



The LEADING Edge

Cortec® Laboratories Dedicates New Resources to Maintaining ISO 17025 Certification and Ramping Up R&D

As the only ISO/IEC-17025 Laboratory Testing Accredited facility in the industry, Cortec® Laboratories has the important ability to provide accredited testing services to customers who want to better inform their corrosion inhibitor choices.

Starting in the Fall of 2015, Anne Carlson, a Chemical Engineering graduate from the University of Minnesota, took on the role of ISO 17025 Coordinator, making sure that Cortec® Laboratories stayed up to date with all the standards that validate the lab's credibility to perform various tests. As Carlson's role expanded more and more into engineering activities, and she received the new title of R&D Engineer, Cortec® Laboratories eventually decided it was time to hire new staff for dedicated oversight of ISO/IEC 17025.

At the end of July, Carlson began training Cindy Mason as the new ISO 17025 Coordinator. Mason, who has 13 years of experience as a lab technician in the oil and gas industry, will be making sure equipment is calibrated and paperwork is filled out according to ISO 17025 standards. She will also be assisting with lab testing, equipment maintenance, SOP oversight, and internal auditing. Her goal is to master the ins and outs of the ISO 17025 system and also make internal filing systems more user-friendly.



Left: Anne Carlson (R&D Engineer), Right: Cindy Mason (ISO 17025 Coordinator)

As she "passes the baton" on to Mason, Carlson is eager to become more and more involved in research and development of new products and reformulations, primarily for VpCl® packaging materials. "Now I'm able to concentrate more on the R&D side, so I'm getting pretty excited." Carlson noted that, as far as the customer is concerned the ISO 17025 activities will remain the same. "We are maintaining the certification, dedicating resources to make sure that that's still a priority," stated Carlson. With the addition of Mason, however, Cortec® Laboratories will also have more resources for expanding R&D and providing the best service possible for its customers. To find out more about Cortec® Laboratories' ISO/IEC 17025 accredited testing services, please visit: <http://corteclaboratories.com/services/>

Fostering Innovation around the Globe

In its search for viable environmentally friendly corrosion solutions, Cortec® has engaged with various faculty from academic institutions around the world. One of these experts is Dr. Mohamad Nagi, from the American University in Dubai, who has extensive knowledge of construction materials and metal corrosion. Cortec® recently supported his research program at the American University in Dubai by donating a Potentiostat for use in electroanalytical research. In response to the contribution, Dr. Mohamad Nagi wrote the following note of appreciation to Cortec® CEO Boris Miksic:



Dear Boris,
Hope all's well with you.
I would like to thank you very much on behalf of our center at the American University in Dubai for the Potentiostat. It will really help in our research. I really appreciate your continued support to our university. We are always proud of Cortec as a leader and pioneer in corrosion prevention in our region.
All the Best,
Mohamad

MOHAMAD NAGI, Ph.D., P.E.
Director of Infrastructure Sustainability and Assessment Center

Cortec® Laboratories Contributes Heavily to 2017 Cortec® Whitepaper Series

This year, Cortec® released a number of papers highlighting important corrosion inhibitor technology coming out of Cortec® Laboratories. Many of these papers were written by members of Cortec® Laboratories and are based on important offsite research regarding Cortec® VpCl® Technology. The papers cover everything from Nano VpCl® Technology and MCI® admixtures, to water-based coatings, rocket engine conservation, and hydrazine replacement. Below is an introduction to these informative papers for further reading.

“Power of Diminishing Particle Sizes”

This paper highlights the advantages of Cortec’s VpCl® Technology in “Nano” form utilizing proprietary micronizing technology. This technology allows fast diffusion and protection, superior vapor phase protection at low product dosage, protection of both ferrous and non-ferrous metal, and enhanced surface coverage.

The full paper can be read at: https://www.cortecvci.com/whats_new/announcements/VpCl-White-Paper.Sen.pdf

“Prolong Reinforced Concrete Service Life with MCI® Admixtures”

The prevalence of reinforced concrete as a construction material and its vulnerability to corrosion of embedded steel reinforcement is addressed in a paper about MCI® admixtures for extended concrete service life. Migrating Corrosion Inhibitor™ admixtures help counteract the natural deterioration process of rebar by forming a protective molecular layer on steel surfaces. Data from various tests show MCI® admixtures increasing metal corrosion resistance, reducing corrosion rates even in the presence of cracks, and not compromising the physical properties of the concrete.

The full paper can be read at: <https://www.cortecmci.com/wp-content/uploads/2017/05/Mings-White-Paper.pdf>

“Seawater Rinsedown Testing of EcoShield® 386”

This paper discusses the advantages of using single-component water based coatings to protect metals from corrosion. The use of Nano VpCl® in these coatings can provide enhanced surface coverage along with envi-

ronmental advantages. The paper relates how VpCl® waterborne coatings underwent extreme testing at the NASA Corrosion Technology Laboratory Beachside Corrosion Test Site to study the effectiveness of Nano VpCl®. The NASA testing confirmed Cortec’s own test conclusions that there is an improvement in salt fog performance through the use of Nano VpCl® inhibitor particles in the coatings.

The full paper can be read at: https://www.cortecvci.com/whats_new/announcements/Rick-Shannon-White-Paper.pdf

“Saturn V Rocket Engine Conservation”

Readers of this paper can find out how two Cortec® technologies played a role in the restoration of Saturn V rocket engines recovered decades after being dropped into the Atlantic Ocean during the 1960’s and 70’s Apollo manned missions to the moon. FlashCorr® VpCl® was used to help conservators remove rust stains and chlorides and provide a more flexible storage system for up to 5 months in open air. After cleaning and stabilization, selected objects were coated with a thin-film of VpCl®-377, which provided protection without affecting the artifacts’ appearance.

The full paper can be read at: https://www.cortecvci.com/whats_new/announcements/Casey’s-White-Paper.pdf

“Cortec® S-15 as an Alternate to Hydrazine Treatment in Steam Generating Systems”

This paper was written by a professional engineer on the use of Cortec’s S-15 as an excellent alternative to hydrazine, a highly toxic oxygen-scavenger. The paper presents findings from a 2,200 hour hot steam/water closed loop corrosion test conducted by Behzad Bavarian and Lisa Reiner of California State University, Northridge. The major advantages of S-15 are its improved environmental health and safety impact compared to hydrazine, and its vapor phase activity that allows for corrosion protection even of non-wetted surfaces.

The full paper can be read at: https://www.cortecvci.com/whats_new/announcements/S-15-White-Paper.pdf

Certifications and Patent Milestones

This year marked the recertification of Eco Film® and Eco Works® to bear the DIN CERTCO “seedling” logo, a distinguishing mark of compostability around the globe. Both film types and bags will fully biodegrade into carbon dioxide and water (with no eco-toxicity to the soil, plants, or microorganisms involved) within a matter of weeks after being placed into an industrial compost setting. They meet requirements for industrial compostability according to European (EN 13432), U.S. (ASTM D 6400), and ISO (ISO 17088) standards. The following Eco Film® and Eco Works® products are covered by the DIN CERTCO recertification:

- Compostable Film (reg # 7P0090)
- Compostable Waste Bags (reg # 7P0091)
- Compostable Shopping Bags (reg # 7P0343)

USDA Certified Biobased Product Announcement

A few months ago, Cortec® announced the certification of EcoClean® Biodegradable Scale and Rust Remover as a USDA Certified Biobased Prod-



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uct. Based on third party certification, the product contains 100% USDA certified biobased content. It also qualifies for federal purchasing under the USDA BioPreferred® Program, exceeding minimum USDA certified biobased content requirements for the metal cleaners and corrosion removers category. EcoClean® Biodegradable Scale Remover is effective and easy to use for dissolving heavy scale, corrosion, and naturally occurring oxides off metals. This helps improve flow and efficiency in scale-obstructed pipes and heat exchangers. It can easily be applied in the form of a water-soluble pouch that will dissolve in the water and release the 100% biobased scale remover for action. Users can have the satisfaction that they are making use of renewable resources while they improve the flow and efficiency of their heat-exchanger or pipe systems.

Stayed tuned for news about more USDA certified biobased products coming out of Cortec® Laboratories, as R&D continues to develop renewable corrosion inhibiting solutions.

10 Year Anniversary of Innovative Patent for AST Protection



Cortec® prides itself on innovation and finding more effective solutions where traditional corrosion treatments are deficient. One 2017 milestone representing this innovation is the ten year anniversary of a US patent covering VpCI®-608. VpCI®-608 is a Vapor phase Corrosion Inhibitor containing product designed specifically

to work in conjunction with Cathodic Protection (CP) for the protection of aboveground storage tank bottoms. CP in the form of a sacrificial anode or an impressed current is often used to protect the bottoms of aboveground

Product Releases

Cortec® R&D has been busy formulating and reformulating corrosion solutions. With many new products in the line-up, here are four that have recently been highlighted in Cortec® news.

EcoAir® Graffiti Remover Enhanced with Nano VpCI® Technology: EcoAir® Graffiti Remover is a semi-viscous liquid used to remove graffiti, inks, and paints from metal, concrete, and wood. The exceptionally smooth flowing gel helps achieve complete coverage for vertical surfaces or surfaces of varying geometry. EcoAir® Graffiti Remover contains an inhibiting compound to prevent flash rusting and discoloration of metals after graffiti removal. EcoAir® Graffiti Remover comes in an air-powered spray can that dispenses the product by compressed air without the use of CFC or HCFC propellants that would affect the ozone layer. EcoAir® Graffiti Remover has a relatively low level of toxicity and does not rely on some of the typical chemicals used for stripping such as methylene chloride, chlorinated solvents, methanol, toluene, and acetone.

Read more: https://www.cortecvci.com/whats_new/announcements/Graffiti-Remover-PR.pdf

VpCI®-340 CLP Reformulation: Cortec® R&D has developed a superior reformulation of VpCI®-340 CLP for cleaning, lubricating, and protecting purposes. The upgraded formula has undergone extreme testing to ensure top quality product performance geared toward the demands of military standards. The result of seeking to meet extremely high standards was a CLP product with better corrosion protection, excellent lubricity, and the ability to maintain viscosity at extremely low temperatures.

Read more: https://www.cortecvci.com/whats_new/announcements/VpCI-340CLP.pdf

storage tanks from corrosion, but irregularities in the tank floor may put certain areas out of reach of the protection. VpCI®-608 is designed to enhance protection by using vapor phase action to protect difficult to reach areas not protected by CP. VpCI®-608 also has the advantage of continuing to work if the CP system fails. The ten year patent anniversary marks yet another important step in Cortec's journey of R&D innovation and achievement.

CE Certification Announcement

Cortec® recently made the important announcement that several of its Migrating Corrosion Inhibitor™ products had received CE certification. The certification opens the EU market to specific Cortec® corrosion inhibiting construction products by certifying that Cortec® meets the 2+ certification system requirements for assessing and verifying the constancy of the products under the EN 1504 standard. Among these products are MCI® CorrVerter®, MCI®-2018, MCI®-2019, MCI®-2021, and MCI®

Architectural Coating. To comply with CE standards, Cortec® Laboratories has worked hard to implement European QA testing specs for the products and has purchased state-of-the-art equipment for that purpose.



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CorroLogic® Nano VpCl® Powder: CorroLogic® Nano VpCl® Powder is a Vapor phase Corrosion Inhibitor powder of superfine particles, a few microns in size, designed particularly for soil-side corrosion protection of ASTs. When applied in enclosed void spaces, such as those below ASTs, CorroLogic® Nano VpCl® Powder diffuses, sublimates, and forms a self-healing protective film on the metal surfaces. Due to its superfine particle size, CorroLogic® Nano VpCl® Powder works faster, travels farther, and has better coverage than standard VpCl®. In addition to protecting against soil-side corrosion in ASTs, it is also effective for applications in other hard-to-reach recessed areas, interior cavities, and voids.

Read more: https://www.cortecvci.com/whats_new/announcements/Corrologic-PR.pdf

EcoWeave® In-House Production: After investing significant R&D time and effort into the project, Cortec® expanded its capabilities to encompass on-site melt coating of EcoWeave® at Cortec® Coated Products (CCP) in Eau Claire, Wisconsin. Made from the same type of woven polyolefin film used to wrap lumber, EcoWeave® is extremely durable, yet lightweight and versatile. EcoWeave® offers a combination of tear resistance, durability, and VpCl® chemistry that work together to provide protection against harsh outdoor elements, physical damage, and corrosion.

“By making it in-house we have more flexibility,” explained Robert Kean, Ph.D., Director of Cortec® Laboratories, who played an active role in R&D experimentation. As with other products and processes that follow Cortec’s ideology of vertical integration, making EcoWeave® in-house will also give Cortec® greater oversight of the quality of the product that rolls off the machine. This would not have been possible without the visionary involvement and persistence of Cortec® founder and CEO, Boris Miksic, the driving force to make this a successful product in-house.

Read more: https://www.cortecvci.com/whats_new/announcements/EcoWeave-PR.pdf



COMING SOON

Stay tuned for more information forthcoming on the following products:

- EcoShield® Super Barrier—A recyclable moisture barrier paper
- CorrVerter® MCI® Rust Primer—Water-based primer that converts rusted surfaces to a passive layer

- EcoLine® VpCl®-642— Offshore hydrotesting inhibitor containing 93% USDA Certified Biobased Content
- VpCl®-352—Multi-metal VpCl® coating for flexible packaging and corrugated board
- VpCl®-372E—An extra thick water-based acrylic peelable coating



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