

The **LEADING** Edge

Cortec® Corporation at **EUROCORR**

The European Corrosion Congress, EUROCORR 2010 was held for the first time in Moscow, Russia in the Congress Center of the World Trade Center Moscow, a world-class venue which is considered the most advanced, professionally equipped, and complete convention site in Russia.

EUROCORR is organized by the European Federation of Corrosion (EFC). EFC members are formed from the membership of corrosion societies throughout Europe. The main objective of this annual conference is to boost cooperation between academia, universities, research centers, and cooperate entities to address issues in corrosion management. The conference which was held in mid September consisted of symposia, workshops, and EFC Working Party (WP) meetings.

Cortec® Corporation was invited to submit five scientific papers and all of them were accepted for presentation. Alla Furman, Senior Corrosion Engineer and Rita Kharshan, Lab Director presented these papers. It was also an opportune time to provide training for our Russian Distributors.



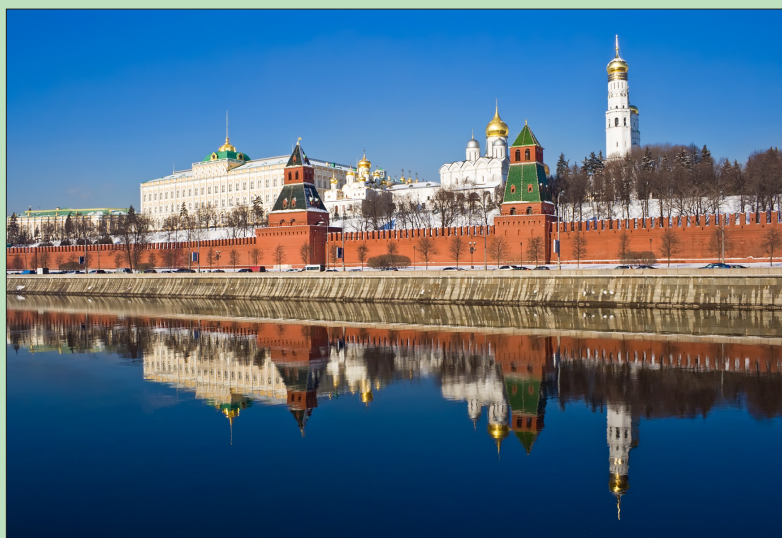
World Trade Center, Moscow, Russia



Rita Kharshan assisting a distributor with Cortec® products at EUROCORR.



Alla Furman presenting at EUROCORR.



The Kremlin, Moscow, Russia

New Products

EcoEmitter®

EcoEmitter® was designed with the environment in mind in a concerted effort to reduce our carbon footprint. The polymeric cup has been redesigned to replace polyethylene and is constructed from OK Biobased 3-Star rated resins containing 60-80% renewable carbon content. The active corrosion inhibiting powder is nontoxic and biodegradable. The traditional Tyvek membrane used on VpCI®-105 and VpCI®-111 emitters has been replaced with a breathable membrane constructed from 100% bio-based fibers.

EcoEmitter® is a highly engineered device designed to provide corrosion protection for your most sensitive assets such as electronic and optical equipment and components. Each individual emitter will protect volumes up to 0.25 m³ (8.8 ft³). EcoEmitter® is powered by Nano VpCI®, the latest advancement in vapor phase corrosion inhibiting technology. Nano VpCI® emit from the device and saturate the enclosure via diffusion, filling all void spaces and recessed areas with protective vapor molecules. These molecules are attracted to and adsorb onto metallic surfaces resulting in the formation of nano-films, very thin microscopic molecular layers of corrosion protection. The film formed do not adversely affect or alter the appearance, conductivity, or optical functionality of the components protected. Studies have shown the ability for VpCI® molecules to provide protection in the presence of corrosive species, (i.e. chlorides, water, sulfides) and displace them at the metal surface.

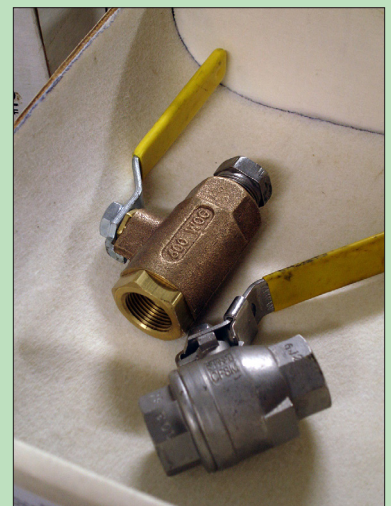
EcoEmitter® is extremely simple and convenient; they should be installed as early as possible, preferably during manufacturing or assembly. Select an appropriate location within enclosure to be protected. The surface on which the device will be installed should be clean and free of debris. To attach the device, peel off the protective strip and affix to a clean surface. The protective strip can be separated to reveal an adhesive sticker on which the installation and replacement dates can be noted. EcoEmitter® can be installed in any position.



Bio-Pad®

Bio-Pad®, another product which shows Cortec's concern about the environment is a unique flexible corrosion inhibiting device constructed from 100% bio-based non-woven material. Bio-Pad® provides an eco-friendly and sustainable packaging option for corrosion inhibition. Bio-Pad® provides up to two times more corrosion inhibiting action as related foam products. Not only is Bio-Pad® bio-based but its high VpCI® concentration in combination with its thin design results in material reduction by up to 94% in comparison to similar polyurethane foam emitting devices.

Parts protected with Bio-Pad® are always ready for use; no degreasing or coating removal is required, just remove item from package and put to use. Bio-Pad® provides multi-metal corrosion protection, does not contain any isocyanate or modified isocyanate, and is free of all hazardous materials.



VpCI®-308 Pouch

VpCI®-308 Pouch, a new addition to the Cortec® family of PTC Emitters, developed to provide multi-metal protection. The pouches are constructed of breathable Tyvek® which allows the VpCI® molecules to be emitted through the membrane to form a corrosion protection molecular layer on metal surfaces.

VpCI® Pouches are easy to use. There are no chemical concentrations to calculate or special equipment for application; just determine the number of pouches required per unit space. Each pouch provides a clean method of corrosion protection.

Where these pouches can be used:

- Tubular structures, pipes, and vessels
- Internal surfaces of compressors, turbines, engines, tanks, boilers, heat exchangers
- Steam condensate lines, closed circuit heating, and cooling systems
- Corrosion protection of equipment after hydrostatic testing
- Parts, components, and completed assemblies during shipping and storage
- Voids, cavities, and tanks
- Double bottom storage tank floors
- Large control panels
- Electrical power supplies and many other applications

EcoAir® Wizard Screen Cleaner

EcoAir® technology is a new modern step in aerosol technology which allowed for the development of air-powered aerosol products. Cortec® is a pioneer in the industry with the development of aerosol products that are powered by compressed air and not by traditional chemical propellants. Today, Cortec® has a whole line of EcoAir® products, EcoAir® Wizard Screen Cleaner is the newest.

EcoAir Wizard Screen Cleaner safely cleans LCD screens of dust, dirt, and fingerprints with a no-residue, no-drip, spray foam application. This fresh scented cleaner incorporates non-toxic, biodegradable chemicals without traditional aerosols, propellants, or ozone depleting CFCs

When applied to glass and plastic surfaces, the spray foam evaporates leaving a thin layer of protection that resists electrostatic charges and prevents the reappearance of dust and dirt. The cleaner cuts oil and grease on contact; does not streak, smear, or leave a filmy residue while maintaining peak operational efficiency for electronic components. The cleaner can be used for commercial, industrial, manufacturing, automotive, and general home office maintenance.

VpCI®-126 Shrink Film: options

Cortec® is expanding the line of VpCI® shrink films to meet the requirements of a growing markets by offering a competitive, value added solutions.

MilCorr® VpCI Shrink Film: Maximum highest strength opaque buff-colored film for long-term storage. UV protection for 5+ years.

VpCI®-126 HP UV Shrink Film: Higher strength transparent blue-colored film for long-term storage. UV protection for 3+ years.

VpCI®-126 HP Shrink Film: Higher strength transparent blue-colored film for long-term storage. Non-UV.

VpCI®-126 ESD Shrink Film: Standard strength transparent blue-colored film with static protection. Long-term sheltered storage. Non-UV.

VpCI®-126 Shrink Film: Standard strength transparent blue-colored film. Long-term sheltered storage. Non-UV.

Cortec® Corporation Represented at PACK EXPO 2010

Cortec® Corporation, along with over 44,500 other packaging and processing professionals, gathered in Chicago October 31st - November 3rd for PACK EXPO, the world's largest packaging and processing event. Cortec® was represented by Boris Miksic, President/CEO, Mike Morin, Technical Sales Rep; Bill Harrod, Chicago Regional Sales Manager; Mike Gabor, Midwest Regional Sales Manager; Cliff Cracauer, VP Sales; Joe DiSabantonio and Diane Stephens, Mfg. Rep. (NE); Curt Hill, Mfg. Rep. (SE); and Kristy Gillette, Product Development Manager. This event is not only an opportunity to showcase and promote Cortec® products but also provides an avenue to build powerful connections with colleagues, customers, distributors and suppliers. Cortec's R&D lab was present to connect with customers and provide assistance for technical questions in addition to investigating processing and packaging solutions and new technologies on the horizon.



Right to Left: Bill Harrod, Regional Sales Manager and Kristy Gillette Product Development Manager

Small Businesses Innovation Research Grant (SBIR)

In December 2009, Cortec® submitted a proposal to the National Science Foundation (NSF) under their SBIR Grant program entitled 'Bio based Corrosion Inhibitors'. In June 2010, we were notified that we had been selected for a Phase 1 award, for work to begin in July. The award consists of a \$150,000 grant for six months of research, with the goal of developing new products with commercial viability. Of 2662 proposals submitted for this program, only about 17% (459) were selected for awards.

The focus of this project is to utilize compounds from readily available agricultural by-products for corrosion inhibitors in water based products, biodegradable de-icing fluids, anti-scalants, and rust removed compounds. These products should be both environmentally friendly and cost effective.

The project team (including approximately 1/2 of the Cortec® laboratory staff and Biodegradable Technologies manager Robert Kean) has been really enthusiastic about this opportunity and have applied complementary skills and approaches such as engineering, electrochemistry, corrosion studies, organic and analytical chemistry, and other necessary branches of science to make this project a success.

Like most research projects, this effort has had its ups and downs, but the team is energized with recent promising results and continues to see avenues for successful commercialization. We are looking forward to an application for a Phase 2 award, which could be received as early as next summer and would provide funds for process development and scale-up leading to commercialization.




Eric Uutala, Tech. Service Engineer, analyzing a product in the humidity chamber.



Ming Shen, R & D Engineer, analyzing and evaluating chemicals.



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