BioCortec® Newsletter

April 2016

Cortec® BioPreferred®* Buyer's Guide Now Available!

In the first three months of 2016, Cortec® has published two brochures featuring Cortec's USDA Certified Biobased Products.

"VpCI® Technology for Desalination Industry" and "VpCI® Technology for Food, Beverage, and Pharmaceutical Industries" include listings of Cortec's BioPreferred® products made from renewable resources such as soybeans and coconut oil. These products meet USDA biobased content standards allowing them to bear the USDA Certified Biobased Product label. An assortment of rust removers, lubricants, coatings, "green" water treatment, concrete corrosion inhibitors, and compostable packaging options are available, many of which are both environmentally friendly and biodegradable.

The brochures can be viewed online at cortecdesalination.com and cortecpharma.com.

*BioPreferred® is a registered trademark of the USDA.

Bio-Based Corrosion Inhibitor Study Published in MP

Cortec's New Product Development Director, Ming Shen, Ph.D., was recently published in the March 2016 edition of *Materials Performance*. Her paper entitled "Investigation of Bio-Based Aromatic Acids as Corrosion Inhibitors" (coauthored by Alla Furman and Rita Kharshan) examined the use of several bio-based extracts for creating corrosion inhibiting salts. Relying on plant based derivatives more commercially available than other bio-based extracts, the team evaluated the corrosion inhibiting ability of vanillic, cinnamic, ferulic, and mandelic acids. Through a variety of VIA, hydrostatic, and immersion tests, the team found that salts from these acids showed potential as corrosion inhibitors alone and in various combinations. Patents are pending on this research as Cortec® looks forward to expanding its horizons with bio-based products and corrosion inhibitors that meet the demand of today's society for safer, more renewable products.

The full article has been posted on Cortec's website at: *http://www.cortecvci.com/whats_new/announcements/Shen-proof.pdf.*

BioCorr® Receives EU Trademark Approval: Strong on Corrosion - Gentle on Nature - Easy on the Wallet!

Cortec® Corporation proudly announces that its biobased and biodegradable rust preventative - BioCorr® - has received registered trademark approval from EU's Office of Harmonization. BioCorr® is a water based, ready to use formulation intended for preservation of metals in storage and during transportation. This innovative solution is formulated with renewable raw materials and contains 64% biobased content. It provides multi-metal corrosion protection by combining film-forming additives with Vapor phase Corrosion Inhibitors (VpCIs).

BioCorr® is an environmentally sound alternative to hazardous petroleum derived products. This ready-to-use formulation can provide protection for up to two years of indoor storage or during shipments. Unlike rust preventative oils, water-based BioCorr® leaves a dry film on the surface of the metal that is virtually undetectable. This feature helps to create a clean workplace and prevent material waste.

BioCorr® is VOC free. Its biodegradable formulation enables the elimination of expensive disposal costs associated with hazardous mineral oils and flammable solvents. BioCorr® does not contain any chlorinated compounds, chromates, or nitrites. It has been awarded USDA BioPreferred®* designation (*www.biopreferred.gov*).

TYPICAL APPLICATIONS

- Biodegradable preservative for machines and equipment
- Temporary coating for storage and shipment
- Protection of pipes, flanges, gears, cast iron, sheets, and coils

The daughter company of global manufacturer Daido Metal was experiencing corrosion problems during export of automotive parts in sea-going containers. End users of the company's automotive bearings, bushings, and thrust washers were the engine producers Volvo and Ford. Transit time from the manufacturer's Montenegro location to the engine assembly plants was typically 2-4 months. Traditional rust inhibiting oils did not prevent oxidation and pitting of the special aluminum alloy used to produce the high-tech engine components. This resulted in significant losses from production delays and rejected parts.

The customer tested BioCorr® in their laboratory with promising results, and a pilot plant trial was initiated. This prompted a full scale implementation of BioCorr® as a replacement for rust inhibiting oils. Corrosion problems during storage and shipping were solved. Bearings, bushings, and thrust washers showed no sign of corrosion, even after extended field testing for up to twelve months. As a result, delivered parts are oil free, dry to the touch, and protected with a very cost-effective method. BioCorr® also enables the company to demonstrate their environmental awareness and sustainability to their clients and local community.

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Cortec's BioEmitter™, Patent Pending Rust Blocker Shield

Cortec's BioEmitter™ offers easy-to-use protection from rust and corrosion on metals stored in enclosed spaces as large as 50 cubic feet (1.4 m^3). Simply attach the environmentally safe BioEmitter™ onto a clean surface inside an enclosed area, then relax knowing your tools, electric panels, or other metallic valuables are protected!

The BioEmitter™ takes up less than one square foot of space and is conveniently packaged in a vented cardboard box, allowing Cortec's innovative Vapor phase Corrosion Inhibitors (VpCIs) to migrate throughout the surrounding space to form an invisible molecular shield on metal surfaces, sealing off air and moisture - even in the hardest to reach areas. The BioEmitter™ provides long-term protection against corrosion even in the presence of adverse conditions including salt, moisture, airborne contaminants, H_2S, SO_2, NH_3, and others.

Cortec's BioEmitter™ is made with bio-based, renewable materials; the VpCIs are non-toxic and do not contain nitrates, silicones, phosphates, or heavy metals. They also have no adverse effects on electrical or chemical properties and do not harm plastics, elastomers, or painted surfaces.

The BioEmitter™ protects a wide variety of metals from rust and corrosion. These metals include mild steel, galvanized steel, brass, solder, cast iron, silver, aluminum alloys, magnesium alloys, copper, and copper-nickel alloys.

Typical Applications:

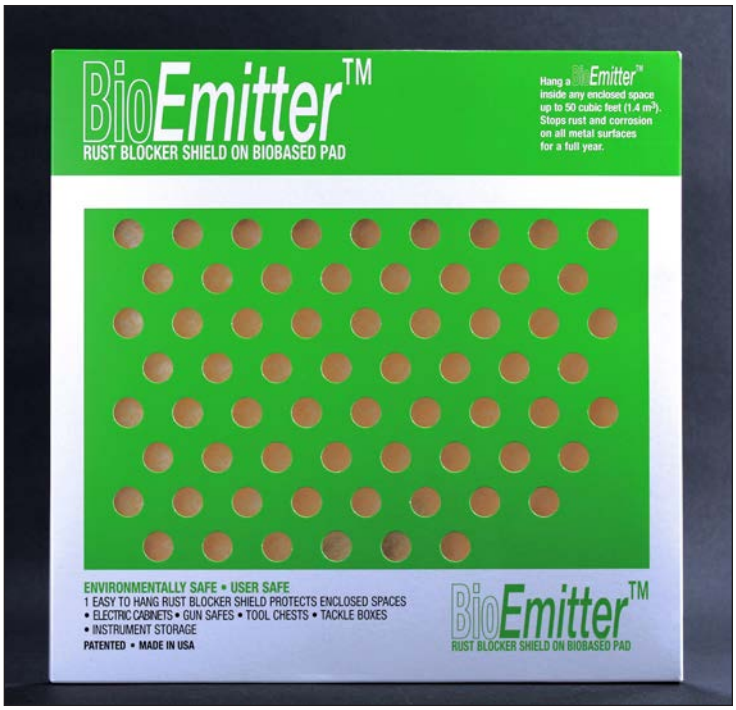
- Electrical cabinets
- Instrument cabinets
- Tool chests
- Storage lockers
- Trailers
- Gun safes
- RV storage holds
- Pool pump enclosures
- Boat storage cabinets
- Pick-up truck boxes
- Fishing tackle boxes

With its easy-to-use compact size and high bio-based content, the BioEmitter™ is convenient and safe to use. It is effective in polluted and humid environments and does not interfere with electrical, optical, or mechanical performance. It can be used in spaces larger than 50 cubic feet by simply hanging multiple BioEmitters in opposite corners of the area you need protected.

Cortec® BioEmitter™ meets NACE Standard TM0208-2008.

For more information on innovative corrosion protection products from Cortec®, please visit our website at: *http://www.cortecvci.com/Products/products.php*

BioEmitter™
RUST BLOCKER SHIELD ON BIOBASED PAD



ABC Concentrates
The Missing Link Between Environmental Protection and Effective Treatment!

Bionetix® International – a Canadian manufacturer of microbial based bio-products owned by Cortec® Corporation – presents it's new ABC line of environmentally safe, bio-based, natural concentrates. The ABC line of concentrates, comprised of solid, proprietary technologies, enables biological waste treatment processes and can be used in various applications and industries worldwide.

Bionetix INTERNATIONAL
A Subsidiary of Cortec® Corporation

The Bionetix® ABC line allows the incorporation of good bacteria into different formulations. When added, these concentrates enable the degradation of target substances in waste systems by using completely natural methods and developing environmentally safe manufacturing and disposal processes. Expensive chemicals can be replaced with biological processes that are lower in cost, more efficient, and perfectly safe for surroundings. This is proven by the capability of microorganisms to transform pollutants and synthetic chemicals into sources of energy and raw materials for their own growth. Bacteria used in the Bionetix® line of products degrade more complex chemicals along with higher volumes of waste materials. Bionetix® integrated resources will provide customers with the unique benefits of remediation through bioaugmentation and biostimulation.

The ABC Concentrate line offers:

ABC 1000 MULTIPURPOSE CONCENTRATE POWDER - a high concentrate powder for multipurpose blending. It reduces organic sludge and bad odors.

ABC 1200 SPORE BLEND POWDER FOR FOGGING - a multipurpose blend powder that is ready-to-use and very effective in increasing microbial populations that promote waste degradation.

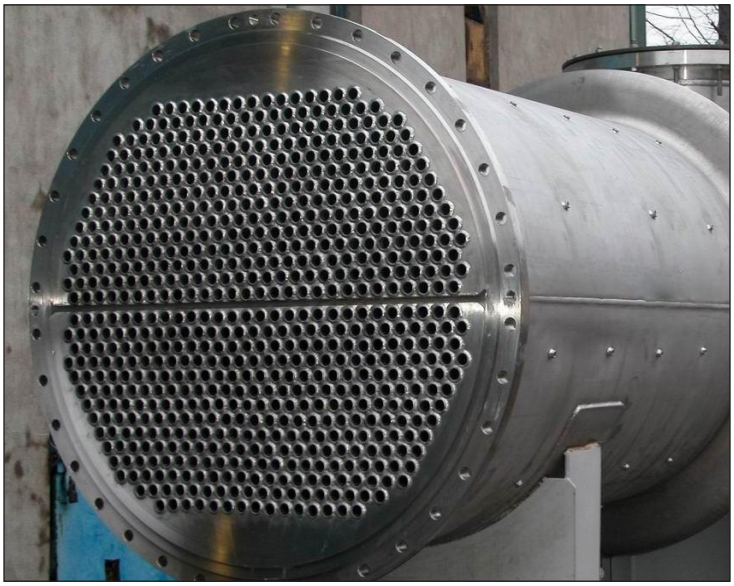
ABC 1500 SPORE BLEND POWDER FOR HYDROCARBONS - a ready-to-formulate product, very effective in increasing microbial populations to promote contaminant degradation in industrial applications such as refineries and petrochemical plants.

ABC 4000 MULTIPURPOSE CONCENTRATE LIQUID - a multiple spore blend concentrate that is ready for use as the base culture for the formulation of a wide range of biological cleaners.

ABC 6000 MULTIPURPOSE BIOENZYME BLEND LIQUID - a bacteria and free enzyme blend for use as the base culture for the formulation of a wide range of cleaning products.

Coming Soon
Biodegradable Scale Remover 426 P

Cortec® plans to soon launch a fast acting heavy duty scale and rust remover that is biodegradable and non-toxic! This powerful product can be used to improve water flow in pipes obstructed by scale. It also improves heat-transfer efficiency in heat-exchanger equipment by creating clean surfaces. On top of this, Biodegradable Scale Remover 426 P can treat hard to reach spaces without requiring the extra time and labor costs normally needed for equipment dismantling.



This product is safe on multi-metals including the following:

- Iron
- Carbon Steel
- Stainless Steel
- Copper
- Aluminum
- Magnesium
- Various Alloys

Biodegradable Scale Remover 426P will be available in powder, water-soluble pouch, and liquid forms for a variety of scale and corrosion removal needs. It is non-hazardous to handle and easy and safe to dispose. Stay tuned for the official product release!

TRADESHOWS 2016

ISSA / INTERCLEAN
MAY 10-13, 2016
AMSTERDAM, NETHERLANDS
BOOTH # 02.425A

AWT
SEPTEMBER 07-10, 2016
SAN DIEGO, CA

ISSA
OCTOBER 25-28, 2016
CHICAGO, IL
BOOTH# 5114

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