soak	ALCONOX	LIQUINOX (p-free)
			Machine washer, power wash, CIP	ALCOJET TERGAJET (p-free)	SOLUJET (p-free)
Inorganic residues, salts, metallics, pigments. Eudragit* (E/RL/RS/E100) polymers, amphoteric, coatings, amines, ethers, starches, alkaloids.		Manual, ultrasonic, soak		CITRANOX (p-free)	
		Machine washer, power wash, CIP		CITRAJET (p-free)	
<b>Biotech/Biopharma</b> Passing cleaning validation for FDA good manufacturing practices, EU regulations and similar requirements. Stainless steel, elastomers, glassware, polymeric filter membranes and other biopharma substrates.	Inorganic residues, salts, buffering solutions.	Manual, ultrasonic, soak		CITRANOX (p-free)	
		Machine washer, power wash, CIP		CITRAJET (p-free) SOLUJET (p-free)	
	Protein, organic, cellular and fermentation residues. R/O, U/F membranes.	Manual, ultrasonic, soak	ALCONOX TERGAZYME	LIQUINOX (p-free) DETOJET	
		Machine washer, power wash, CIP	ALCOJET	DETOJET SOLUJET (p-free)	

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<b>Healthcare/Veterinary</b> Effective preparation for sterilization, longer instrument life. Reduced waste.	Surgical, anaesthetic, and examining instruments and equipment. Catheters and tubes.	Manual, ultrasonic, soak	ALCONOX	LIQUINOX (p-free)
		Machine washer, sani-sterilizer	ALCOJET	DETOJET
	Blood, body fluids, tissue on instruments.	Manual, ultrasonic, soak	TERGAZYME	DETOJET
<b>Electronics</b> Avoid conductive residues, avoid CFCs, pass cleaning criteria.	Circuit boards, assemblies, screens, parts, conductive residues, resins, rosins, fluxes, particulates, salts.	Manual, ultrasonic, soak		DETERGENT 8
		Machine washer, power spray board and screen washers		LUMINOX (neutral pH)
	Ceramic insulators and components.	Manual, ultrasonic, soak	ALCONOX	LIQUINOX (p-free)
<b>Cosmetics</b> Avoid cross-contamination. Passing cleaning validation for FDA good manufacturing practices. Stainless steel, glass, plastic, elastomer cleaning.		Parts washers	ALCOJET	LUMINOX (neutral pH)
	Product contact surfaces (acids for pigments and salts). Titanium dioxide, petrolatum, oils, emulsions, ointments, carbopols, lacquers, zinc oxides.	Manual, ultrasonic, soak	ALCONOX	LIQUINOX (p-free)
		Parts washers, power spray	ALCOJET	DETONOX-base CITRANOX-acid
<b>Optics</b> Clean parts. Avoiding volatile solvents, strong acids, and other hazardous chemicals.				SOLUJET (p-free) LUMINOX (neutral pH)
	Glass, ceramic, porcelain, stainless steel, plastic, rubber. Oils, chemicals, particulates.	Manual, ultrasonic, soak	ALCONOX	LIQUINOX (p-free)
		Machine washer, power wash	ALCOJET	DETOJET
<b>Cannabis</b> Critically clean cannabis, CBD and related botanical labware, glassware, instrumentation, and processing and extraction equipment, is vital. Ensures strain to strain, and batch to batch processing is kept clean and contaminant free.			TERGAJET (p-free)	SOLUJET (p-free)
	Glassware, processing tools, extraction vessels, boiling flasks, and clean-in-place (CIP) manufacturing equipment. Sticky oils, waxes, and resins.	Manual, ultrasonic, soak	ALCONOX	LUMINOX (neutral pH)
	Irrigation lines, pesticide and organic water build up.	Manual, ultrasonic, soak	ALCOJET	LIQUINOX (p-free)
<b>Photovoltaic</b> Thin film solar module manufacturing requires clean glass and metal substrates for optimum yield.			TERGAZYME	DETONOX
	Glass and metal substrates.	Manual, ultrasonic, soak	ALCONOX	LIQUINOX (p-free)
		Machine wash, pressure wash, CIP	ALCOJET	DETOJET
	Removal of salt and inorganic buildup.	Manual, ultrasonic, soak	ALCOJET	LIQUINOX (p-free)
		Machine wash, pressure wash, CIP	TERGAZYME	CITRANOX (p-free)
				CITRAJET (p-free)

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<b>Food &amp; Beverage Manufacturing</b> Food and beverage processing equipment must be critically cleaned per FDA and related requirements ensuring safe, contamination free products, and prolonging of equipment life.	Stainless steel, food contact equipment, industrial fryers/grease buildup, oils, and food residues.	Manual, ultrasonic, soak	ALCONOX	LIQUINOX (p-free) DETONOX
		Machine wash, pressure wash, CIP	ALCOJET	SOLUJET (p-free)
	Oxides, scale, trace metals, salts, milkstone and corrosion.	Manual, ultrasonic, soak		CITRANOX (p-free)
		Machine wash, pressure wash, CIP		CITRAJET (p-free)
	Filter membranes, proteins, biofouling.	Manual, ultrasonic, soak	TERGAZYME	DETOJET
		Machine wash, pressure wash, CIP		DETOJET SOLUJET (p-free)
<b>Foodservice</b> Avoid interfering residues on food-contact equipment and effectively remove soils commonly found in food operations. (For complete foodservice detergent selection guide, visit <a href="http://AlconoxFoodservice.com">AlconoxFoodservice.com</a> )	Stainless steel, food contact equipment, industrial fryers/grease buildup, oils, and food residues.	Manual, ultrasonic, soak	ALCONOX PFS	LIQUINOX (p-free) DETONOX
		Machine wash, pressure wash, CIP	ALCOJET	
	Oxides, scale, trace metals, salts, milkstone and corrosion.	Manual, ultrasonic, soak		CITRANOX (p-free)
		Machine wash, pressure wash, CIP		CITRAJET (p-free)
	Filter membranes, proteins, biofouling.	Manual, ultrasonic, soak	TERGAZYME	
<b>Filter Cleaning</b> Returning reusable RO and UF filters to specified flux requires thorough, residue free cleaning.	General cleaning of fouled UF membrane and RO modules.	Soaking, recirculation CIP	ALCONOX	LIQUINOX (p-free) CITRANOX (p-free)
		High pressure CIP or other low foaming requirement	ALCOJET	SOLUJET (p-free) DETOJET CITRAJET (p-free)
	Removal of proteinaceous and similar residues.	Soaking, recirculation CIP	TERGAZYME	
<b>Environmental</b> Reproducible results, no interfering residues, extending equipment life. Maintaining laboratory accreditation. Laboratory safety.	Glass, metal, plastic labware, ceramics, tissue culture, porcelain, clean rooms, animal cages, bioreactors, tubing, benches, safety equipment.	Manual, ultrasonic, soak		LIQUINOX (p-free)
		Machine, power spray, labware washer, washer-sterilizer, cage-washers	TERGAJET (p-free)	SOLUJET (p-free)
	Tubes, reusable pipets.	Siphon-type washer-rinsers	ALCOTABS (tablet)	
		Field, manual, ultrasonic, soak	TERGAJET (p-free)	LIQUINOX (p-free)
	Microbiology, water lab, and environmental sampling. Phosphate-sensitive labware. EPA procedures. (Acid for water rinse cycle).	Machine washer, labware washer	TERGAJET (p-free)	SOLUJET-base CITRAJET-acid
		Manual, ultrasonic, soak		CITRANOX (p-free)
	Trace metals, metal oxides, scale, salts, starches, amines.	Machine washer, warewasher		CITRAJET (p-free)
<b>Nuclear</b> Avoid waste interference.	Laboratory decontamination, pipes, tools, protective equipment.	Ultrasonic, soak, scrubbing, spray	ALCONOX	DETERGENT 8
	Reactor cavity decontamination.	Manual, soak, high pressure spray		DETERGENT 8
<b>Tattoo Equipment</b> Equipment used for tattooing and piercing must be cleaned thoroughly prior to disinfection.	Blood, body fluids, tissue on instruments.	Manual, ultrasonic, soak	ALCONOX TERGAZYME	DETOJET

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<b>Precision Manufacturing</b> Clean parts. Avoiding volatile solvents, strong acids, and other hazardous chemicals.	Aluminum, brass, copper, and other soft metal parts. Oils, chemicals, particulates (acid for oxides, salts, buffing compounds).	Manual, ultrasonic, soak	ALCONOX TERGAJET (p-free)	LIQUINOX-base CITRANOX-acid
	Oxidation, metallic complexes, trace metals, rust, scale, salts, metal brightening.	Manual, ultrasonic, soak Parts washer, power wash	ALCOJET TERGAJET (p-free)	SOLUJET-base CITRAJET-acid
	Delicate substrates/neutral for waste.	Manual, ultrasonic, soak Machine wash, pressure spray		CITRANOX (p-free) CITRAJET (p-free) KEYLAJET
	Heavily soiled steel with grease, grime, scale.	Soak, ultrasonic, machine wash, spray		LUMINOX (neutral pH) KEYLAJET
<b>Passivation</b> The process of forming a passive layer of chromium oxide on the surface of stainless steel to protect it from corrosion.	Removal of free iron, creating a passive layer of chromium oxide.	Manual, ultrasonic, soak		CITRANOX (p-free)
		Machine wash, pressure wash, CIP		CITRAJET (p-free)
<b>Ultrasonics</b> Ultrasound transducers pulse sound waves through a solution. Allows for efficient mechanical energy to clean surfaces reliably and reproducibly.	Aluminum, brass, copper, tool steel, and other soft metal parts.	Manual, ultrasonic, soak		CITRANOX (p-free)
	Oils, chemicals, particulates (acid for oxides, salts, buffing compounds).	Manual, ultrasonic, soak	ALCONOX	LIQUINOX (p-free)
	Stainless steel, plastics, glass with challenging, adherent residues.	Manual, ultrasonic, soak	ALCONOX	DETONOX
	Blood, body fluids, tissue on instruments, glass and labware.	Manual, ultrasonic, soak	TERGAZYME	DETOJET



### Alconox Inc. Provides Critical Cleaning Support and Cleaning Validation Guidance

Alconox Inc., with over 75 years of experience, is a proud supplier to companies requiring exacting levels of quality control and technical service. Each product is tested by lot number, with Certificates of Analysis available to end users with quality control or regulatory-compliance requirements. Cleaning validation guidance includes whitepaper and reference documents, lot number traceability of all cleaners and ingredients, cleaner toxicity and reactivity/degradation information, shelf-life testing, residue sampling, detection methods, and written cleaning procedures.

As the critical cleaning experts, Alconox Inc. can provide valuable consulting, training, and information to vendors, suppliers, and clients in many industries who wish to establish critical cleaning methods and procedures.