BioCortec® Newsletter

April 2019

Cortec® Offers Biobased Paint Removers as Answer to Methylene Chloride and NMP Bans

In March, the U.S. Environmental Protection Agency (EPA) issued a rule against the sale of consumer paint removers containing methylene chloride. The decision was based on unreasonable and even fatal health impacts of methylene chloride exposure. The prohibition will take several months to fully go into effect. The EPA advises consumers who want to avoid the accompanying health risks to stay away from methylene chloride strippers. In addition to this official rule from the EPA, many retailers have already voluntarily chosen to pull paint strippers containing methylene chloride and N-methylpyrrolidone (NMP) off the shelf.

Cortec® has answered this ban in the paint removal market with EcoLine® 4320 and 4330, biobased paint removers that do not contain either methylene chloride or NMP. EcoLine® 4320 and 4330 are heavy-duty paint strippers designed to remove coatings, inks, and resins from metals, concrete, and wood surfaces. They do not contain any EPA-listed cancer-causing compounds or any California Prop 65 components that cause cancer, birth defects, or other reproductive harm. The products are formulated with renewable materials and recycled solvent. They contain 50% USDA certified biobased content and are qualified products under the mandatory federal purchasing initiative of the USDA BioPreferred® Program (for more information, go to http://www.biopreferred.gov).

EcoLine® 4320 and 4330 are VOC compliant to the California Regulation for Reducing Emission from Consumer Products.* They are non-flammable and do not contain chlorinated solvents, toluene, or acetone. Unlike methylene-chloride-based products which dry quickly upon application, the relatively low volatility of EcoLine® 4320 and 4330 allows the products to stay on the surface to soften, penetrate, and remove the coating.

EcoLine® 4320 and 4330 can strip a wide variety of paints in 15 to 30 minutes, depending on the number of coating layers and age of the coating. They also contain flash corrosion inhibitors to protect against flash rust and tarnishing during the stripping process when removing paint from metal surfaces. EcoLine® 4320 can be used in dip tanks and on horizontal surfaces. EcoLine® 4330 is a gelled version for use on large or complicated objects or vertical and overhead surfaces.

To learn more about EcoLine® 4320 and 4330, please visit: https://www.cortecvci.com/whats_new/announcements/EcoLine_4320-4330.pdf

*California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 8.5, Article 2, Sections 94507-94517

Using Biobased Surface Prep Products to Remove Rust

There are many ways to remove rust. Traditional methods often include abrasion by hand grinding or sand and water blasting. These techniques are often cost-prohibitive, labor intensive, or limited by location (e.g., an offshore environment or remote area). Depending on the parameters of the project, Cortec's biobased rust removers—VpCI®-422 and VpCI®-423—may be just the right alternative needed for projects with these limitations.

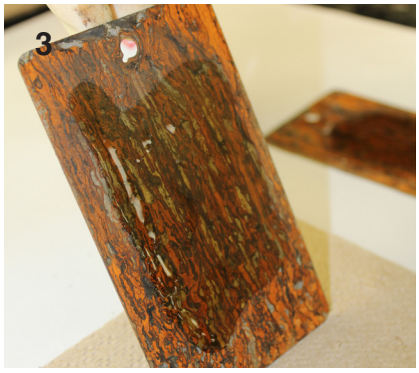
VpCI®-422 and VpCI®-423 are relatively easy to use and are safer than many other rust removal chemicals on the market due to their lower acidity and their large percentage of ingredients commonly used in the food industry. They also contain a flash corrosion inhibitor for copper and steel.

VpCI®-422 is a liquid version that is excellent for use in dip tanks. It contains 92% USDA certified biobased content. VpCI®-423 is a gelled version for use on vertical surfaces. It contains 91% USDA certified biobased content.

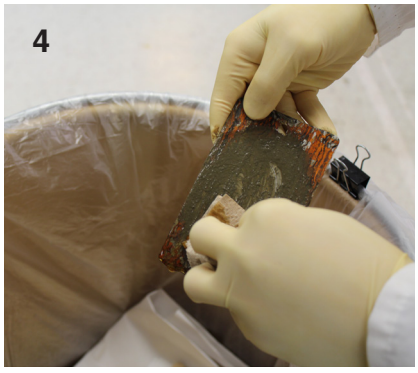
The following images show how VpCI®-423 can remove a significant amount of rust in approximately 30 minutes.

A severely rusted steel panel.

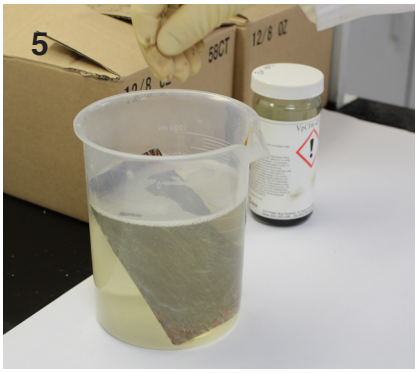
VpCI®-423 should be applied to the rusty surface and left on for about 15 minutes. It is important not to let the product dry. Additional 15-minute applications can be done as needed for severe rust.



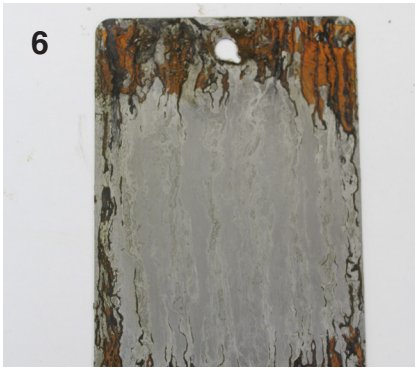
The gelled viscosity allows VpCI®-423 to be used on vertical surfaces.



After each 15-minute application, VpCI®-423 can be wiped off along with the rust. A basic scrub pad works well.



The surface can be cleaned and neutralized in an alkaline wash solution (a <5% solution of VpCI®-416 was used here).



Depending on rust severity, a second application can be performed. The image at left show how much rust was removed in approximately 30 minutes (two 15-minute applications), leaving behind a clean surface perfect for applying a coating!

Cortec® Biotechnology Campus Receives Quality Management Certification

Cortec® is pleased to announce the recent ISO 9001:2015 Quality Management System (QMS) certification of Cortec® Biotechnology Campus (CBC) in Sarasota, Florida. CBC passed the official audit February 27th, 2019, with flying colors. Audit highlights included CBC's achievement of a 99.9% on-time shipping record and a commendation on full implementation of the standard with internal audits made and quality objectives met, among other accomplishments.

The scope of CBC's certification applies to the following areas:

- Manufacturing of Corrosion Protection Systems
- Metal Cleaning & Treating Chemicals
- Packaging Products
- Process & Polymer Additives & Concrete Protection Products

CBC currently focuses on manufacturing several of Cortec's popular biobased products: MCI®-2005, MCI®-2005 NS, and BioCorr®. In the case of MCI®-2005/2005 NS, a second MCI® admixture manufacturing site presents important opportunities to contractors in the southeastern United States who can earn credits toward LEED certification by using these materials within a 500-mile (805 km) radius of where they are made.

Soy-Based Rust Preventative Keeps Transmissions from Corroding Before Export

Transmission manufacturers now have a sustainable way of protecting new transmissions from corrosion during storage and export shipping, thanks to soybeans and the work of Cortec® Corporation, which places a strong emphasis on developing sustainable corrosion solutions where possible.

With this environmental consciousness and the needs of transmission manufacturing in mind, Cortec® developed an effective soy-based rust preventative called BioCorr® ATF. BioCorr® ATF is designed to ensure the residue is compatible with automotive transmission fluid (ATF) and other important aspects of transmission manufacturing. It is also easier to use than traditional petroleum-based rust preventatives. Another advantage is that BioCorr® ATF contains 54% USDA certified biobased content and is a qualified product under the mandatory federal purchasing initiative of the USDA BioPreferred® Program (www.biopreferred.gov).

BioCorr® ATF turned out to be an excellent solution (with a sustainable side-benefit) for a large transmission manufacturer experiencing costly rust problems in the phase between manufacturing and export shipment. Like many other facilities, the OEM had been relying on a standard rust inhibitor additive used in their wash water to provide the necessary protection until the transmissions were packaged in anti-corrosion bags for export shipping. This could be as much as nine months later. Corrosion became a costly interim problem because standard flash corrosion inhibitor wash additives typically do not provide protection for more than one month. This left the brand-new transmissions vulnerable for one to nine months while sitting in a warehouse without temperature or humidity controls. The risk of corrosion increased significantly during the summer months, called "corrosion season" in the Midwest.

Cortec® worked closely with engineers at the manufacturing plant to meet OEM compatibility needs with BioCorr® ATF. The rust preventative does not leave a tacky residue—an important characteristic for hot, fast-moving robotic automotive processing where employees have to stop the equipment and workflow if parts stick together. BioCorr® ATF can also be easily removed in future washing processes by the end assembler, if desired.

After the necessary approval process, the OEM adopted the use of BioCorr® ATF, which is now sprayed on transmissions after the final washing process. BioCorr® ATF protects new transmissions in the period between manufacturing and export shipment. It also offers an additional layer of protection during international export, when the transmissions are packaged in VpCI® anti-corrosion bags, as well. When the transmissions arrive at their destinations around the world, end users will be able to easily remove the rust preventative in standard rinse water processes if desired, making BioCorr® ATF an excellent sustainable and practical alternative to traditional petroleum-based rust preventatives that are more difficult to remove.

Learn more about BioCorr® ATF: https://www.cortecvci.com/Publications/PDS/BioCorr-ATF-Rust-Preventative.pdf

Cortec's Recyclable/Repulpable VpCI® Papers Offer Versatile Packaging Options

VpCI® papers and linerboards offer a mainly plant-based alternative to fossil-fuel-based plastic bags and traditional rust preventatives. Made from high quality neutral Kraft paper and coated with Cortec's water-based VpCI® coatings, Cortec's VpCI® papers and linerboards are easy ways to incorporate corrosion protection into a packaging system. Sometimes all that is needed is an extra sheet of VpCI® paper to protect against damaging corrosion from condensation as metal parts transition through different environmental conditions (e.g., temperature and humidity swings). Other times, an additional water-based moisture barrier is helpful.

Cortec's VpCI® papers and linerboards can be used to wrap, interleave, and divide metal parts while providing corrosion protection. Wide format options nearing 100 inches (2.5 m) allow greater packaging flexibility than standard VCI papers on the market. Most Cortec® VpCI® papers are fully recyclable/repulpable, including several moisture-barrier options, which—unlike traditional poly-coated and waxed papers—can be recycled through normal channels without having to remove the coating first.

Some excellent options for corrosion and/or moisture protection include the following:

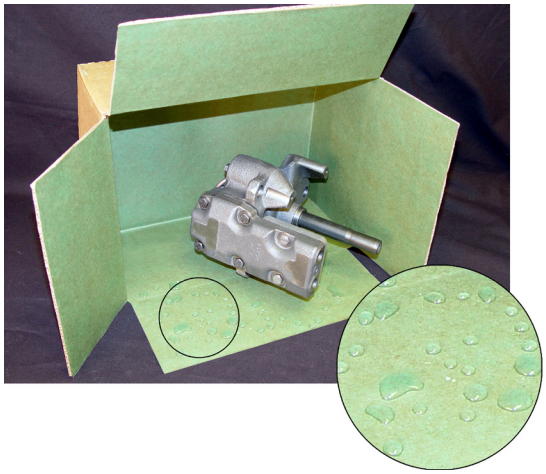
Basic Corrosion Protection

CorShield® VpCI®-146 can be used for wrapping or interleaving coils, wire reels, raw and machined forgings and castings, springs, bearings, fasteners, tubes, pipes, nails, tools, engines, and more. The paper provides corrosion protection during storage or shipping or during work-in-process. It is also available in a creped version where extra cushioning is needed.

Corrosion Protection + Moisture Barrier

EcoShield® VpCI®-144 combines corrosion protection with a water-based moisture barrier that—unlike traditional poly-coated and waxed papers—can be recycled through normal channels without expensive processes to remove the coating from the paper before processing.

Corrosion Protection + Moisture Barrier + Linerboard



EcoShield® VpCI® Linerboard is another good option for corrosion protection and moisture resistance on a heavier paper weight. This stiffer form of sheeting can be used to line crates and boxes or to separate parts from one another. It is also fully recyclable/repulpable thanks to Cortec's water-based moisture barrier coating.

Corrosion Protection for Small Compartments

VpCI®-143 Paper Emitters are a great corrosion-inhibiting choice for protection of metals in small compartments up to 25 cubic inches (390 cm^3). Inserting these one-by-one-inch (6.4 cm^2) linerboard squares into a small void space will condition the area with corrosion inhibiting vapors to protect the enclosed metal surfaces. It is a quick, easy way to add corrosion protection to small compartments.

Learn more about Cortec's premium corrosion inhibiting papers: https://www.cortecpackaging.com/vpci-papers/

Biobased MRO at Your Service

Cortec® brings biobased content even to everyday MRO (maintenance, repair, operations) products for use around the plant.

Three of these biobased spray-can products were featured in the March 2019 SPRAY magazine update sharing news from contract fillers across the U.S. (see http://www.industry-publications.com/digitalissues/Spray_March_2019/page_17.html):

- **EcoAir® Biobased CLP** is one example of a cleaner/lubricant/protectant that utilizes a canola oil base. It can be used for many everyday maintenance functions such as loosening frozen and rusty bolts, maintaining locks and hinges, removing dirt and grime, and providing general lubrication. EcoAir® Biobased CLP contains 89% USDA certified biobased content and is also a qualified product under the mandatory federal purchasing initiative of the USDA BioPreferred® Program. This handy multifunctional product is packaged in Cortec's EcoAir® brand of air-powered bag-on-valve spray cans, which do not contain CFCs or typical propellants.

- **EcoLine® ELP** is a relatively recent aerosol product release from Cortec®. This soy-based product offers extreme lubrication for general purpose use to quiet squeaky hinges and moving parts, loosen rusty bolts, and cool basic metal cutting operations. It can be packaged in convenient aerosol spray can form.

- **EcoAir® BioClean Spray** is another general maintenance product packaged in EcoAir® bag-on-valve cans. Derived from coco-oil and corn syrup, it provides gentle cleaning action with some corrosion inhibiting properties. It can be sprayed onto soiled surfaces to gently clean dirt, soil, dust, debris, and mold/mildew stains from wood, metal, plastics, and other hard surfaces.

Another helpful biobased MRO product from Cortec® is **EcoLine® Biobased Rubber Revitalizer**, a soy-based product designed for cleaning and protecting genuine and synthetic rubber against the damaging effects of drying and sun damage. This makes an excellent companion solution for revitalizing rubber parts that frequently come into play when restoring and preserving metal equipment. EcoLine® Biobased Rubber Revitalizer contains 68% USDA certified biobased content and is a qualified product under the mandatory federal purchasing initiative of the USDA BioPreferred® Program (www.biopreferred.gov).

Cortec® Biobased Products for High-Chloride Applications

Cortec® offers several products specifically intended for use in applications where high-chloride content poses an increased risk of corrosion.

EcoLine® VpCI®-642 is a corrosion inhibitor for offshore hydrotesting with seawater. It effectively protects ferrous metals from corrosive, high-chloride environments by forming a protective layer on metal surfaces and inhibiting cathodic corrosion reactions. This allows for tremendous cost savings by allowing offshore oil and gas facilities to use the abundant quantity of readily available seawater for hydrotesting purposes. EcoLine® VpCI®-642 contains 93% USDA certified biobased content.

Learn more: https://www.cortecvci.com/Publications/PDS/EcoLine_VpCI-642.pdf

FlashCorr® VpCI® is a highly effective cleaner with a unique ability to neutralize and remove salt deposits such as sodium chloride and other deicing salts. It also provides flash corrosion protection. It is especially suited to washing winter salt-spreading equipment, marine equipment, and other metals exposed to high levels of salt. It has even been used for extra chloride-removing power on Saturn V rocket engines recovered from the Atlantic Ocean (read more: Saturn V Rocket Engine Conservation). FlashCorr® VpCI® contains 64% USDA certified biobased content.

Learn more: https://www.cortecvci.com/Publications/PDS/FlashCorr_VpCI.pdf

M-605 PS is a corrosion inhibitor powder effective in $CaCL_2$ based deicers. It can also be used as an inhibitor in closed-loop cooling system brines. M-605 PS contains 98% USDA certified biobased content.

Learn more: https://www.cortecvci.com/Publications/PDS/M-605-L-PS.pdf

CORTEC CORPORATION
Environmentally Safe VpCI®/MCI® Technologies

4119 White Bear Parkway, St. Paul, MN 55110 USA
Phone (651) 429-1100, Fax (651) 429-1122
Toll Free (800) 4-CORTEC, E-mail productinfo@cortecvci.com
Printed on recycled paper ♻ 100% Post Consumer

Created: 04/2019