

Cleaner Degreasers

Chemtronics® complete line of high purity solvents are the finest, most effective products made for critical cleaning and degreasing. Each cleaning agent possesses unique properties suited to specific applications — from precision cleaning of sensitive equipment to heavy duty degreasing.

Several of these products can be used in bench top ultrasonic, immersion, and vapor degreaser cleaning systems.

All aerosols can be sprayed in any direction, even upside down. Look for the “All-Way Spray” icon on the can.



Electro-Wash® Cleaner Degreasers are engineered to clean a wide variety of soil, oil, grease, oxides and handling contamination, from equipment and assemblies that include:

- Printed circuit boards
- Metal and fiber optic cable splices
- Fiber optic connectors
- Motors and transformers
- Tools
- Programmable Logic Controllers (PLCs)
- Pneumatic and hydraulic assemblies
- Control systems
- Electronics and electrical equipment
- Precision devices
- Tooling and molds
- Meters/measurement devices



CIROZANE™ – HCFC-225 replacement chemistry

VERIZANE™ – HCFC-225 replacement chemistry; formulated with DuPont™ Vertrel® Specialty Fluids

Electro-Wash® CZ

Non-ozone depleting, nonflammable cleaner degreaser safe for use on plastics

- Safe on plastics
- Nonflammable
- Dries fast
- Leaves no residue

Applications:

- Removes handling soils from live circuits
- Cleans oil and residue from sensitive surfaces
- Liquid can be used with ultrasonics, vapor degreasers, as a cold immersion solvent, or with spray dispensing system

ES7100 12 oz / 340 g aerosol
ES7101 1 gal / 3.7 L liquid

Electro-Wash® VZ

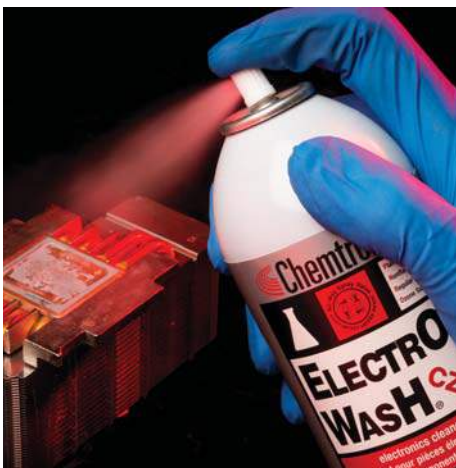
Economical, non-ozone depleting, nonflammable universal cleaner degreaser

- Nonflammable
- One cleaner for all soil types
- Low odor
- Evaporates quickly without leaving residue
- Penetrates to clean hard to reach areas
- Test on plastics
- Ideal AK225 replacement

Applications:

- Cleaning printed circuit boards and control systems
- Maintaining Programmable Logic Controllers (PLCs)
- Removing oils from pneumatic and hydraulic assemblies

ES6100 12 oz / 340 g aerosol
ES6101 1 gal / 3.7 L liquid
ES6155 53 gal / 200 L liquid



Product Selection Guide

	Features						Cleaning Ability			Cleaning Methods					
	Plastic Safe	Nonflammable	Cleaning Strength	No Ozone Depleting Chemicals	Dries Fast	NSF registered	Grease	Oils	Ionic Soils	Aerosol Spray	Benchtop Spray System	Vapor Degreasing	Ultrasonics	Hot Immersion	Cold Immersion
Electro-Wash® CZ	✓	✓	R	✓	✓		3	2	2	✓	✓	✓	✓	✓	✓
Electro-Wash® VZ		✓	R	✓	✓		3	1	2	✓	✓	✓	✓		✓
Electro-Wash® NX0		✓	X	✓	✓		1	1	2	✓	✓	✓	✓		✓
Electro-Wash® PX	✓		X	✓	✓		1	1	1	✓					✓
Electro-Wash® MX	✓		X	✓	✓		1	1	1	✓					
Electro-Wash® PN	✓	✓	R		✓		3	2	3	✓					
Electro-Wash® NX		✓	X		✓	K2	2	1	2	✓					
Electro-Wash® NR		✓	R	✓	✓		1	1	-	✓	✓	✓	✓	✓	✓
Electro-Wash® PR	✓		R	✓	✓		1	1	-	✓					
Electro-Wash® Two Step		✓	X	✓	✓		1	1	1		✓		✓	✓	✓
Electro-Wash® AQ	✓	✓	R	✓	✓		2	2	2		✓		✓	✓	✓

1— Excellent 2— Good 3— Fair R— Regular Strength X— Extra Strength

ASK THE EXPERTS!

Chemtronics has application specialists standing by to identify the best solution for you. Call 800-645-5244 or e-mail askchemtronics@chemtronics.com.



Electro-Wash® PX

Extra-strength universal cleaner and degreaser safe for use on plastics

- Safe on plastics
- Flammable
- Xtra cleaning strength
- Dries fast
- Leaves no residue
- Removes organic and ionic soils

Applications:

- Removes oils and hydraulic fluids
- Cleans handling soils from circuitry before reassembly
- Removes grease from assembly lines
- Liquid may be used in cold dip and rinsing

ES810 5 oz / 141 g trigger aerosol
ES1210A 12.5 oz / 354 g trigger aerosol
ES1210 12.5 oz / 354 g aerosol
ES110 1 gal / 3.7 L liquid

Electro-Wash® MX

Extra-strength, plastic safe universal cleaner with moderate evaporation time

- Safe on plastics
- Flammable
- Xtra cleaning strength
- Moderate evaporation rate increases cleaning power
- Leaves no residue
- Removes organic and ionic soils

Cleaning:

- Semiconductive cores of high voltage cables
- Hard-line coax cable
- Metal and fiber optic cable splices

ES1621 10 oz / 283 g aerosol
CP421 25 - 8" x 10" / 20.3 cm x 10" / 25.4 cm premoistened wipes (9 ml each)
FW2150 9 g / 0.32 oz pen



Also try IPA Isopropyl Alcohol — Conveniently packaged in a variety of sizes. See page 19.



AK225
phase out

AK225 Phase Out – January 1st, 2015

AK225, a chemical component found in many precision cleaning solvents, is being banned because of ozone depletion. The US EPA (Environmental Protection Agency), following the Montreal Protocol, is requiring users to find replacements after 2014.

Electro-Wash PN and NX, Pow-R-Wash PN and NX, and Flux-Off No Clean all contain AK225.

Chemtronics offers effective drop-in replacements including Electro-Wash CZ and VZ, Pow-R-Wash CZ and VZ, and Flux-Off CZ and VZ. These products are safe on the ozone layer, powerful and ideal for sensitive components.

Call Chemtronics at 800-645-5244 for expert advice on finding the most suitable AK225 replacement solutions for your particular application needs.



Electro-Wash® PN

Nonflammable cleaner degreaser
safe for use on plastics

AK225
phase out

- Safe on plastics
- Nonflammable
- Dries fast
- Leaves no residue
- Contains HCFC-225
- U.S. Patent 6,747,998 and foreign patents
- Not for sale or use in Canada

Applications:

- Quickly removes oils, greases, oxides and handling soils
- Cleans carbon dust from motors and transformers
- Removes airborne contaminants from Programmable Logic Controllers

ES1678 12 oz / 340 g aerosol

Electro-Wash® NXO

Extra-strength, nonflammable cleaner degreaser

- Nonflammable
- Xtra cleaning strength
- Dries fast
- Leaves no residue
- Test on plastics

Applications:

- Cleans difficult to remove soils from robotic assemblies
- Removes cured conformal coatings
- Removes encrusted no-clean residues

ES1607 12 oz / 340 g aerosol

ES107 1 gal / 3.7 L liquid

Electro-Wash® NX

Extra-strength, nonflammable
cleaner degreaser

AK225
phase out

- Nonflammable
- Xtra cleaning strength
- Dries fast
- Leaves no residue
- Test on plastics
- Contains HCFC-225
- U.S. Patent 6,746,998 and foreign patents
- NSF Registered — Nonfood Compounds/Category Code K2
- Not for sale or use in Canada

Applications:

- Cleans oils and grease from live circuit boxes
- Removes oil from live wire assemblies
- Cleans carbon and oxides from live switches and relays

ES1611 12 oz / 340 g aerosol

ES2211 18 oz / 510 g aerosol

ES111 1 gal / 3.7 L liquid

ES5511 55 gal / 203 L liquid

Electro-Wash® PR

Regular-strength cleaner safe for use on plastics

- Safe on plastics
- Flammable
- Dries fast
- Leaves no residue

Applications:

- Cleans oils and grease from hand tools
- Removes grease quickly from bearing assemblies
- Cleans carbon and oxides from motor assemblies

ES1603 10 oz / 283 g aerosol



Electro-Wash® NR

Regular-strength, nonflammable cleaner degreaser

- Nonflammable
- Dries fast
- Leaves no residue
- Test on plastics
- Contains n-propyl bromide

Applications:

- Cleans oils from live equipment
- Removes oil and oxides from relay and circuit banks
- Cleans contamination from live connectors

ES1614	12 oz / 340 g aerosol
ES114	1 gal / 3.7 L liquid
ES5514	55 gal / 203 L liquid



Electro-Wash® AQ

Aqueous cleaner for inline, batch and ultrasonic equipment

- Nonflammable
- Highest cleaning strength
- Concentrated – 1% to 5% dilution
- Rinse required for high precision cleaning
- Low foaming
- Test on plastics
- Recommended temperature 120°-140°F

Applications:

- Inline and batch cleaning systems
- Ultrasonic equipment
- Removes oils and flux residues

ES251	1 gal / 3.7 L liquid
ES255	5 gal / 19 L liquid
ES2555	55 gal / 203 L liquid



Electro-Wash® Two Step

Extra-strength, nonflammable ultrasonic and immersion cleaner

- Nonflammable
- Xtra cleaning strength
- Leaves no residue when rinsed with Electro-Wash PX or Electro-Wash CZ
- Test on plastics
- Increasing temperature increases solvency

Applications:

- Removes solder pastes from stencils and screens
- Removes cured conformal coatings
- Removes no-clean residues
- Cleans reflow ovens

ES125A	1 gal / 3.7 L liquid
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Industrial Degreasers and Lubricants

Max-Kleen™ Heavy-Duty Degreasers rise to the challenge of your most difficult jobs. These industrial strength cleaners offer fast, easy removal of grease, tar, asphalt, oil and grime. For the extra-strength your tough degreasing jobs need.

Recommended for all degreasing including:

- Clutches, armatures, generators, and compressors
- Electrical motors and equipment
- Bearings, chains, cables, pulleys and gear drives
- Brakes, springs and flywheels



Max-Kleen™ Citrus

Citrus-based extra-strength degreaser

- Citrus-based formula
- Engineered for fast removal of oxidized grease, sludge, wax, tar and oil
- Dielectric strength of 62 kV
- Does not contain chlorinated solvents
- Safe on most metals and plastics
- Non-corrosive and nonconductive
- NSF Registered — Nonfood Compounds/Code C1

Applications:

- Mechanical parts cleaning
- Automotive, aerospace, and general fabrication industries degreasing

ES2289 15 oz / 425 g aerosol
ES189 1 gal / 3.7 L liquid
ES5589 53 gallons / 200 L liquid

Max-Kleen™ Citrus HF

High flashpoint citrus-based degreaser for heavy greases

- Citrus-based formula with moderate evaporation
- Quickly removes all types of tough soils including oxidized oil and grease
- Safe for use on most metals and plastics
- Flashpoint greater than 140° F
- Non-corrosive and nonconductive
- Low Toxicity
- Leaves no residue

Applications:

- Cleans contacts, relays, switches, circuit breakers and test probes
- Cleans electric motors and gasoline engines
- Removes tough soils from gears and pulleys
- Cleans inks and residues from printing presses

ES191 1 gal / 3.7 L liquid
ES591 5 gal / 19 L liquid
ES5591 53 gallons / 200 L liquid



Product Selection Guide

	Features					Cleaning Ability			Cleaning Methods					
	Plastic Safe	Nonflammable	Cleaning Strength	No Ozone Depleting Chemicals	Dries Fast	Grease	Oils	Ionic Soils	Aerosol Spray	Benchtop Spray System	Vapor Degreasing	Ultrasonics	Hot Immersion	Cold Immersion
Max-Kleen™ Xtreme™	✓	X	✓	✓	K1, K2	1	1	2	✓	✓	✓	✓	✓	✓
Max-Kleen™ Citrus	✓	R	✓		C1	2	2	2	✓	✓		✓	✓	✓
Max-Kleen™ Mighty Wash	✓	✓	R	✓		3	3	2		✓		✓	✓	✓
Max-Kleen™ Citrus HF			R	✓		1	1	3		✓		✓	✓	✓

1- Excellent 2- Good 3- Fair R- Regular Strength X- Extra Strength

Max-Kleen™ Xtreme™

Extra-strength, nonflammable heavy-duty degreaser

- Most aggressive heavy-duty degreaser
- Nonflammable, no flash point
- Dielectric strength of 18 kV
- Non-corrosive and nonconductive
- Evaporates quickly without leaving residue
- Test on plastics
- Contains n-propyl bromide
- NSF Registered — Nonfood Compounds/Code K1, K2

Applications:

- Removes oxidized oil and grease from tools, clutches, bearings and housings

ES2284	19 oz / 539 g aerosol
ES184	1 gal / 3.7 L liquid
ES5584	53 gallons / 200 L liquid



Max-Kleen™ Mighty Wash™

Powerful, industrial grade aqueous degreaser

- Available in both, ready-to-use (RTU) trigger spray and water dilutable concentrate formula
- Heavy-duty cleaning performance
- Prevents flash rusting and corrosion
- Low foaming
- Nonflammable
- Butyl-free and low VOC's
- NSF Registered — Nonfood Compounds/Category Code C1

Applications:

- Metal parts cleaning
- Spray cleaning motors, generators and compressors
- Cleaning machinery; lathes, stamping mills, shears, and air compressors
- Cleaning oily hand tools and machined parts
- Process equipment - food process equipment, ovens, exhaust hoods and appliances

ES3294	32 oz / 940 ml trigger spray
ES194G	1 gal / 3.7 L liquid

DPL® Deep Penetrating Lubricant

Deep penetrating lubricant to displace moisture and inhibit corrosion

- Restores, rejuvenates, protects and preserves contacts
- Foaming spray penetrates deeply to remove moisture and condensation
- Loosens, cleans, lubricates and protects frozen or corroded parts
- Dielectric strength of 30 kV
- Contains no chlorinated solvents or silicone
- Non-corrosive and nonconductive
- Safe on metals and plastics
- NSF Registered — Nonfood Compounds/Code H2

Applications:

- Moisture displacing fluid for electrical and electronic components
- Mechanical parts and surfaces cleaning, lubricating and protecting
- Preserves electrical and electronic contacts, solenoids rheostats and switches
- Automotive, aerospace and general fabrication lubrication

ES1626	11 oz / 322 g aerosol
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HD Silicone™ Lubricant

Electrical food-grade silicone lubricant to lubricate and waterproof

- Lubricates, waterproofs and protects in one application
- Ideal for use on plastics, rubber, elastomers and gaskets
- Stable from -40° F to 450° F
- Reduces sliding friction between dissimilar materials
- Dielectric strength of 40 kV
- Nonconductive and nonstaining
- Contains no chlorinated solvents
- NSF Registered — Nonfood Compounds/Code H1

Applications:

- Conveyers, rails chutes — food processing and handling equipment
- Tools, rubber seals and boots, screw and gear drives, plastic gears and cogs.
- Chains, cables, pulleys and motors

ES1623	10 oz / 283 g aerosol
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Contact Cleaners

These high purity formulations remove environmental contaminants and protect contacts from corrosion and frictional wear. Contact cleaners restore electrical continuity to all electronic and electrical contacts by penetrating and removing insulating oil and grease, conductive carbon soil, and insulative oxides from contact surfaces. By restoring full circuit continuity, Chemtronics contact cleaners improve the performance of all equipment that rely on electrical contacts.

Aerosols can be sprayed in any direction, even upside down. Look for the "All-Way Spray" icon on the can.



Recommended for every phase of electronics and electrical contact maintenance including:

- Metal contacts
- Plastic embedded contacts
- Potentiometers
- Relays and switches
- Circuit breakers
- Fuse blocks
- Electronic controls
- Electrical panels
- Motors and armatures
- Plugs and sockets
- Solenoids



CIROZANE™ – HCFC-225 replacement chemistry

VERIZANE™ – HCFC-225 replacement chemistry; formulated with DuPont™ Vertrel® Specialty Fluids

Pow-R-Wash™ CZ

First non-ozone depleting, nonflammable contact cleaner safe for use on powered-up contacts and surrounding plastics

- Safe on plastics
- Nonflammable
- Dielectric strength of 31 kV
- Evaporates quickly without leaving residue
- Dries fast
- Leaves no residue

Applications:

- Removes oil, grease, and carbon dust
- Can be used on energized equipment
- Ideal for use on sensitive plastics

ES7300 12 oz / 340 g aerosol

Pow-R-Wash™ VZ

Economical non-ozone depleting, nonflammable contact cleaner safe for use on live circuits

- Nonflammable
- Dielectric strength of 15 kV
- Noncorrosive
- Evaporates quickly without leaving residue
- Test on plastics
- Ideal AK225 replacement

Applications:

- All repair and maintenance contact cleaning
- Cleaning of metal contacts, plugs and sockets, solenoids
- Removing oxidized soils from switches, circuit breakers, motors and armatures

ES6300 12 oz / 340 g aerosol
ES6301 1 gal / 3.7 L liquid
ES6355 53 gal / 200 L liquid



Product Selection Guide

Contact Cleaners

	Features					Benefits and Applications			
	Plastic Safe	Nonflammable	Cleaning Strength	No Ozone Depleting Chemicals	Dries Fast	For Use On Live Circuits	Dielectric Breakdown	Lubricates	Specialty for
Pow-R-Wash™ CZ	✓	✓	R	✓	✓	✓	31 kV		Sensitive Plastics
Pow-R-Wash™ VZ		✓	R	✓	✓	✓	15 kV		General Contact Cleaning
Pow-R-Wash™ NX		✓	X		✓	✓	30 kV		Cleaning Metal Connectors
Pow-R-Wash™ PN	✓	✓	R		✓	✓	26 kV		Cleaning Plastic Encased Contacts
Pow-R-Wash™ NR		✓	R	✓	✓	✓	23 kV		Cleaning Heavy Lubrication From Live Circuits
Pow-R-Wash™ PR	✓		R	✓	✓		44 kV		Cleaning Heavy Lubrication
Pow-R-Wash™ Cable Cleaner	✓		X	✓			62 kV		Cleaning Cables, Tools and Contacts
Tun-O-Wash	✓		R	✓	✓				Electro-Mechanical Tuners
Kontakt Restorer®		✓	X	✓	NA	✓	23 kV	✓	Tin and Copper Connectors

NA— Not Applicable R— Regular Strength X— Extra Strength * For lubricant only. Read directions and MSDS before use.



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Pow-R-Wash™ NX

Extra-strength, nonflammable contact cleaner that quickly removes soils from metal-to-metal contacts

- Nonflammable
- Dielectric strength of 30 kV
- Dries fast
- Leaves no residue
- Test on plastics
- Contains HCFC-225
- U.S. Patent 6,746,998 and foreign patents
- Not for sale or use in Canada

Applications:

- Cleans oils and grease from live switches and relays
- Removes carbon from live wire assemblies
- Cleans encrusted soils from live solenoids and switches

ES1612 12 oz / 340 g aerosol

AK225 phase out

Pow-R-Wash™ PN

Nonflammable contact cleaner safe for use on powered-up contacts and surrounding plastics

- Safe on plastics
- Nonflammable
- Dielectric strength of 26 kV
- Dries fast
- Leaves no residue
- Contains HCFC-225
- U.S. Patent 6,746,998 and foreign patents
- Not for sale or use in Canada

Applications:

- Removes carbon dust from circuit breakers
- Cleans ice cube relays
- Ideal for cleaning electrical motor assemblies

ES1677 12 oz / 340 gm aerosol

AK225 phase out

Pow-R-Wash™ PR

Regular-strength contact cleaner safe for use on plastics

- Safe on plastics
- Flammable
- Dielectric strength of 44 kV
- Dries fast
- Leaves no residue

Applications:

- Ideal for removing degraded contact lubricants
- Removes oils and grease from wire harnesses
- Ideal for use on sensitive plastics

ES1605 10 oz / 283 g aerosol

Kontakt Restorer®

One-step contact cleaner and lubricant

- Nonflammable; may be used on energized equipment
- Xtra cleaning strength
- Extends the life of contacts
- Protects contacts from carbon buildup, oxidation and corrosion
- Leaves protective hydrocarbon lubricant
- Prevents degradation of electrical signal
- Excellent dielectric properties
- Test on plastics
- Contains n-propyl bromide

Applications:

- Cleans and protects metal contacts, potentiometers, relays, circuit breakers, fuse blocks, and electronic controls
- Ideal for protecting tin-lead, copper and nickel contacts

ES1629 12 oz / 340 g aerosol



Pow-R-Wash™ NR

Economical, regular strength contact cleaner that quickly removes soils and oxides

- Nonflammable
- Dielectric strength of 23 kV
- Dries fast
- Leaves no residue
- Test on plastics
- Contains n-propyl bromide

Applications:

- Cleans oxidized oils and grease from live switches and relays
- Removes carbon and oxide dust from live wire assemblies
- Cleans soils from live controllers and equipment

ES1613 12 oz / 340 g aerosol

Pow-R-Wash™ Cable Cleaner

Extra-strength, plastic safe cable and contact cleaner with a moderate evaporation time

- Safe on plastics
- Flammable
- Dielectric strength of 63 kV
- Leaves no residue

Applications:

- Removes dirt, adhesives, gel and oxidants from cable terminations
- Removes oils and grease from equipment and tools, generators, compressors, and mechanical tools of all types
- Great for use on metal contacts, potentiometers and fuse blocks

ES2425 13.5 oz / 385 g aerosol

Tun-O-Wash® Cleaner

Universal fast drying cleaner for electro-mechanical and electronic tuners

- Safe on plastics
- Flammable
- Dries fast
- Leaves no residue
- Cleans hard-to-reach areas

Applications:

- Cleaning potentiometers and switches to remove static and hiss
- Removing oxidized contact grease from circuits
- General equipment cleaning and maintenance

ES2400 12.5 oz / 354 g aerosol

Also try CircuitWorks® Gold Guard® pen — for one-step precision cleaning and lubricating of noble metal contacts and connectors. See page 31.



Eco-Rite™ products —
Low environmental impact and high impact performance.

Eco-Rite™ environmentally preferable products are a series of products that are designed to have a very low impact on the environment. These products provide the cleaning that you expect from Chemtronics, with minimal impact on our environment. Whether you are looking for a product with low VOC's, no harsh caustic materials, or products that have low global warming potentials, Eco-Rite™ products offer the performance and value that you need to succeed. All Eco-Rite™ products have the following environmental attributes:

- Low VOC's
- Low global warming
- No 2-butoxyethanol (Butyl)
- No phosphates
- No EDTA or NTA
- No strong caustics, strong acids, chlorine bleach
- No ozone depleting compounds
- No petroleum distillates
- No alkylphenoethoxylates (APE's)
- No hazardous air pollutants (HAP's)



Eco-Rite™ Glass Cleaner

Environmentally preferable, non-streaking glass cleaner

- Specifically formulated to clean glass and other surfaces
- Removes oils, dirt, finger prints and handling soils
- Leaves surfaces streak free
- Nonflammable
- No carcinogens, no ozone depleting compounds

Applications:

- Cleans:
 - Glass and mirrors
 - Stainless steel and chrome
 - Plastics, ceramics and enamel

ES3266 32 oz / 0.94 L trigger sprayer
ES166 1 gal / 3.7 L concentrate

Eco-Rite™ Multi-Purpose Cleaner

Environmentally preferable, multi-purpose aqueous cleaner

- Multi-purpose, spray and wipe cleaning performance
- Removes oils, dirt, waxes and handling soils
- Concentrated – dilute to adjust cleaning strength
- Nonflammable
- No carcinogens, no ozone depleting compounds

Applications:

- Removes oils, handling soils and lubricants
- Ideal for metal parts cleaning and tools
- All repair and maintenance cleaning
- Used to clean grease and other soils from a variety of surfaces such as:
 - Stainless steel and chrome
 - Plastics and fiberglass
 - Ceramics and enamel

ES3277 32 oz / 0.94 L trigger sprayer
ES177 1 gal / 3.7 L concentrate

Eco-Rite™ Heavy Duty Degreaser

Environmentally preferable, industrial grade aqueous degreaser

- Heavy-duty cleaning performance
- Quickly penetrates, breaks down and lifts the toughest grime
- Removes grease, oil, waxes and resins
- Nonflammable
- Formulated with ingredients on EPA Design for Environment list

Applications:

- Removes grease, oil and lubricants
- Ideal for metal parts cleaning and tools
- All repair and maintenance cleaning
- Cleans electric motors and gasoline engines
- Removes tough soils from gears and pulleys

ES155 1 gal concentrate

