August 2015

CORTEC Vision

CORTEC CORPORATION

Environmentally Safe VpCI®/MCI® Technologies

Record Number Of NACE Reviewed Cortec® Papers Presented at CORROSION 2015

Cortec® first became involved with NACE in 1979 and has been continually engaged over the years as NACE has grown to serve nearly 33,000 members in 116 countries. This year, Cortec® submitted a record number of seven papers to NACE for review; all of which were presented at CORROSION 2015. Cortec's founder and CEO Boris Miksic, FNACE along with Dr. Behzad Bavarian lead the company with three papers; two papers were written by Ming Shen, one by Robert Kean, and one by Eric Uutala. NACE CORROSION 2015 included 7,000 corrosion professionals and 450 exhibiting companies focused on the prevention of corrosion worldwide.

NACE International was established in 1943 by eleven corrosion engineers from the pipeline industry as the "National Association of Corrosion Engineers." The founding engineers were originally part of a regional group formed in the 1930's when the study of cathodic protection was introduced. Since then, NACE International has become the global leader in developing corrosion prevention and control standards, certification, and education.

To view the full articles, please copy and paste the links below to your browser .

"Comparison of the Corrosion Protection Effectiveness of Vapor Corrosion Inhibitors and Dry Air System" by Dr. Behzad Bavarian, Yashar Ikder, Babak Samimi, Lisa Reiner, and Boris Miksic, FNACE
http://www.cortecvci.com/Publications/Papers/Comparison-of-the-Corrosion-Protection-Effectiveness-of-Vapor-Corrosion-Inhibitors.pdf

"Evaluating Efficacy of Volatile Corrosion Inhibitors versus Traditional Methods for Preservation of Industrial Equipment and Operational Spare Parts" by Eric Uutala, Cliff Cracauer, and Boris Miksic, FNACE **http://www.cortecvci.com/Publications/Papers/Evaluating-Efficacy-of-Volatile-Corrosion-Inhibitors.pdf**

"Comparison of the Corrosion Protection Effectiveness of Vapor Corrosion Inhibitor and Nitrogen Blanketing System" by Dr. Behzad Bavarian, Jia Zhang, Lisa Reiner, and Boris Miksic, FNACE
http://www.cortecvci.com/Publications/Papers/Comparison-of-the-Corrosion-Protection-Effectiveness.pdf

"Multifunctional Hydrocarbon Cleaning Package: Removing, Degrading, and Protecting" by Ming Shen, Ali Bayane, Diana Di Marco, Margarita Kharshan Ph.D., Liz Austin, and Brian Benduha
http://www.cortecvci.com/Publications/Papers/Multifunctional-Hydrocarbon-Cleaning-Package.pdf

"Improved Packaging Materials Made from Barrier Coated Paper Incorporating Vapor Phase Corrosion Inhibitors" by Robert Kean Ph.D., Margarita A. Kharshan Ph.D., and Boris Miksic FNACE
http://www.cortecvci.com/Publications/Papers/Improved-Packaging-Materials.pdf

"Investigation of Bio-Based Aromatic Acids as Corrosion Inhibitor" by Ming Shen, Alla Furman, and Rita Kharshan Ph. D.
http://www.cortecvci.com/Publications/Papers/aromaticAcids.pdf

"Protection Effectiveness of Vapor Corrosion Inhibitor for Corrosion Under Insulation" by Dr. Behzad Bavarian, Babak Samimi, Yashar Ikder, Lisa Reiner, and Boris Miksic, FNACE
http://www.cortecvci.com/Publications/Papers/5448_CUI_bavarian_F13.pdf

Cortec's Bull Frog™ Products: A Huge Hit On Amazon!

The reviews are in and Cortec's Bull Frog™ products are a hit on Amazon! The Bull Frog™ Rust Blocker Emitter Strips received 4.8 out of 5 stars, the Bull Frog™ Rust Blocker Emitter Shield also received 4.8 stars, and finally, the Bull Frog™ Rust Blocker Emitter Cups received the full 5.0 stars on the Amazon website.

Bull Frog™ products utilize Cortec's patented Vapor phase Corrosion Inhibitor (VpCI®) technology which has been perfected and proven in industrial and military applications around the world. Bull Frog™ offers a range of products to protect our clients' investments and help them to perform at their optimal level. Bull Frog™ products are safe for our clients and the environment. Although each Bull Frog™ product was created to perform a different task, each employs the same VpCI® Technology that has been proven to safely and effectively remove and control corrosion.

BULLFROG
SAFER FOR THE POND WE LIVE IN.

The Bull Frog™ product reviews rave:

"This is my seventh year to use these blockers as well as the larger shield. Although I live near the coast in a high humidity area these blockers work!"

"Great product. Keeps my tools like new!"

have used this product for more than a decade and have had no rust on my guns."

"Can't imagine not having one of these in my safe, They work great and give peace of mind to a fussy gun owner."

"Outstanding product." "Tried and True."

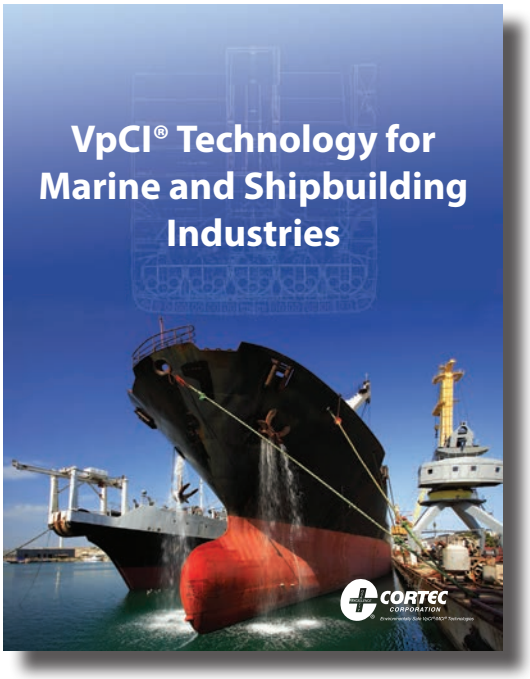
For more information on Cortec's Bull Frog™ products please visit: http://www.bull-frog.com

Pavlo Solntsev, Product Development Chemist

Cortec® Laboratories welcomes our new Product Development Chemist, Pavlo Solntsev. Prior to joining the Cortec® team (in June), Pavlo held postdoctoral research positions in Chemistry at the University of Minnesota (UMN), first at UMN Duluth, then at the main campus in the Twin Cities. Pavlo is originally from the Ukraine, where he earned his Ph.D. in Chemistry. He brings broad technical skills in chemical synthesis, analysis, and material science. Pavlo's work is focused on new product development. He is especially tasked with developing next generation technologies to make sure that Cortec® remains the world's leader in safe, cost effective, and environmentally friendly products for corrosion prevention. Pavlo's international experience is also a plus for his work at Cortec®. He is fluent in English, Ukrainian, and Russian.

New Available Brochures

VpCI® Technology for Marine and Shipbuilding Industries Brochure



VpCI® Technology for Marine and Shipbuilding Industries Brochure delivers information on Cortec's latest-technology products and services in the field of marine and shipbuilding industries! It is well known that corrosion causes destruction of structures and equipment as well as the loss of valuable resources, contamination of products, reduced efficiency, and high maintenance costs.

Damages from corrosion in shipbuilding or the ones that occur in the exploration of various vessels are especially harsh. Corrosion protection of such structures and constructions make a big part of the cost of manufacturing process. Quality corrosion protection in the construction phase of the ship is of crucial importance for its functioning and use due to it's a demanding and complex structure, exposed to extremely aggressive environments.

Optimal and smart corrosion protection is one of the key factors in the quality and price of the ship. Structures in shipbuilding, offshore and marine industries contain parts that are difficult to access or can even be completely inaccessible for quality and long-lasting protection. Parts of the ship structure are derived from a number of brackets, frames, stiffeners, and reinforcements which makes proper preparation and coatings protection difficult.

In all of these cases the most efficient and economical technical solution is the use of high- technology, globally renown patented VpCI® corrosion inhibitors. This special group of inhibitors manufactured by Cortec® Corporation protects the metals from atmospheric corrosion and is able to stop corrosion at a molecular level. The organic substances vaporize and travel to all parts of the metal surfaces reaching even inaccessible areas.

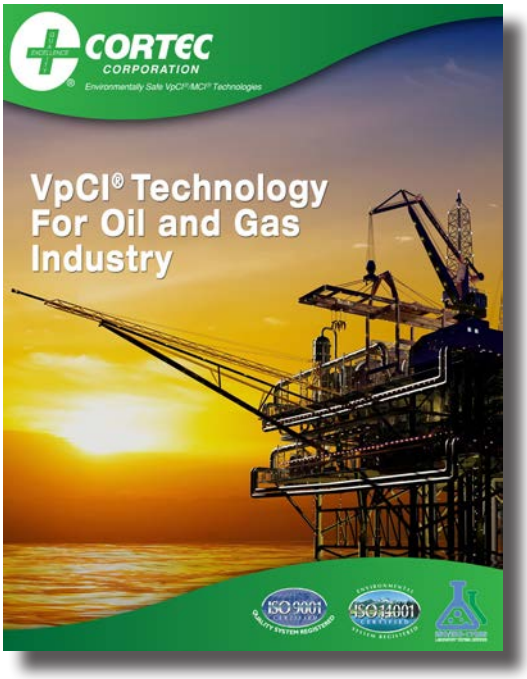
VpCI's have a very high range of application and their utilization is the result of technological as well as economic progress, when it comes to corrosion protection in shipbuilding. They are successfully and increasingly used in shipbuilding and marine industries due to their excellent properties including specific ability of protecting hard to reach areas. VpCI® inhibitors are highly recommended for protection of inaccessible areas of marine structures such as: keel, rudder, rubbing strip etc. They are also applicable and highly efficient in the protection of pipelines, marine and naval equipment as well as electrical contacts.

After contact with the metal surface, vapor condenses into air and forms a thin monomolecular film that protects the metal. This protective layer re-heals and self-replenishes through further condensation of the vapor. VpCI® reaches every area of the metal part, protecting its exterior as well as hard-to-reach interior surfaces. It provides complete product protection during storage, and during domestic and overseas shipments.

BENEFITS OF VpCI® INHIBITORS IN SHIPBUILDING

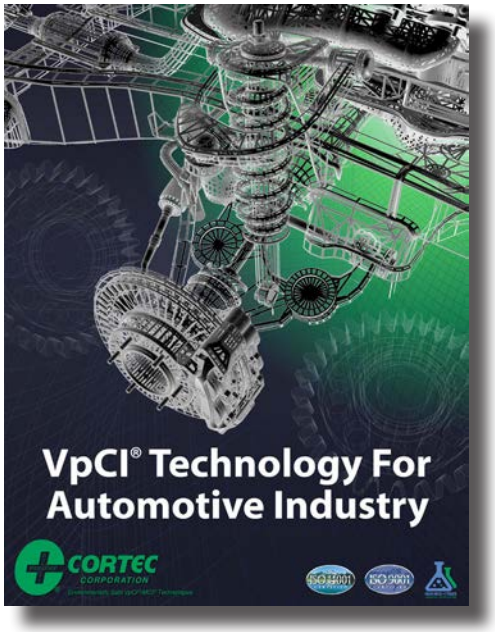
- Multifunctional products
- More effective protection
- Environmental Safety
- Easy application
- Improved health, safety, and pollution control
- Elimination of extra processing steps: in most cases there is no need to remove the VpCI®/MCI® product.
- Extended equipment life
- Little or no surface preparation
- Prevents further corrosion of ferrous surfaces
- VpCI®- layer does not have to be removed prior to processing or use
- VpCI® does not interfere with operation of mechanical components
- Good temperature resistance
- High resistance of adsorbed protective layer against corrosion

VpCI® Technology for Oil and Gas Industry Brochure



The new "VpCI® Technology for Oil and Gas Industry" Brochure includes information on the numerous industry leading products and services that Cortec® has to offer. With applications in upstream, midstream, and downstream businesses, Cortec® and our products are valuable resources to the oil and gas industry. The brochure also includes a buyer's guide with product descriptions, applications, and dosage information.

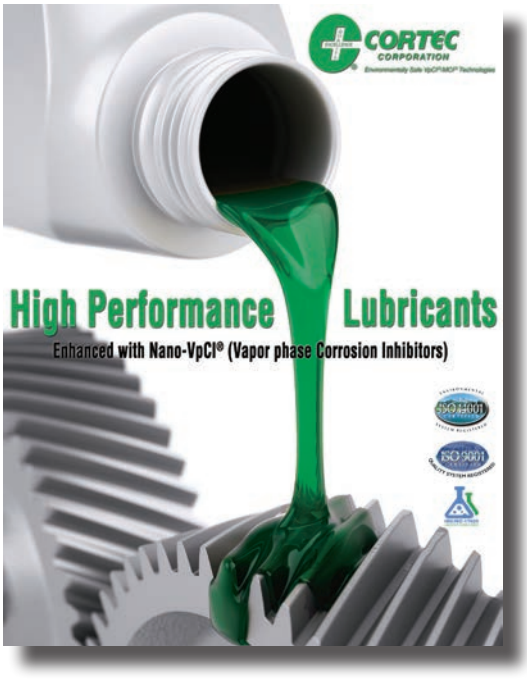
VpCI® Technology for Automotive Industry Brochure



This brochure delivers information on all that Cortec® products have to offer our customers and clients in the automotive industry. The available automotive products are detailed and categorized by their use. The brochure illuminates the need for Cortec® products in applications such as de-rusting, protection of raw materials, shipping, and storage.

High Performance Lubricants Brochure

The High Performance Lubricants Brochure delivers information on all that Cortec® lubricants have to offer our customers and clients. The available lubricants are detailed and categorized into four categories: greases, metalworking fluids, oils, and other lubricants. The brochure includes a buyer's guide that expands upon the products' descriptions, packaging options, and applications.



Cortec® lubricants provide lubrication and corrosion protection in humid and harsh environments by utilizing Nano-VpCI® (Vapor phase Corrosion Inhibitors). Cortec® not only offers highly effective corrosion inhibitors, but they also provide environmentally friendly options. Many products are USDA certified as biobased products. Cortec® lubricants can be used to increase service life on conveyors, chains, cables, hinges, rollers, shafts, rails, pins, bearings, machinery, drives, motors, or doors.

With years of experience and knowledge, Cortec® understands the needs of the market. In order to facilitate and achieve success, the main purpose of this brochure is to provide formulators with up to date information on new products, applications, and changes within the lubricants line of products. Cortec® lubricants integrate many technologies along our VpCI® chemistry in order to eliminate corrosion caused by corrosive fluids, chlorides, or humid environments.

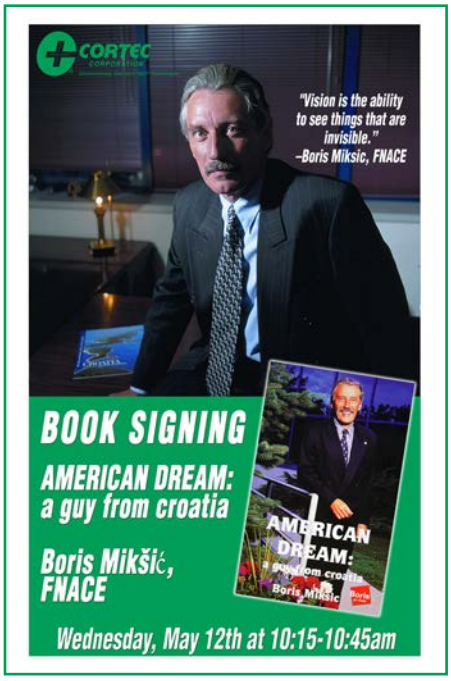
Cortec® Recognized for Innovative EcoAir® Technology!

The 2015 Canmaker Innovations Magazine recognized Cortec® EcoAir® VpCI®-414 for its use of a four-layer pouch and pressurized air to replace chemical propellants in aerosol packaging. The Canmaker Innovations is dedicated to recognizing the immense amount of work that takes place within the metal packaging industry each year.

Cortec's EcoAir® products are a major step forward in spray technology by providing aerosol products that are powered by compressed air and not by traditional chemical propellants. This technology is innovative because the product is filled into a four-layer Mylar EcoPouch™ which is inserted into the can. Once pressurized, the bag is filled. As the valve is depressed, the surrounding pressure expels the bag's internal fluids. Cortec® EcoAir® VpCI®-414 clings to ceilings and vertical surfaces in hard to reach areas. It quickly removes dirt and grease on numerous metals while preventing further corrosion. The major advantages of the EcoAir® technology are:

- Nonflammable
- Spraying in any direction, even upside down
- No product contamination by propellant
- Safer to ship and store, with very low or no environmental impact
- Unique water-based products

Boris Miksic, FNACE Keynote Speaker At Corrosion UAE!



Cortec® Middle East was the Silver Sponsor for Corrosion UAE, a biannual official NACE event held at the St. Regis Hotel in Abu Dhabi. The new NACE UAE Corrosion Conference from May 12-14, 2015 identified corrosion issues and challenges that industries in the Middle East are faced with every day. Leading corrosion professionals from around the world addressed the solutions and joined together with attendees to discuss preventative actions and resources.

The 2015 technical program contained 45 presentations featuring specialists from around the world. The most anticipated of these presentations were the keynote sessions presented by two world-renowned experts: Cortec's founder and CEO Boris Miksic, FNACE and Dr Chris Fowler. Boris shared the challenges, setbacks, and triumphs of his journey to create a successful corrosion control company in his keynote speech "Nuts and Bolts of How to Build a World-Class Company and Have Fun in Life." Attendees also got a chance to speak to Boris, the author of "American Dream: A Guy from Croatia", at his book signing on Tuesday, May 12th. In the Corrosion Control Chemicals session, Cortec® Middle East's Usama Jacir presented Boris Miksic, FNACE and Dr. Behzad Bavarian's NACE reviewed paper "Comparison of the Corrosion Protection Effectiveness of Vapor Corrosion Inhibitor and Nitrogen Blanketing System."

Utilizing Cortec® Corporation's association with NACE International, Cortec® Middle East continues to play an active role with different NACE chapters in the MENA region. Cortec® Middle East provides optimum value solutions for industries throughout the Middle East and North Africa. Cortec® products apply cutting edge environmentally friendly technologies to tackle some of the industries most challenging corrosion problems. Cortec® Middle East continues to strengthen and expand its regional presence in the corrosion control industry.

New Product

CorShield® VpCI®-146 Creped Paper
Packaging For Multi-Metal Corrosion Protection!

Cortec® values our clients' well-crafted products and continues to create corrosion protection solutions to protect these assets. With this in mind, Cortec® introduces CorShield® VpCI®-146 Creped Paper powered by Nano VpCI® - a premium corrosion inhibiting paper that is environmentally safe, non-toxic, biodegradable, and does not contain nitrites, phosphates, or silicates. CorShield® VpCI®-146 Creped Paper utilizes Cortec's patented Vapor phase Corrosion Inhibiting (VpCI®) technology to provide a revolutionary way to protect metals in enclosed packages.

CorShield® VpCI®-146 Creped Paper is made from the highest quality Neutral Natural Kraft (NNK) paper without any chemical bleaching and is fully recyclable and repulpable. Without any chemical concentrations to calculate or a chemical tank or application system to maintain, CorShield® VpCI®-146 Creped Paper is easy to use. Once a product is wrapped in the creped paper, the VpCI® technology goes to work to protect it from corrosion while the structure of the paper provides protection from damage during transportation by delicately cradling the product.

The VpCI® coating on the creped paper vaporizes to reach all metal surface areas and provides complete corrosion protection. The unique Cortec® VpCI's form a very thin and effective protective layer that does not alter the appearance of products or require removal before further processing or use. The protective layer does not influence properties of most sensitive electrical parts, including conductivity and resistance. Parts protected with CorShield® VpCI®-146 Creped Paper can be painted, welded, and soldered.

This biobased, sustainable, and renewable Creped Paper can be used to protect products for storage and shipment in a variety of ways: single item packaging, interleaving, end closures for shipping tubes, inserting strips for recessed areas in large packages, and as sheet liners or separators between products. It is particularly suitable for the bearing industry as CorShield® VpCI®-146 Creped Paper offers cushioning, multi-metal corrosion protection, and causes the "pooling" effect for RP oils. CorShield® VpCI®-146 Creped Paper protects carbon steel, stainless steel, galvanized steel, cast iron, aluminum alloys, copper, brass, and solder.

Applications include:

- **Bearing Protection During Storage and Shipment**
- **Metal Producing: Coils, Wire Reels, Plate, Bar, Etc.**
- **Metal Forging and Die Casting: Raw and Machined Forgings and Castings**
- **Metalworking: Stamping, Sheet Metal Work, Springs, Bearings, Fasteners, Tube, Pipe, Nails, Etc.**
- **Finished Products: Engines, Machinery, Equipment, Tools, Hardware, Appliances, Instruments, Motors, Etc.**
- **Electrical and Electronic Components, Controls, Etc.**

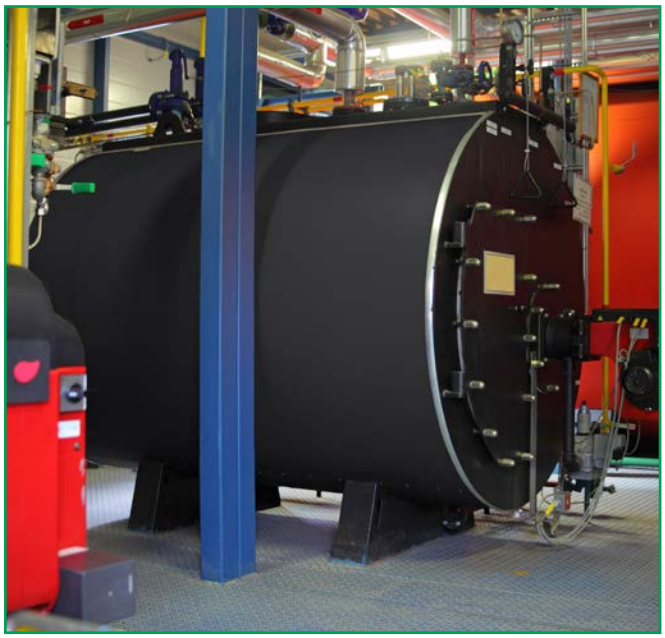
Cortec's CorShield® VpCI®-146 Creped Paper conforms to NACE Standard RP0487-2000 and is RoHS compliant.

New Product

Cortec® Introduces VpCI®-386 HT Black

High Heat Resistant Coating Solution For Any Application!

Cortec® Corporation, the Global Leader in Innovative Corrosion Protection Solutions, introduces VpCI®-386 HT Black - a unique, high heat resistant water-based acrylic silicone primer/topcoat that provides protection in harsh, outdoor unsheltered applications!



One of the biggest challenges in maintaining spares and redundant machinery in a prime state is keeping it from corrosion and deterioration. If conventional paint is used to cover corroded areas, the paint eventually cracks and the areas begin corroding again. But if VpCI®-386 HT Black is applied to areas that are cracked and corroded, it will protect the equipment and months later the areas will not show any signs of further corrosion.

The protective coating significantly delays the reaction of metal ionization and water permeation, which protects against corrosive electrolyte and aggressive environments, thus preventing corrosion. VpCI®- 386 HT Black provides a fast-drying thixotropic coating that is resistant to sagging or running. This unique coating offers extended protection for sheltered, unsheltered, outdoor, or indoor conditions. Thermally stable when dried from -150°F to 500°F (-78° to 260°C), the coating is ultraviolet resistant and gives optimal outdoor performance without cracking or chipping upon prolonged exposure to sunlight.

The complex mixture of non-toxic, organic inhibitors, and silicone compounds offers excellent outdoor weathering and thermal heat protection. VpCI®-386 HT Black has been improved by using a blend of highly corrosion resistant silicone polymers and additives that provides a composite polymer barrier film.

Cortec® VpCI®-386 HT Black is heat resistant, fast drying, and UV resistant. It can be used as a topcoat/primer and applied via spray, roller, or brush. VpCI®-386 HT Black protects carbon steel, cast iron, aluminum**, stainless steel, galvanized steel**, and copper.

VpCI®-386 HT Black is available in 5 gallon (19 liter), 55 gallon (208 liter), liquid totes, and bulk. Keep product from freezing. Avoid temperatures higher than 75°F (24°C) while in storage.

Cortec's VpCI®-386 HT Black conforms to ASTM D-2485-91 Standard Test Methods for evaluating coatings for High Temperature Service (Method A) (After Heating).

New Product

Cortec's BioCorr® ATF Rust Preventative

Biodegradable, Biobased, and Sustainable Protection for the Automotive Industry!

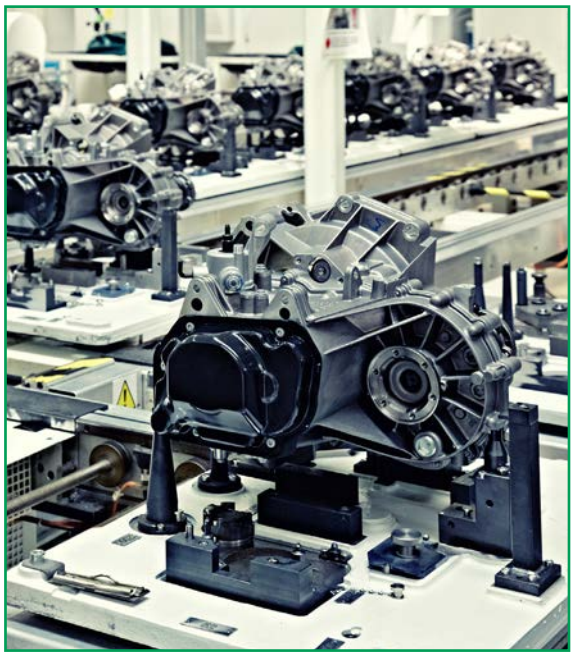
The automotive industry faces difficult challenges in fighting the effects of corrosion both in economic loss and environmental safety. To help in this battle, corrosion research chemists at Cortec® Laboratories have developed an advanced rust preventative to preserve transmissions and their components during storage and shipment! BioCorr® ATF Rust Preventative is an emulsion rust preventative that combines film-forming additives with Vapor phase Corrosion Inhibitors (VpCI®).

BioCorr® ATF Rust Preventative provides multi-metal protection and is an excellent environmentally sound alternative to petroleum derived products. This formulation can provide protection for up to two years of indoor storage, or during shipments when combined with VpCI® packaging materials. Unlike rust preventative oils this product leaves a dry film on the surface of the metal that is virtually undetectable. This feature helps to create a clean workplace and prevents material waste. BioCorr® ATF Rust Preventative is VOC free and the formulation is biodegradable; eliminating expensive disposal costs associated with oils. The ultra thin, dry protective layer of BioCorr® ATF does not change tolerances of precisely machined metal surfaces, thus allowing robot assembly without cleaning. It is compatible with engine and transmission lubricants as well as nonmetallic gaskets, seals, elastomers, and plastics.

BioCorr® ATF is a ready-to-use product and can be applied by dipping or spraying. It can be used for biodegradable preservation of transmissions and their components, as a temporary coating for storage and shipment, and for protection of pipes, flanges, gears, cast iron, sheets, and coils.

FEATURES

- **Provides excellent multi-metal corrosion protection**
- **Combines film-forming additives with VpCI®**
- **Displaces water and oil from metal surfaces**
- **Forms an invisible dry to touch film**
- **Environmentally friendly and biodegradable**
- **Replaces hazardous mineral oils and flammable solvents**
- **VOC free**
- **Contains no chlorinated compounds, chromates, or nitrites**
- **Ready-to-use**
- **Formulated with renewable raw materials, and doesn't contain mineral oil**



BioCorr® ATF Rust Preventative is packaged in 5-gallon (19 liter) pails, 55-gallon (208 liter) drums, liquid totes, and bulk. BioCorr® ATF Rust Preventative conforms to ASTM D 1748 standard.

Coming Soon

Cortec® - VpCI®-280, BioEmitter, Cor-Pak® VpCI® Static Dissipative Bubbles, CorShield® VpCI®-649, VpCI®-146 BIO, MCI®-2105.

World Sales Meeting

St. Paul, Minnesota
September 16-19, 2015 at
St. Paul Hotel

More information will follow in the coming weeks, please contact Vanessa Thompson (Vanessa@cortecvci.com) with any questions.

Upcoming Trade Shows

AWT 2015
SEPTEMBER 9-12
NASHVILLE, TN
BOOTH #201
www.awt.org

EUROCORR
SEPTEMBER 6-10
GRAZ, AUSTRIA
www.eurocorr2015.org

ICRI
OCTOBER 14-16
FT. WORTH, TX
www.icri.org

ISSA
OCTOBER 20-23
LAS VEGAS, NV
Booth #3864
www.issa.org

POWER-GEN
DECEMBER 8-10
LAS VEGAS, NV
Booth #2310
www.power-gen.com

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Printed on recycled paper ♻ 100% Post Consumer

ISO/IEC-17025 LABORATORY TESTING CERTIFIED
ISO 9001 CERTIFIED QUALITY SYSTEM REGISTERED
ISO 14001 CERTIFIED ENVIRONMENTAL SYSTEM REGISTERED

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