

# The **LEADING** Edge



EcoWorks<sup>®</sup> Resin is now available

November 2009



## *New Products:*

### **EcoWorks® Resin is now Available**

Cortec Corporation® is excited to announce the expansion of our biodegradable product line and subsequent commercialization of our EcoWorks® Resin! It is a proprietary blend of aliphatic and aromatic polyesters for biodegradable film extrusion applications. Films produced from EcoWorks® Resin fully biodegrade into carbon dioxide and water within a matter of 6-8 weeks when placed in a commercial composting environment. Such films have been certified 100% biodegradable/compostable per ASTM D6400 and DIN EN 13432 by certifying agencies such as BPI and DIN CERTCO; however, manufactured films must be independently certified. Not only is EcoWorks Resin biodegradable, it also contains biobased material derived from annually renewable resources and it is composed of FDA approved ingredients. EcoWorks® Resin can be processed on conventional blown or cast film extrusion equipment with minor process modifications. Applications for film produced from EcoWorks® Resin include food packaging, grocery bags, community composting programs, garbage and mulch bags, and many more!



### **Extension of the Corrosorber® Line**

Two Cortec® products: Corrosorber® paper and Corrosorber® device are well known by our customers and distributors. Based on the additional requests from customers, two new Corrosorber® products are now being introduced:

### **Corrosorber® Pouch**

Corrosorber® Pouch is a uniquely designed pouch containing an indicating powder which absorbs corrosive sulfurous gases such as hydrogen sulfide and volatile mercaptans. As the Corrosorber® Pouch absorbs these corrosive gases the powder will undergo a color change from green to black, notifying the user when it's time to replace the pouch. Corrosorber® Pouch will not release the corrosive gases back into the atmosphere, the reaction is irreversible, eliminating any concern about post contamination.



*Continued on pg. 2....*

Metals are readily attacked by gases such as hydrogen sulfide, mercaptans, and other sulfur compounds which can cause severe damage or failures to occur. Corrosorber® Pouch is a great complement to Vapor-phase Corrosion Inhibitors (VpCI®) as it absorbs these gases, eliminating a source of corrosion, and allowing VpCIs to function more efficiently.

Corrosorber® Pouches are constructed from breathable Tyvek®(registered Trademark of DuPont) on one side and clear PET film on the other which allows for easy visualization and indication for when the product should be replaced.

## What are the typical applications for this product?

- Petrochemical plants
- Water treatment plants
- Plants handling sulfurous crude oil
- Natural gas handling
- Pulp and paper plants
- Animal agriculture facilities
- Operating, packaged and stored electrical equipment
- Marine navigation and communication equipment
- Aerospace electrical controls
- Electric motors, switching equipment
- Fuse boxes, power boxes
- Medical equipment
- Electrical wireways, terminal boxes
- Scientific and measuring instruments
- Telecommunications equipment
- Remote electronics devices

These pouches are very convenient to use; they require replacement only when complete change from green to black is observed.

## Corrosorber® Liquid

Hydrogen Sulfide is a poisonous gas that is deadly at high concentrations and provides serious health threats at moderate concentrations. Operating problems caused by H<sub>2</sub>S can include severe corrosion, fouling, and blockage to injection wells.

Corrosorber® Liquid is a water solution of nitrogen based heterocyclic compound. It can be used to scavenge hydrogen sulfide (H<sub>2</sub>S), mercaptans, sulfides, and sulfur compounds from gas systems, crude oil, and water. Corrosorber® liquid is an extremely fast reacting product allowing for lower levels of treated H<sub>2</sub>S where contact time is restricted. Faster reaction kinetics allow for lower usage of treating chemical. It also demonstrates preservative properties against a variety of commonly found microorganisms.

Corrosorber® Liquid is installed in batch reaction towers or it is injected continuously into gas gathering lines, transmission lines, vapor overheads, or liquid product systems of pipelines. It can also be used as an additive to corrosion inhibitors and surfactants to enhance control of microorganisms.

Corrosorber® Liquid can be diluted with water or methanol for ease of application. Spent solutions of Corrosorber® Liquid are considered water dispersible polymers and can be injected continuously into water gathering lines, water tanks, holding pits, and vapor overheads.

The amount of Corrosorber® Liquid required depends upon the level of H<sub>2</sub>S in the system and the degree of reduction desired. In natural gas systems, the scavenging rate of Corrosorber® liquid is typically applied at rates of 0.04 to 0.12 gallons product per MMSCF of gas per ppm of hydrogen sulfide. As a hydrogen sulfide scavenger, Corrosorber® Liquids typical scavenging rate is 2.4 to 7.5 lb sulfur/gallon Corrosorber® Liquid.

## **EcoClean® 407: New Cleaner / Degreaser for Food Plants**

This product is an addition to the “green” line of Cortec’s surface preparation products. EcoClean® 407 is an effective enzyme based biodegradable, non-toxic cleaner/degreaser specially formulated to clean grease and oil buildup in food handling establishments. This is especially important because in many cases traditional industrial cleaner are doing a poor job of cleaning food related fat and grease. EcoClean® 407 effectively penetrates grease, oils, and fats and is ideal for cleaning hard surfaces. EcoClean® 407 contains enzymes and surfactants. The surfactants are derived from a renewable vegetable base and are readily biodegradable.

EcoClean® 407 can be applied as is or prediluted at a rate of 8 ounces per gallon of water. It can be used to clean oil / grease laden hard surfaces such as floors, traps, and drains to aid in the removal of grease and oil build-up.

EcoClean® 407 is non-toxic, has neutral pH, and is based on biodegradable materials. Furthermore, EcoClean® 407 is certified with the EPA’s Designed for the Environment (DfE) program.



## **M-250: Anticorrosion Additive to Soluble Oils**

M-250 is a great addition to the Cortec® line of additives, the development of which was desired by many of our customers working with machining fluids.

This new product is an anticorrosion additive for cutting fluids (soluble oils). The chemistry of M-250 combines anticorrosion properties with the ability to be emulsified with water.

M-250 is a soluble, oil base concentrate designed to be diluted with a wide variety of naphthenic base oils to develop soluble oils with corrosion prevention properties. M-250 can be blended with soluble oils or with the appropriate base oil by adding emulsification properties to it or can be added to the oil /water emulsion. This product doesn’t negatively affect the emulsions, but it actually enhances the stability. M-250 is very compatible with a variety of lubricants and biocides used in machining fluids.

M-250 is very easy to blend into the oils or oil/water emulsions. If this product is added to a prepared emulsion, the concentration required is 0.75% by weight. When added to oil, the recommended concentration is 15%. M-250 provides long term corrosion protection to metals and it is amines and nitrites free.

## *Product Update:* **EcoPouch and VpCI®-309 Pouch**

Due to its overwhelming popularity and in an effort to accommodate our customer's needs, we have updated the packaging of our EcoPouch and VpCI®-309 Pouch products. To better suit common applications we will now be offering these products as a string of 50 pouches per carton rather than individually cut. Allowing you to customize the product for your particular application needs. They can be cut into smaller strings or individual pouches on site. We have also consolidated the product line to offer one pouch size for each product (6"x10"x0.5", 15.3 cm x 25.4 cm x 1.3 cm); which will protect volumes up to 1m<sup>3</sup>. Custom sizes and constructions are still available, please contact a Cortec® customer service representative for more information.

## *Cortec's Products in New Applications* **Application of VpCI®-Corrverter® and VpCI®-395 on a Roller Coaster in Need of Repair Due to Corrosion**

A world famous amusement park in California was in need of a coating system that was VOC compliant and that could be used in a wet immersion environment. The roller coaster had severe corrosion on the rails due to the water that is misted on the magnets that are used for the roller coaster. Since the park engineers could not shut down the ride for a complete repair, they needed an immediate fix that could be done during the night when the amusement park was closed. Angel Green from Cortec Laboratory personally supervised the coating application during the overnight shift.

The coating system had to be durable enough to survive the roller coaster being put back in use with\in 6-8 hours of application. Some parts of the rails on the roller coaster were being re-welded, while other parts were rusted and in need of repair.

The proposed coating system was to apply VpCI®-Corrverter® onto all of the rails both the newly welded parts and the rusted areas. The next night VpCI®-395 2K water based epoxy was applied in a teal color to match the roller coaster.

The amusement park engineers were very happy with this application and have since approved the use of VpCI®-Corrverter® and VpCI®-395 on other rides in the park.



**Roller Coaster rail before any coatings were applied**



**VpCI®-Corrverter® being applied at 3-5 wet mils (75-125 microns)**



**VpCI®-395 Teal being applied at 3-5 wet mils (75-125 microns)**



**Finished product**

## GalvaCorr® is Going to Australia

In less than a month, a new trial application of GalvaCorr® will take place in Australia. Marlin Hansen, Cortec® Lab Consultant, will apply GalvaCorr® to the lower portions of pier, which will show the effectiveness of GalvaCorr® in splash zone applications.

On July 23, 2005 GalvaCorr® was applied to two of four bridge caps on a bridge in Jordan, Minnesota. The other two bridge caps were left untreated as controls. Cortec® has continued to monitor the bridge since the coating was applied.

After four years, the numbers show greatly reduced corrosion from the control side and the photos below show the visual difference of the concrete.



Site of new Australian GalvaCorr® trial

### With GalvaCorr®



Bridge in 2006



Bridge in 2009

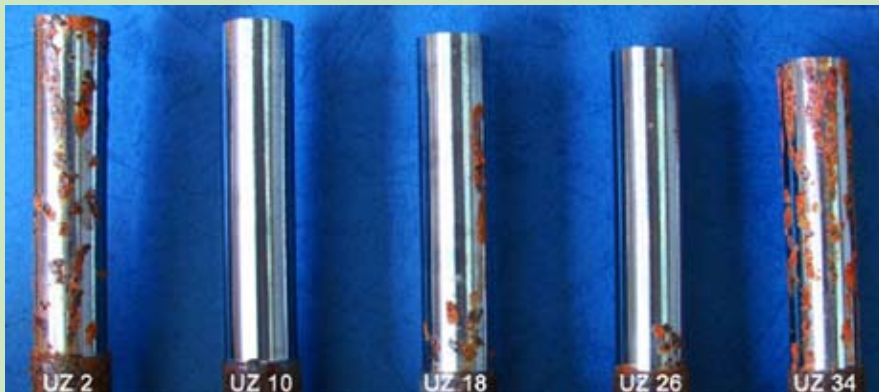
### Without GalvaCorr® (some areas have water on them for testing purposes)



## EcoLine® Cutting Fluid

This product was applied and tested by Professor Ivan Yuraga and his co-workers at the Laboratory of Material Protection in Zagreb University, Croatia. Five different cutting fluids were used to cut the structural steel CO 361 cylindrical parts to the same size.

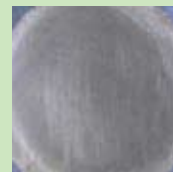
All of the cutting fluids were used in 5% concentration. One of the fluids was EcoLine® Cutting Fluid. The cut materials were subjected to the humidity chamber test according to DIN EN ISO 6270 (40°C, 100% humidity) for 7 days (168 hours). Only one part out of five tested didn't have any corrosion spots on the surface. This experiment just confirmed the excellent properties of EcoLine® Cutting Fluid.



(UZ 10) EcoLine Cutting Fluid



Control



EcoLine® Cutting Fluid



March 14 - 18, 2010 • San Antonio, Texas

### The New Generation of Rust Preventative Products Based on Renewable Materials and Incorporating Vapor phase Corrosion Inhibitors (VpCI®).

- Margarita Kharshan
- Cliff Cracauer

**Cortec® Corporation**

### New Aircraft Pretreatment and Wash Primer System

- Angel Green

**Cortec® Corporation**

### VpCI®-Based Corrosion Inhibitors in Hydrotesting and Long Term Wet Storage Applications

- Alla Furman
- Margarita Kharshan
- Andrea Hansen
- James Holden
- Elizabeth Austin

**Cortec® Corporation**

## *Cortec's Product Use Expanding in Russia*

Cortec's representatives Ivana Borsic, (Technical Sales Representative East Europe, EcoCortec®) and Rita Kharshan (Cortec® Laboratory Director) visited Russia from September 13-18. The goal of this visit was to have meetings with Russian Distributors in Moscow and to work with representatives at Russia's largest steel plant, the Severstal Metallurgical Factory located in Cherepovets (employing 60,000 people). During this visit, application of VpCI®-126 manufactured by our licensee in Russia, additives to metalworking fluids, and water treatment applications were discussed. A program for future business development was established during the meetings.



**Severstal Metallurgical Factory located in Cherepovets, Russia.**

**Severstal Coils:** Special two sided (with two colors) film is made by our Licensee in Russia, Priborservice.



**Rita Kharshan Cortec® Lab Director with Floor Supervisor of Severstal Metallurgical Factory.**



**Igor Kostrico, Cortec's representative in Cherepovets, Russia with Ivana Borsic of EcoCortec® in the Metal Forming Area.**



**Igor Kostrico, Ivana Borsic, and Rita Kharshan with an engineer of Severstal looking over plant equipment.**



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