December 2021

The LEADING Edge

‘GREEN’ CHEMISTRY NEWS DEVELOPMENTS

Eco Wrap® Awarded TÜV Austria Industrial Compostability Certification!

After years of commitment to “greener” R&D in the realms of corrosion inhibitors and film technology, we are proud to add a new certification to our growing list of commercially compostable films. On November 24th, we received the ‘OK compost INDUSTRIAL’ certificate for Eco Wrap® from TÜV Austria. This certifies that Eco Wrap® conforms to the EN 13432 standard (European equivalent of ASTM D6400) for industrial compostability. Stretch wrap users in countless industries (e.g., warehousing, packaging, shipping, manufacturing, moving, online retail, agriculture), can now replace their traditional stretch wrap with a commercially compostable machine grade alternative that can be repurposed into new soil amendment on the commercial compost heap instead of ending its usefulness in the landfill.* Eco Wrap® is therefore an important link in achieving a “circular economy” in the world of packaging. Learn more about our certified industrially compostable Eco Wrap® patent pending machine grade stretch film here: https://www.cortecvci.com/eco-wrap-patent-pending/

This product is intended to be composted in a commercial composting facility operated in accordance with best management practices. Check locally to see if such a facility exists in your community and if they will accept this product. Not suitable for backyard composting.

Important Developments in VpCI® Paper Compostability

Another important step in our quest for environmental responsibility is the addition of Eco-Bio™ Technology to our flagship CorShield® VpCI®-146 Paper. This paper incorporates biodegradable Vapor phase Corrosion Inhibitor Technology and enhances the biodegradable and compostable characteristics of our flagship VCI paper.

CorShield® VpCI®-146 Paper with Eco-Bio™ Technology underwent laboratory compost disintegration studies this year to see if it would measure up to the disintegration testing requirements of ASTM D6868 standard for commercial composting. This part of the standard requires less than 10% of the original mass to be left behind after 12 weeks of composting. CorShield® VpCI®-146 Paper met this requirement two weeks ahead of time at the 10 week marker.

Other important environmentally responsible characteristics of CorShield® VpCI®-146 are that it contains 92% USDA certified biobased content and it is made with 100% recycled content paper, pushing it into the realm of “circular economy” corrosion inhibitor products at Cortec®. Read more about our laboratory compost disintegration studies here: https://www.cortecvci.com/whats_new/announcements/Paper-Composting-News-Alert.pdf

Lab News

Pioneering Onward with the USDA BioPreferred® Program

A big part of what we do in exploring "green" chemistries at Cortec® Laboratories is to develop products made with renewable resources. This has contributed to our exciting role in the USDA BioPreferred® Program.* Just this year, which marked the 10th anniversary of this "green" government initiative, Cortec® Corporation was named a BioPreferred® Pioneer. A letter of recognition from Andrew Jermolowicz, Director of the Business Development Division of the USDA Rural Business Cooperative Service, stated (among other commendations) that "This badge signifies your long-term commitment to using renewable materials, reducing our reliance on petroleum, supporting the bioeconomy, and bettering the planet through innovation."

Since joining the BioPreferred® Program, Cortec® has earned dozens of USDA certified biobased labels, including at least five awarded just this year. One of our newest is for a corrosion inhibiting water treatment. EcoLine® AL-Corr contains 81% USDA certified biobased content. It is designed to protect the internal surfaces of aluminum agriculture irrigation pipes from corrosion. Cortec® R&D took a double-sided approach to sustainability in the development of this product by not only using renewable resources, but also using biodegradable materials approved for use in personal care products and food preservation. We currently have several more USDA certified biobased labels pending that should be forthcoming in the new year. Be sure to watch for announcements in 2022!

BioPreferred® Pioneer: https://www.cortecvci.com/whats_new/announcements/BioPreffered-program-pioneer-list.pdf#new_tab

EcoLine® AL-Corr: https://www.cortecvci.com/press-release-cortec-presents-a-biobased-answer-to-aluminum-irrigation-pipe-corrosion/

For more information, go to https://www.biopreferred.gov.

Meet Our New Technical Service Engineer: Luke Stone!

We are pleased to introduce the newest addition to our Technical Service team—Luke Stone! Luke joined us at the beginning of November and is currently undergoing training to become familiar with Cortec® Technology and laboratory procedures. He is eager to learn all he can in order to be a strong link in the communication chain at Cortec®. Luke loves to help people and is looking forward to combining creativity with level-headed problem-solving skills to help Cortec® customers find the best solution for their particular need.

Luke brings with him a B.Sc. in Science Education from UW-Stout, where he graduated with majors in Education and Chemistry and a minor in Environmental Science. He has also worked in the fields of transportation, construction, and education. When thinking specifically about the field of corrosion control, Luke stated, "I'm most interested in helping to create a more sustainable future. Less corrosion means less need for replacement and repair, benefiting both our clients and the environment they live in." Luke's main product focus areas will be Water Treatment, MCI®, and Coatings. He will also be available to help with general Technical Service issues.

Join us in welcoming Luke to the team!
Email: Lstone@cortecvci.com
Phone: 651-429-1100 Ext. 1189

Left: Patrick Shortridge has been training Luke in laboratory testing procedures.


Right: Luke Stone takes a break from a training session on the VIA test plug grinder machine.

Lab News

Updated Lab Test Results for VpCI®-330

When we released VpCI®-330 in March of this year, this new rust preventative had already passed more than 800 hours of humidity testing and was still going strong in our laboratory humidity chamber. By late summer, final results had come in at more than 5,000 hours (>7 months) on average of corrosion protection on carbon steel panels coated by VpCI®-330, an exciting addition to our VpCI®-330 lab performance data. Two key benefits that make VpCI®-330 attractive are its usability and workplace safety.

1. VpCI®-330 is very easy to work with and is inconspicuous enough not to require in-process removal in many situations.
2. VpCI®-330 is non-flammable and does not contain nitrites, phosphates, secondary amines, or OSHA hazardous components.

These characteristics translate into overall cleanliness, a more streamlined WIP cycle, and a positive worker experience. Learn more here: https://www.cortecvci.com/whats_new/announcements/VpCI-330-PR-2021-08.pdf


CORTEC CORPORATION
Environmentally Safe VpCI®/MCI® Technologies

VpCI®-330

DESCRIPTION

VpCI®-330 is a clear, ready-to-use low-viscosity rust preventative. It provides excellent protection to metals in indoor and outdoor sheltered conditions. The product leaves a thin, transparent film, great for metal parts that require an almost invisible coat of oil for further processing and/or shipment (e.g., gears, spindles, coils, or any other metal part that should be protected but for which subsequent oil removal is not feasible or desirable).

PACKAGING & STORAGE

VpCI®-330 is packaged in 5 gallon (19 L) plastic pails, 55 gallon (208 L) metal drums, liquid totes, and bulk.

To ensure best product performance, store in original packaging, indoors, and out of direct sunlight at 40-100 °F (4-38 °C).

Shelf life: 2 years

VpCI® METALWORKING PRODUCTS

FEATURES

- Non-flammable
- Clear and homogeneous (from at least 40 to 140 °F [4 to 60 °C])
- Contains no chromates, nitrites, phosphates, secondary amines, or OSHA hazardous components

BENEFITS

- Provides universal corrosion protection to ferrous metals and is compatible with yellow metals
- Performs effectively even under the adverse conditions of 100% relative humidity and in the presence of corrosive species such as chlorides
- Easily sprayed using a handheld trigger spray bottle or common spray equipment

APPLICATION

VpCI®-330 can be sprayed, dipped, rolled, or brushed onto metal surfaces. A handheld trigger spray bottle works well for easy application.

Cortec® Awarded U.S. Patent for Fire Sprinkler Corrosion Mitigation System

Cortec® R&D has done it again, leading the market to another exciting corrosion protection technology for application to real-life needs! Cortec® was awarded U.S. Patent #11,097,139 on August 24th, 2021 for a comprehensive technology system designed to mitigate corrosion inside dry fire sprinkler systems.

Sprinkler corrosion is a serious problem that can lead to clogging, leakage, and even failure of the sprinkler system. This is why the National Fire Protection Agency (NFPA) recommends various precautions for preventing and monitoring corrosion in sprinkler piping. Repair and replacement are expensive and intrusive, which means that the best solution is to prevent corrosion before it causes issues.

The presence of oxygen plus residual water from hydrotesting or usage naturally fosters a corrosive environment inside sprinklers. While nitrogen purge to displace oxygen is one common corrosion preventative measure, it can be expensive and difficult to maintain. Cortec's patented system is designed to be simpler and cost-effective.

Cortec's patent covers a variety of Vapor phase Corrosion Inhibitor application methods. These include pretreatment by fogging, for fast application of Vapor phase Corrosion Inhibitors, or continuous vapor diffusion by means of a pressurized air system running through a specially installed plenum containing Vapor phase Corrosion Inhibitors. These Vapor phase Corrosion Inhibitors form a protective molecular layer on the metal surfaces to reduce the ability of the oxygen and moisture to react and form corrosion compounds with the metal, thus reducing corrosion related repair and replacement of the fire sprinklers.

MCI®-2005 World's First Biobased Corrosion Inhibiting Admixture for Concrete Receives CE Certificate


Institut IGH d.d.
IGH Cert
NB 2477

CERTIFICATE OF CONFORMITY
OF THE FACTORY PRODUCTION CONTROL

2477-CPR-2837

ADMIXTURE
for concrete, mortar and grout
set retarding admixture MCI-2005

placed on the market by:
CorteCros d.o.o.
Nova Ves 7,
HR-10000 Zagreb

and produced in the manufacturing plant:
CorteCros d.o.o.
Cesta Franje Tuđmana 51
HR-21212 Kaštel Sućurac

EN 934-2:2009+A1:2012

Factory production control fulfils all the prescribed requirements

OD 20/936-015

Zagreb, 10 December 2021

"CE marking is a certification that indicates conformity with health, safety, and environmental protection standards for products sold within the European Economic Area (EEA). The CE marking is also found on products sold outside EEA that are manufactured in, or designed to be sold in, the EEA. This makes the CE marking recognizable worldwide even to people who are not familiar with the European Economic Area." - *See "In Compliance"*

"INSTITUT IGH, d.[o.o.] is a Croatian Company active in civil engineering professional services and scientific research, including development of designs, studies, supervision, consulting, investigation works, assessments, laboratory testing and instrument calibration. The company has received certificates for . . . EN ISO 9001, EN ISO 14001 and OHSAS 18001." - *See "Institute IGH"*

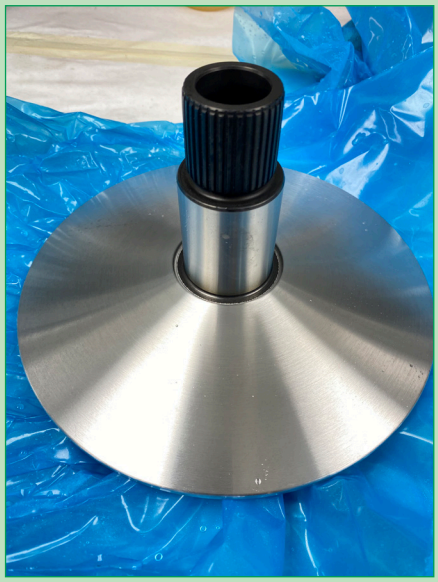
Lab News

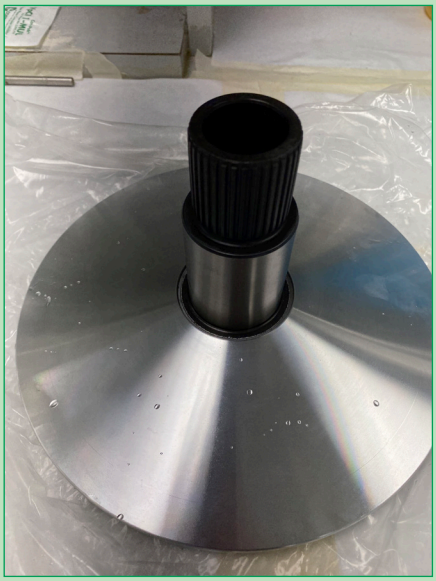
Two Products or One? Lab Testing Shows Advantages of VpCI®-126 Blue

Recent lab testing compared the protection of VpCI®-126 Blue Film with the protection of an oil-based rust preventative plus regular plastic film. Brake clutch components were tested from a client who wanted to compare their current corrosion protection strategy with VpCI®-126 Blue. Three parts were coated with the rust preventative and placed in plain polyethylene film. The other three were placed directly in VpCI®-126 Blue Film. These underwent ASTM D1748 testing in the laboratory humidity chamber for one week. The parts were removed and inspected. All those packaged in VpCI®-126 Blue were corrosion-free on their relevant surfaces, while two out of the three parts packaged in plain plastic with a traditional rust preventative had corrosion on the underside, along with more water accumulation inside the bags. This test underscores how much simpler it is to achieve the same or better corrosion protection with VpCI®-126 Blue instead of plain plastic in conjunction with a rust preventative that has to be cleaned off before use!

At Right: Clutch parts protected in VpCI®-126 Blue, representative of all three samples.

Below: Clutch parts packaged in plain plastic with an oil-based rust preventative show corrosion on two out of three undersides.





Keywords: corrosion inhibitors, green chemistry, compostable film, biobased products, VCI paper, VCI film, Cortec, rust preventatives, Cortec Laboratories, circular economy

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