

The LEADING Edge

NACE 2013

March 17-21, 2013 in Orlando, Florida

Each year NACE sponsors a corrosion conference and expo attracting over 6,000 corrosion experts from industry, government agencies, and academia. Over 1,000 hours of presentations and committee meetings were attended by these experts representing 69 countries. The 2nd annual for the MP Readers Choice Innovation of the Year awards were granted at this year's corrosion conference. Thanks to voters, Cortec's PTC emitter was one of ten products selected for this honor. Boris Miksic accepted the award in front of a large audience at the opening of the expo. Cortec® was well represented with 7 attendees and presentation of 3 research papers.

Tim Whited displayed his vast field experience by presenting a paper he wrote on mitigating soil side corrosion on crude oil tank bottoms with VCI. Also, Josh Hicks presented research on top of the pipeline corrosion being conducted in the Cortec® laboratory. Dr. Bavarian of California State University presented research he conducted on stress corrosion cracking in multi-alloy systems with VpCI®-337. All of these presentations were well attended and positive feedback was received from listeners. Cortec® was also represented in a committee on VCI which discussed the current issues in the industry. Topics included discussion of test method development, test standardization, and requirements of NACE presentations to be scientifically accurate.



New Products

VpCI®-328

VpCI®-328 is a water displacing, solvent cutback corrosion preventative compound lubricant, which forms an ultralight transparent oily film. This product passes all MIL-PRF-81309F requirements.

VpCI®-328 is a ready-to-use vegetable oil/solvent-based liquid for general purpose corrosion protection in a wide variety of applications. Some of these include protection of sheet metals, wire, pipes, flanges, and other fabricated and/or machined parts, guns, and a host of other products. VpCI®-328 protects against corrosion and works as an excellent lubricant; performs effectively even under the adverse condition of 100% relative humidity and in the presence of such corrosive elements as chlorides and acid salt fog.

VpCI®-328 is formulated to be used as supplied, the application includes:

- 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
- Rifles, shotguns and handguns

New Products

EcoLine® Metalworking Fluid

EcoLine® Metalworking Fluid is formulated with biobased oil, additives, and emulsifiers and 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 multi-functional biodegradable product is supplied in concentrated form and requires mixing with water before use.

High-performance characteristics make EcoLine® Metalworking Fluid ideally suited for heavy-duty stamping, cutting, milling, turning, drilling, broaching, and other machining operations. Compared to conventional cutting fluids EcoLine® Metalworking Fluid has enhanced corrosion inhibiting and lubricity properties.

When added to water in the ratio of 1:20 to 1:10, EcoLine® Metalworking Fluid develops a stable emulsion which provides excellent cooling and little or no smoke during use. When used as directed, EcoLine® Metalworking Fluid prevents corrosion during in-plant processing, storage, and export shipment for up to 12 months.

EcoLine® Metalworking Fluid is formulated to be used as supplied, the application includes:

- Lubricant for heavy-duty rolling, grinding, extruding, stamping, and cutting
- In-plant machining
- Biodegradable anticorrosion preservative for hot-rolled, cold-rolled, galvanized, and aluminized steel during operation, storage, and shipment
- Hydrostatic testing
- Machining coolant

M-533 FG

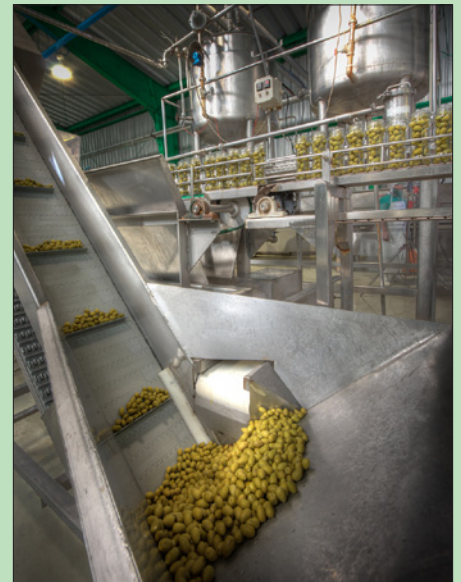
M-533 FG is a premium rust inhibitor for petroleum and synthetic lubricants, greases, and rust preventative fluids. It provides excellent demulsibility and filterability and is compatible with a wide range of additives and base stocks. Being NSF HX-1 certified, M-533 FG is permitted for use in food plants where incidental contact with food is expected.

M-533 FG is designed for formulating food grade lubricants that require rust protection, demulsibility, filterability, and water resistance at low treat levels. Although it is approved for use up to 10% if required, M-533 FG passes the ASTM D 665B* rust test in white mineral oil and PAO base oils at 0.10-0.20% additive level.

M-533 FG is formulated to be used as supplied, the application includes:

	<u>Typical Treat Levels</u>
Rust Preventive Fluids	3.00-10.0%
Hydraulic Fluids	0.05-0.5%
Circulating Oils	0.05-1.0%
Compressor Oils	0.25-1.0%
Greases	0.50-3.0%
Gear Oils	0.10-1.0%

*ASTM D 665B "Standard Test Method of Rust Preventing Characteristics of Inhibited Mineral Oil in the Presence of Water, Procedure B-Synthetic Sea Water"



VpCI®-390: Water Reducible Alkyd Enamel

VpCI®-390 is a water reducible, high gloss, enamel that provides excellent adhesion, durability, and overall performance. It is designed for air and force-dry industrial coatings for metal. The coating exhibits outstanding gloss, gloss retention, corrosion and water resistance. It is HAPs free and VOC compliant to 2.5 lbs./gal. (less exempts). Suitable for use on bare or primed metal surfaces such as: industrial machinery, racks, cranes, gas cylinders, utility trailers, and metal containers. Preliminary testing in customer's facilities showed that this product outperformed Shermin Williams coating in gloss and corrosion protection. Not recommended for direct to galvanized, aluminum, stainless, or for use in immersion applications.

Application process for VpCI®-390

VpCI®-390 may be applied with conventional spray, or airless spray. VpCI®-390 has limited use as a brush or roller coating. A film thickness of 1.5-2.0 dry mils (37.5-50 microns) is recommended. The coating dries to the touch in 20-30 min at 77°F (25°C).

Metals Protected

- Carbon steel
- Stainless Steel**
- Aluminum**
- Galvanized steel**



Cortec® Working with Minnesota Department of Transportation

MNDOT experiences excessive corrosion on all state vehicles plows, maintenance trucks, and police cars. After testing by Cortec® Labs to prove the effective removal of Sodium Chloride and Magnesium Chloride salts as well as provision of flash corrosion protection, MNDOT has exchanged their current cleaner with VpCI®-414 at 16 locations. Cortec® will eventually be used at all MNDOT locations state wide as our Distributor is able to establish effective delivery to each district.

The procedure for application: Vehicles are "rinsed" down with a Hotsy steam cleaner to remove ice and major salt deposits. Secondly VpCI®-414 concentrate is sprayed on with a battery powered (AG type) sprayer and allowed to penetrate for approximately 5 minutes. Last, the vehicle is "washed" with the Hotsy pressure washer with a low concentration of VpCI®-414 (which is metered into the wash system).

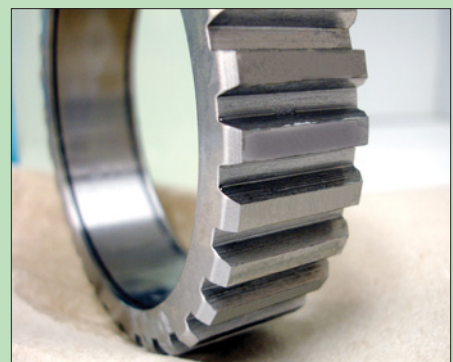
Cortec® is also working with Metro Transit Bus and Light Rail to establish an effective wash system for undercarriages using VpCI®-414 as well as providing an effective cleaner for the entire outsides of buses and light rail cars. For this application, Cortec® Labs has developed VpCI®-406 Bus Wash. This wash effectively cleans as well as providing a reduction of water spotting due to the extremely hard water at the Rueter Bus Maintenance Facility in Brooklyn Center MN. At this location, approximately 800 buses per week are washed and prepped.

At Metro Transit (St. Paul Maintenance Facility), the repair and recoating of wheel wells and undercarriages is accomplished by sand blasting and an application of Corverter® (via pressurized pot sprayer) and then a top coat of VpCI®-395. This process replaced an aerosol underbody coating which contained very high VOC. Cortec® is introducing this process to MNDOT locations.

Fast cleaning of gear with VpCI®-414



Before



After

Cortec® NSF International Certifications

Founded in 1944, NSF International is committed to protecting and improving human health on a global scale. NSF International is an independent, not-for-profit organization that provides standards development, product certification, auditing, education and risk management for public health and the environment. Manufacturers, regulators and consumers alike look to NSF International for the development of public health standards and certification that help protect the world's food, water, health and consumer products.

NSF International is an accredited, third-party certification body that tests and certifies products to verify they meet these public health and safety standards.

What is Third-Party Certification?

Third-party certification means that an independent organization has reviewed the manufacturing process of a product and has independently determined that the final product complies with specific standards for safety, quality or performance. This review typically includes comprehensive formulation/material reviews, testing and facility inspections. Most certified products bear the certifiers "mark" on their packaging to help consumers and other buyers make educated purchasing decisions.

Recognized by regulatory agencies at the local, state, federal and international level, the NSF Certification Mark means that the product complies with all standard requirements. NSF conducts periodic unannounced inspections and product testing to verify that the product continues to comply with the standard. A complete list of products that have been certified by NSF can be found at www.nsf.org (click search listings in top-right corner)

Why Do Companies Seek NSF Certification?

Independent, third-party testing and certification through NSF helps organizations:

- Demonstrate compliance with national or international standards and regulations
- Demonstrate independent validation and verification of their commitment to safety and quality
- Increase credibility and acceptance with retailers, consumers and regulators
- Benefit from enhanced product quality and safety

NSF International approvals:

VpCI®-422:

for the use in food plant as a rust remover


M-533FG:

as an anticorrosion additive to the oils used in the food plant on machinery (gear oil, hydraulic oil, etc) for incidental contact with food (HX-1 rating).

Cortec® has many more products approved by NSF International and/or Underwriters Laboratories (UL) based on NSF requirements. These are: Drinking water additives (NSF 60)(Cortec® HC-2030, -2050, -2060, -2075 and -2090) MCI® Admixture additives (UL, NSF 61)(MCI®-2005, -2005NS, -2006, and -2006NS) MCI® Surface Applied (UL, NSF 61)(MCI-2020, -2020M, and -2120) VpCI®-395 (UL, NSF 61)



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