



CORTEC
CORPORATION

Environmentally Safe VpCI®/MCI® Technologies

High Performance Lubricants

Enhanced with Nano-VpCI® (Vapor phase Corrosion Inhibitors)



GREASES

CorrLube™ VpCI® Lithium EP Grease

CorrLube™ VpCI® Lithium EP Grease is a lithium complex grease formulated with a premium quality, severely hydrotreated base stock. It provides excellent resistance to oxidation and has good high temperature stability. CorrLube™ VpCI® Lithium EP Grease is suitable for both operating and lay-up conditions. CorrLube™ VpCI® Lithium EP Grease is specifically formulated with superior corrosion inhibiting properties against salt water, brine, H₂S, HCl, and other corrosive agents. In addition, CorrLube™ VpCI® Lithium EP Grease incorporates Vapor phase Corrosion Inhibitors for areas not in direct contact with the grease.



CorShield Open Atmosphere Corrosion Inhibitor Lubricant: VpCI®-369

VpCI®-369 is our best inhibitor for use as an oil additive and/or temporary coating. The protective film is self-healing and moisture-displacing, providing superior protection against aggressive environments. VpCI®-369 is also excellent when used as an oil additive for mothballing, shipping, or storage of parts and equipment. In small percentages, VpCI®-369 has a minimal effect on viscosities. VpCI®-369 is available prediluted with mineral spirits at the ratio 1:1 as VpCI®-369 H, which is recommended for spray can applications.



EcoLine® Bio-Based Premium Heavy Duty Grease

EcoLine® Heavy Duty Grease is formulated with American-grown natural seed oil that surpasses the lubricity of most conventional petroleum based greases. Utilizing the latest biotechnology, EcoLine® Heavy Duty Grease is an environmentally friendly replacement for harmful greases. In addition to lubricating, self-healing, and moisture displacing properties this biodegradable grease provides a powerful combination of contact and vapor phase corrosion protection. EcoLine® Heavy Duty Grease can protect bearings and other equipment from corrosion during operation and lay-up without harming the environment.



EcoLine® Food Machinery Lubri- cating Grease

EcoLine® Food Machinery Lubricating Grease is a high-quality, corrosion inhibiting lubricant formulated with American-grown natural seed oil. This environmentally friendly lubricating and rust preventative grease, was specifically formulated to meet and exceed the demands of major food and meat processing plants. It conforms to USDA H-2 criteria and USDA regulations 21CFR. The combination of FDA compliant corrosion inhibitors and the specially formulated aluminum based thickener, provides superior protection and lubricity. In addition to lubricating, self-healing, and high flash point properties, this biodegradable lubricating grease provides a powerful combination of contact and vapor phase corrosion protection.



METALWORKING FLUIDS - Cutting, Grinding, Stamping

EcoLine® Metalworking Fluid

EcoLine® Metalworking Fluid formulated with biobased oil, additives, and emulsifiers is an excellent replacement for chlorinated products. This product is designed to work in a variety of soft and hard water qualities and offers long-term protection for machine and components. Low maintenance and inherently stable, EcoLine® Metalworking Fluid is designed for machine shops where long service life, excellent machining performance, health, and environmental concerns are important factors for increased productivity. This multifunctional biodegradable product is supplied in concentrated form and requires mixing with water before use.



EcoLine® Bio-Based Cutting Fluid

EcoLine® Cutting Fluid is a multifunctional biodegradable concentrate for metal cutting operations. This liquid cools the work pieces and tools, prevents welding of metals during the metalworking process and provides excellent corrosion protection and lubrication during the cutting process. High-performance characteristics make EcoLine® Cutting Fluid ideally suited for heavy-duty cutting, milling, turning, drilling, broaching and other machining operations. EcoLine® Cutting Fluid is available in bulk concentrate which can be diluted from 1:40 to 1:200. EcoLine® Cutting Fluid is also packaged in a pre-diluted "ready-to-use" 16 oz. bottle with squirt top applicator.



VpCI®-344

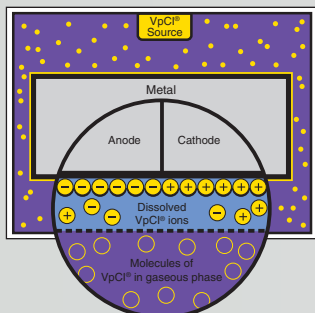
VpCI®-344 is a concentrated corrosion preventive liquid/metalworking lubricant for wet tempering galvanized and cold-rolled steel, difficult-to-produce metal stampings, wire rope, tubular products, and machine parts. This water-based product utilizes Vapor phase Corrosion Inhibitor (VpCI®) technology for maximum protection. VpCI®-344 gives very good protection when coated on metal surfaces, and has a unique vapor phase action which protects uncoated and difficult-to-reach areas on casting and stamping equipment. When used as directed, VpCI®-344 prevents corrosion indoors for up to two years. VpCI®-344 forms a clear solution in water. If needed, this product is designed to be removed with conventional alkaline cleaners.



VpCI® Technology

Ionic Action of VpCI® Creates a Molecular, Inhibiting Layer.

- Vaporizes.
- Conditions enclosed atmosphere with a protective vapor.
- Vapor migrates to all recessed areas and cavities.
- Vapor condenses on all metal surfaces.
- Ions dissolve in moisture layer (water electrolyte).
- Protective ions are attracted to metal surfaces.
- Ions form a thin, monomolecular protective layer at the metal surface.
- Protective layer re-heals and self-replenishes through further condensation of the vapor.



VpCI®-345

VpCI®-345 is a premium water-based metalworking lubricant concentrate for difficult-to-produce metal stampings, tubular products, and machined parts. VpCI®-345 is superior to petroleum-based coolant rust preventives. When used as directed, VpCI®-345 prevents corrosion during in-plant processing, storage, and export shipment up to 24 months. VpCI®-345 is ideally suited for light-duty machined and polished parts requiring long-term corrosion and surface protection. VpCI®-345 can be effectively used as a coolant in machining applications where maximum cooling is employed. High-performance characteristics of VpCI®-345 make it ideally suited for light-duty cutting, milling, turning, drilling, boring, broaching, gear cutting, and other machining operations. VpCI®-345 can replace neat oils and semi-synthetics when there is a requirement for maximum coating and superior rust inhibiting stability. VpCI®-345 is resistant to rancid attack by bacteria. Product life is the same or longer than similar machining fluids.



VpCI®-347

VpCI®-347 is a multifunctional corrosion inhibitor/heavy-duty lubricant concentrate for metalworking operations. VpCI®-347 is superior to heavy-duty petroleum-based rust preventives. High performance characteristics make VpCI®-347 ideally suited for heavy-duty cutting, milling, turning, drilling, boring, broaching, gear cutting, and other machining operations. VpCI®-347 contains lubricating and corrosion inhibiting compounds, and is extremely resistant to rancid attack by bacteria. When used as directed, VpCI®-347 prevents corrosion during in-plant processing, storage, and export shipment for up to 24 months.

OILS



VpCI®-322 Oil Concentrate

VpCI®-322 oil-based concentrate adds corrosion protection to lubricating or hydraulic oils. VpCI®-322 provides excellent protection in indoor or open air conditions. First, oil-soluble corrosion inhibitors offer a tenacious film which clings to metal surfaces, giving excellent contact corrosion protection. In addition to this film barrier, VpCI®-322 releases Vapor phase Corrosion Inhibitors into the air above the oil. These VpCIs attach to metal surfaces for additional corrosion protection.



VpCI®-326

VpCI®-326 is a corrosion inhibitor oil additive for hydraulic oil and gearbox assemblies. VpCI®-326 performs effectively under the adverse conditions of 100% relative humidity, and in the presence of such corrosive species as chlorides, sulfur compounds, or hydrogen sulfide. VpCI®-326 contains no hazardous chromates, nitrites, or phosphate inhibitors. VpCI®-326 utilizes the finest paraffinic petroleum distillates as carriers. VpCI®-326 possesses an exceedingly high flash point, enhancing in-plant safety when compared to common oil protectants. VpCI®-326 is supplied in concentrate form, which is easily diluted with lubricating, hydraulic, or preservative oils; saving shipping and inventory expense. VpCI®-326 is a broad range corrosion inhibitor not only effective on ferrous metals, but also effective on zinc, aluminum, galvanized steel, copper, cadmium, silver, brass, and many other alloys. Conforms to MIL P-46002B and MIL I-85062.



CorrLube™ Industrial Gear Oil

CorrLube™ Industrial Gear Oil is based on the unique blend of PAO (polyalphaolefins) and Ketjenlube polymeresters. This blend gives excellent thermo-oxidative stability (longer service life), neutral seal behavior, superior viscosity characteristics at low temperatures, and superior load carrying capability. CorrLube™ Industrial Gear Oil contains additives that lubricate gears, prevent scoring and welding, reduce friction and wear, and protects against corrosion - all while working under high temperatures and heavy loads. Moreover, CorrLube™ Industrial Gear Oil provides superior corrosion protection in any humid environment.



VpCI®-329

VpCI®-329 is a vapor corrosion inhibiting oil-based concentrate designed for use with lubricating, hydraulic, and preservation oils, and provides excellent protection in sheltered outdoor/indoor conditions. VpCI®-329 protects in two unique ways by offering a tenacious film, which clings to metal surfaces, as well as vapor phase inhibitors into the air above the oil. The vapors condense and form a protective barrier on metal surfaces that are not in contact with the oil. This combination allows complete protection to internal system parts.

General Applications

- Conveyors
- Chains
- Cables
- Hinges
- Rollers
- Shafts
- Rails
- Pins
- Bearings
- Machinery
- Drives
- Motors
- Doors



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OTHER LUBRICANTS



EcoLine® CLP

EcoLine® CLP is a "green" version of a multi-functional penetrant/lubricant, which provides the following properties: lubrication, penetration, corrosion protection in humid and harsh environments, and cleaning. This product is designed for industrial, shop, and home use. EcoLine® CLP is perfect for indoor and outdoor application and safe for use on all metals and most plastics. This EcoLine® product is based on a combination of canola oil and canola methyl ester as a carrier. Being 89% biobased, this product provides excellent lubricity and biodegradability. EcoLine® CLP is environmentally friendly and leaves behind a very persistent layer that protects against corrosion.



VpCI® Super Penetrant

VpCI® Super Penetrant offers a deep penetrating formulation that loosens frozen parts locked in rust. Its deep penetrating capabilities allow the user to go through as much as 1/2 inch (13 mm) of rust in 30 minutes. VpCI® Super Penetrant can be applied by a variety of convenient methods to meet any application needs including brush, hand pump spray, aerosol, spray application, or dipping. As VpCI® Super Penetrant breaks through deep rust, it displaces moisture and water. Its superior surface wetting and moisture displacing properties allow it to spread rapidly and get underneath the moisture layer normally present on metal under atmospheric conditions. While loosening the rust, it lubricates metal so frozen parts can move freely. Utilizing patented Cortec® VpCI® technology, VpCI® Super Penetrant forms an ultra thin film on metal that offers 6 months of protection from corrosion in extreme conditions. Cortec® VpCI® Super Penetrant can be used for indoor and outdoor applications. Its superior water displacing characteristics make it an ideal choice for applications on equipment and components that are exposed to outside weather. It also conforms to Federal Specifications for VV- P-216 Penetrating Oil for Loosening Frozen Metallic Parts and ASTM D-971 Test for Interfacial Tension of Oil against water.



CorrLube™ Hydraulic Fluid

CorrLube™ Hydraulic Fluid is a fully formulated anti-wear, environmentally friendly, ecologically responsive, non-toxic fluid. It is designed for use in high pressure industrial, marine, construction, and mobile hydraulic systems, as well as turbines and circulating oil systems that are operated in environmentally sensitive areas, or in high humidity conditions. CorrLube™ Hydraulic Fluid is blended from a unique combination of a biodegradable synthetic fluid, extreme pressure lubricity additives, and Vapor phase Corrosion Inhibitors (VpCI's). This unique combination provides CorrLube™ Hydraulic Fluid with the performance required in modern high pressure hydraulic systems.



EcoLine® All Purpose Lubricant

EcoLine® All Purpose Lubricant is designed for industrial, shop, and home use. It contains a friction modifier and extreme pressure additive. It is safe for use on all metals and most plastics. EcoLine® All Purpose Lubricant is perfect for both indoor and outdoor applications. EcoLine® products are based on soybean derivatives and soybean methyl esters. Methyl esters are used in this revolutionary, low-impact technology as solvents. These soya-based products provide excellent lubricity and biodegradability. EcoLine® products are environmentally friendly and leave behind a high-performance VpCI® corrosion protecting layer.



	Product	Description	Packaging	Applications
Greases	CorrLube™ VpCI® Lithium EP Grease	CorrLube™ VpCI® Lithium EP Grease is lithium complex grease formulated with a premium quality, severely hydrotreated base stock. It provides excellent resistance to oxidation and has good high temperature stability.	This product is available in 14.5 ounce cartridges (10 per case), 5 gallon (19 liter) pails, and 55 gallon (208 liter) drums.	Lubricating sleeves, ball and roller bearings, Vehicle/equipment chassis, fans, areas greases are applied, bushings, pulley bearings, sliding high-friction areas, generator end bearings
	CorShield VpCI®-369	VpCI®-369 is our best inhibitor for use as an oil additive and/or temporary coating. The protective film is self-healing and moisture-displacing, providing superior protection against aggressive environments.	5 gallon (19 liter) plastic pails, 55 gallon (208 liter) drums and 11 oz. (312 g) aerosol cans.	Wire rope, electrical connections/wiring, sheltered coating, gear protectant/lubricant, long-term (5+ years) equipment lay-up, stamping oil additive, drawing oil additive, cylinders, working/moving parts
	EcoLine® Heavy Duty Grease	EcoLine® Bio-Based/Bio-Degradable Heavy Duty Grease is formulated with American-grown natural seed oil that surpasses the lubricity of most conventional petroleum based greases.	14 oz. cartridge, 5 gallon pail, 55 gallon drum	Replaces traditional mineral oil based food grade greases. Multi-metal protection.
	EcoLine® Food Machinery Lubricating Grease	EcoLine® Bio-Based/Bio-Degradable Food Machinery Lubricating Grease is a high-quality, corrosion inhibiting lubricant formulated with American-grown natural seed oil.	16 oz. (453.6 g) EcoLine® tub, 14 oz. cartridge, 5 gallon pail, 55 gallon drum	This environmentally friendly lubricating and rust preventative grease, specifically formulated to meet and exceed the demands of major food and meat processing plants, conforms to USDA H-2 criteria and USDA regulations 21CFR as a lubricant where there is no possibility of food contact in and around food processing areas.
Metalworking Fluids	EcoLine® Metalworking Fluid	EcoLine® Metalworking Fluid is formulated with biobased oil, additives, and emulsifiers and is an excellent replacement for chlorinated products.	Gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk	Add EcoLine® Metalworking Fluid to water using a high dispersion-mixing blade. Mix for 5-10 minutes. The emulsion should remain stable indefinitely. In case of separation, emulsion can be remixed.
	EcoLine® Cutting Fluid	EcoLine® Bio-Based/Bio-Degradable Cutting Fluid is a multifunctional biodegradable concentrate for metal cutting operations.	16 oz. (455 ml) squirt container, 5 gallon pail, 55 gallon drum	This liquid cools the work pieces and tools, prevents welding of metals during the metalworking process and provides excellent corrosion protection and lubrication during the cutting process. The shelf life of EcoLine® Bio-Based/Bio-Degradable Cutting Fluid is up to 24 months. Agitate before each use.
	VpCI®-344	Environmentally friendly concentrated corrosion preventive liquid/metalworking lubricant for wet tempering of galvanized and cold-rolled steel, difficult-to-produce metal stampings, wire rope, tubular products and machine parts.	5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk	Wet tempering, protection of hot-rolled, cold-rolled, and galvanized steel, coolant, quenching additives
	VpCI®-345	VpCI®-345 is a semi-synthetic coolant/lubricant for light-duty cutting and grinding. For difficult-to-produce metal stampings, tubular products and machined parts. Superior to petroleum-based coolant rust preventives.	5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk	In-plant machining, protection of hot-rolled, cold-rolled, galvanized, and aluminized steel, coolant for machining of castings, highly polished pieces, and other parts; providing superior protection between machining operations and further processing or assembly
	VpCI®-347	Liquid that provides corrosion protection for multimetals. Dilutable with water up to 1:40. Excellent lubricating and corrosion inhibiting properties. Replaces slushing oils on cold rolled and galvanized steel. For use as a metal-forming lubricant and synthetic machining coolant. VpCI®-347 is formulated for deep-draw applications.	5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk	Lubricant for heavy-duty rolling, drawing, extruding, stamping and cutting, in-plant machining, protection of hot-rolled, cold-rolled, galvanized, and aluminized steel, hydrostatic testing, corrosion protection for bearings, piping and tubular parts, housings, stampings, bar and roll stock, and structural steel during in-plant storage or domestic and export shipments, coolant for machining of castings, highly polished pieces and other parts; providing superior protection between machining operations and further processing or assembly
Oils	VpCI®-322	Provides corrosion protection to lubricating or hydraulic oils in indoor or open air conditions. Conforms to MIL P-46002B, MIL I-85062, MIL C-16173D (Grade 3), and MIL I-85062.	5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk	Add VpCI®-322 to oil at a ratio of 1 part VpCI®-322 to 9 parts oil for 24 months protection. Tanks, gearboxes, differentials - stored or shipped dry: Fog cavity interior with VpCI®-322 concentrate using 1 quart (1 liter) per 35 ft3 (1.1 m3) of enclosed space.
	VpCI®-326	Corrosion inhibitor oil additive for hydraulic oil and gearbox assemblies	32 oz. (0.92L) containers, 5 gallon (19 liter) pails, 55 gallon (208 liter) metal drums, liquid totes, and bulk	Fog interiors with VpCI®-326 concentrate at 1 liter/m3 (1 oz/ft3) of enclosed space.
	VpCI®-329	VpCI®-329 is a vapor corrosion inhibiting concentrate for use with lubricating, hydraulic and preservation oils. Conforms to MIL-P-46002B, MIL-I-85062, MIL-C-16173D (Grade 3).	5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk	Add VpCI®-329 to oil at a ratio of 1 part VpCI®-329 to 9 parts oil for 24 months protection. Tanks, gearboxes, differentials - stored or shipped dry: Fog cavity interior with VpCI®-329 concentrate using 1 quart (1 liter) per 35 ft3 (1.1 m3) of enclosed space.
	CorrLube™ Industrial Gear Oil	CorrLube™ Industrial Gear oil is a premium quality gear oil with viscosity grade ISO 220	5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk	Lubrication oils used for a wide range of open and closed gear sets: helical, herringbone, spur, bevel, and worm gears, steel and aluminum processing and power plants, mining equipment, off-road machinery, marine application
Other Lubricants	EcoLine® CLP	EcoLine® CLP is a "green" version of a multifunctional penetrant/ lubricant, which provides lubrication, penetration, corrosion protection in humid and harsh environments and cleaning	16 oz. (455 ml) spray bottles, 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes and bulk	In-plant machining, bar and chain oil, flange lubricant, biodegradable and preservative oil for machinery, locks and hinges, nuts and bolts, office machinery, penetrating oil/lubricant
	VpCI® Super Penetrant	VpCI® Super Penetrant offers a deep penetrating formulation that loosens frozen parts from locked in rust. Its deep penetrating capabilities allow the user to go through as much as 1/2 inch of rust in 30 minutes.	5 gallon (19 liter) pails, 55 gallon (208 liter) metal drums, liquid totes and bulk. It also available in aerosol form net weight 5.25oz (148.84g).	Maintenance, lubrication, temporary storage - spray a light coating on flat metal before or after metalworking, small or complex metal parts - spray on or dip in, general surface treatment - spray, dip or brush surfaces to be protected for up to 24 months, home repairs of squeaky items
	EcoLine® All Purpose Lubricant	EcoLine® Bio-Based/Bio-Degradable All Purpose Lubricant is designed for industrial, shop and home use. It contains a friction modifier and extreme pressure additive. It is safe for use on all metals and most plastics	16 oz. (455 mL), 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.	Provides greaseless lubricity and has been modified for use with extreme pressure loads. All purpose lubricant is also non-flammable.
	CorrLube™ Hydraulic Fluid	CorrLube™ Hydraulic Fluid is a fully formulated anti-wear, environmentally friendly, ecologically responsive, non-toxic fluid.	5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.	Automotive brakes, machine tools, air lines, pumps, bearings, circulating oil

LIMITED WARRANTY

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