



# CORTEC

Laboratories, Inc.

# *Solutions Start Here*



**ISO/IEC-17025**  
LABORATORY TESTING CERTIFIED



**CORTEC**  
CORPORATION

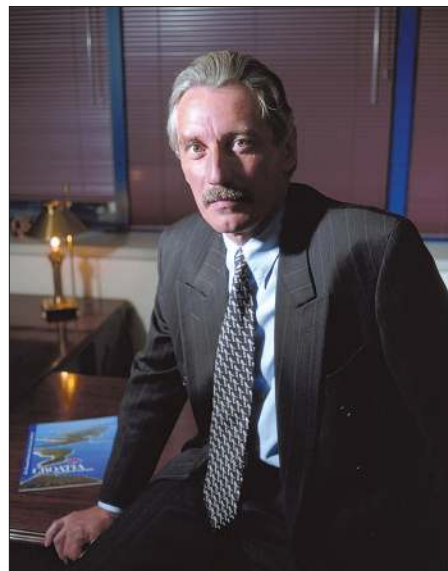
*Environmentally Safe VoCl<sup>2</sup>/MCl<sup>2</sup> Technologies*



## Our Corporate Vision

“Vision is the ability to see things that are invisible” As CEO of Cortec Corporation, it is my job to help create and to champion our company’s vision. Vision is important, because without it nothing grows. These visions have always been created with the conclusion in mind, which have involved the growth of Cortec® as the ultimate ending. Sometimes, the ending may not be quite what I initially envisioned it to be, but these visions usually help take us to the next level. I believe that we would all agree that it is easy to view the past and difficult to see the future. Looking to the future is not easy because it takes courage, risk and commitment, not just by me, but also from every member of the Cortec® family. Your commitment needs to start with faith (belief without evidence) that we are the best at what we do and we provide the best to our customers.

Today, we are ready to take our company to the next level of growth. We need to have everyone working as a team in order for us to reach our corporate vision, as well as our personal goals. We all win when we work efficiently together. We need to continue to produce break-through products and applications. We need to focus on increasing our sales and reducing our expenditures. Your actions will continue to keep our products competitive in today’s World market. It’s a challenge, but you can do it! It will be fun. Think about this as the vision of Cortec®:



Boris A. Miksic,  
President and CEO of Cortec® Corporation

- **World Class Product Offerings**

*An Innovator and designer of leading-edge products*

- **World Class Customer Service**

*A positive, long-lasting impression through every link of our company*

- **An Ethical and Respectful Company Culture**

*Respect and treat our colleagues, customers and vendors, as we would our own family members*

- **An Energized, Friendly, Empowered, Knowledgeable Team**

*Develop your knowledge and application of our products, no matter what your job title is. Once you know it – you’ll be excited.*

- **A Company Atmosphere which Fosters Continuous Improvement and Open Communication**

*Teach each other. Make it better. Improve at your job.*

- **Achieve Profitable Sales Growth**

*Nothing will grow without your cooperation.*

- **HAVE FUN!**

*“If you choose a job you love, you will never work a day of your life.”*

*I love to see people that do a great job and have fun doing it! These are the real company heroes.*

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## Our Laboratory Mission

- To continue to develop innovative, high quality, environmentally friendly products.
- Provide exceptional technical service to customers. No matter how big the project or how small the request, we strive for excellence in our response.
- We truly believe in, care for, protect and support each other.

## Our Quality Promise

Cortec® Corporation is committed to continual improvement of processes and services to achieve ongoing customer satisfaction. It is therefore our policy to:

- *Consistently provide quality testing services that conform to customer and regulatory requirements.*
- *Ensure that all personnel are competent and qualified for the tasks they perform and that all personnel familiarize themselves with quality system documentation in order to implement the policies and procedures in their work.*
- *Professionally and effectively perform testing services to produce accurate and precise results.*
- *Consistently comply with ISO/IEC 17025 to ensure quality testing services, and to continually improve the effectiveness of the Quality Management System. It is Cortec Corporation's goal to encourage active participation of all employees in quality planning and continual improvement efforts to meet all quality and service objectives.*

Cortec® Corporation is recognized as an active contributor to the scientific community having been awarded 40 patents and presented over 250 publications and presentations. Cortec and its employees are active members of several professional and scientific organizations including the National Association of Corrosion Engineers, Concrete Corrosion Inhibitors Association, American Chemical Society, Northwestern Society for Coatings Technology, Association of Water Technologies, US Green Building Council, Society of Plastic Engineers, and Licensing Executive Society.





**Scope of Accreditation  
For  
Cortec Corporation**

4119 White Bear Parkway  
St. Paul, MN 55110  
Alla Furman  
651-429-1100, ext. 168

In recognition of a successful assessment to ISO/IEC 17025:2005, accreditation is granted to **Cortec Corporation** to perform the following tests:

Accreditation granted through: **August 30, 2016**

**Testing - Mechanical**

Technology	Range, when necessary	Methods Used	Product Types	Remarks
Viscosity		ASTM D2196 CC-035	Coatings, lubricants	Ambient Temperature
Accelerated Weathering Test, UV Stability		ASTM G53	Coatings, polymer films	
Humidity		ASTM D1748 ASTM D1735 CC-018	Coatings, lubricants	
Salt Fog		ASTM B117 ASTM B368 (CASS)	Coatings, lubricants	
Vapor Inhibiting Ability (VIA)		MIL-STD-3010B CC-027	Crystalline, Liquids, VCI coated materials, VCI containing films	
Immersion Corrosion Testing		ASTM G31 CC-029	Additives, corrosion inhibitors for water	Ambient and up to 95 C
Electrochemical Polarization Measurements		ASTM G5 CC-030	Water based Electrolytes	Ambient and up to 95 C
Electrochemical Impedance Measurements		ASTM G106 CC-022	Concrete samples with rebars	
Cyclical Testing		GMW 14872	Coatings, RP	

Technology	Range, when necessary	Methods Used	Product Types	Remarks
Color Matching		CC-033	Coatings	
Adhesion (Tape)		ASTM D3359	Coatings	
Adhesion (Testers)		ASTM D 4541 (Test Method B); ASTM D7234 CC-034 CC-036	Coatings	

**Testing - Chemical**

Technology	Range, when necessary	Methods Used	Product Types	Remarks
Fourier Transform Infrared (FTIR)		CC-006	Liquids, powders, polymer films	
Ultra Violet (UV) Visible Spectrometry		ASTM E 169; ASTM D 2008; CC-040	Liquids	

Notes:

- 1) This laboratory offers commercial testing service.

Approved by:   
R. Douglas Leonard  
Chief Technical Officer

Date: November 19, 2013

Reissued: 11/19/13





**Front (from Left):** Josh Hicks, Debbie Hannan, Cindy Johnson, Liz Austin  
**Middle:** Ming Shen, Alla Furman, Brian Benduha, Rita Kharshan, Deb Heroff  
**Back:** Ron Camp, Eric Uutala, Caleb Pheneger, Robert Kean

## Cortec® Laboratories is comprised of a diverse group of scientists providing experience across many markets.

Name	Title	Education	Years of Experience	Area(s) of Expertise
<b>Rita Kharshan</b>	VP of R and D	PhD	> 30	Metalworking, Surface Preparation, Temporary Coatings, Water Treatment, Organic Chemistry
<b>Alla Furman</b>	Sr. Corrosion Engineer	PhD	> 30	Oil and Gas Industry, Water Treatment, Concrete Chemistry, Electrochemistry
<b>Ming Shen</b>	R&D Engineer	PhD	1	Analytical Chemistry
<b>Eric Uutala</b>	Technical Service Manager	BS	8	Corrosion Testing, Surface Preparation, Metalworking, Packaging, and Electronics
<b>Andrea Hansen</b>	EMS Coordinator	BS	8	EMS, Water Treatment, Concrete, Corrosion Testing
<b>Liz Austin</b>	Sr. Laboratory Technician	BS	7	Corrosion Testing
<b>Josh Hicks</b>	Technical Service Engineer	BS	3	Biochemistry, Water Treatment, Concrete
<b>Robert Kean</b>	Biotechnologies and Patents Manager	PhD	> 20	Intellectual Property, Bioplastics, Physical Chemistry, Analytical Chemistry
<b>Debbie Hannan</b>	Corporate Director of Quality and Safety	AS	12	Quality and Safety
<b>Deb Heroff</b>	QC Lab Technician		5	Quality Control
<b>Cindy Johnson</b>	Laboratory Administrative Assistant		8	Technical Publications
<b>Ron Camp</b>	Coatings Chemist	BA	20	Coatings
<b>Caleb Pheneger</b>	Technical Service Engineer	BS	1.5	Metalworking, Surface Preparation, Packaging, Electronics, Corrosion Testing
<b>Brian Benduha</b>	Lab Technician	AS	7	Quality Assurance and Corrosion Testing



## **Cortec® Laboratories** **Test Services and Capabilities**

*Our data is the essence of both our business and, more importantly, our client's business.*

### **Environmental Test Chambers**

We offer a variety of environmental chambers capable of temperature and humidity cycling, salt fog, and accelerated weathering. Test chambers include CCX advanced cyclic corrosion cabinet, Q-Fog environmental chamber, QUV accelerated weathering tester, salt spray chamber, and humidity cabinet. Test capabilities include ASTM B117, D1748, D1735, G53, GM9540P and other custom defined tests.



### **Chemical Testing**

Cortec® Laboratories is fully equipped to analyze and evaluate chemicals using general chemistry techniques. Test capabilities include rheological measurements, pH, weight per gallon, non-volatile content, flash point determination, refractive index, water quality testing, reserve alkalinity, gas chromatography-mass spectroscopy and fourier transform infrared spectroscopy.



### **Corrosion Testing**

The corrosion resistance of materials and coatings are evaluated by exposing them to controlled environments to accelerate and replicate known conditions which result in degradation or corrosion of materials. Being an industry leader in corrosion inhibition our lab is fully equipped to analyze the corrosion resistance of coatings, lubricants, rust preventatives, water treatment additives, etc. Test capabilities include immersion/half-immersion testing according to ASTM G31, corrosive gas environment testing, contact corrosion testing, vapor inhibiting ability (VIA), electrochemical testing, salt fog and humidity.



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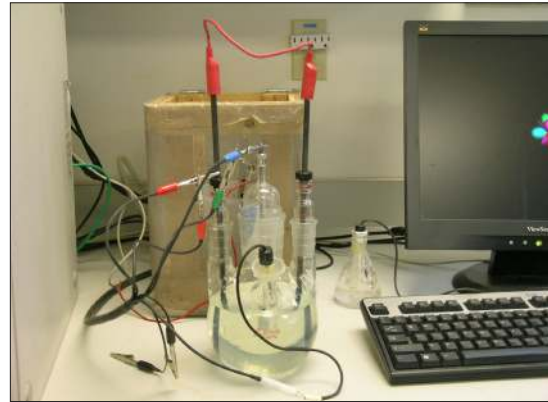
## Coatings

Our lab is fully equipped with the most up to date testing equipment to evaluate the performance of coatings. Cortec® Laboratories has developed expertise in evaluating a wide range of coating performance including: adhesion, surface abrasion, sag, gloss, film hardness, impact resistance, color, and corrosion resistance.



## Electrochemistry

We offer a variety of DC Electrochemistry and Electrochemical Impedance Spectroscopy techniques to evaluate the electrochemical behavior of coatings, additives, concrete mixtures, and corrosion inhibitors. Measurements are conducted according to standard test methods such as ASTM G5 and ASTM G106; from which the corrosion rate and mechanism of corrosion can be deduced.



## Concrete Testing

Laboratory and field testing services in the construction industry evaluate the half cell potential and corrosion rates of reinforced concrete through electrochemical analyses. Cortec Laboratories utilizes the galvanostatic pulse method to assess the risk of corrosion to reinforcement in concrete structures. Laboratory services also include concrete preparation, mix design testing, and EIS studies.



## Paper and Polymer Film Testing

Cortec® Advanced Films Division has the capacity to perform mechanical properties testing of polymeric films including tensile strength, tear propagation, puncture resistance, impact resistance, coefficient of friction, cling peel, static decay, and surface resistivity. Common test methods employed include ASTM D882, D1922, D1709, and D1894, among others.

Cortec® Coated Products laboratory is fully equipped with an extensive array of testing equipment to evaluate the properties of coated papers and other substrates. Testing capabilities includes basis weight, caliper, curl, smoothness, tear, porosity, gloss, moisture, and brightness.





# Cortec® Corporation World Headquarters • St. Paul, MN



Visit our websites for more information on Cortec® Corporation.

### LIMITED WARRANTY

All statements, technical information and recommendations contained herein are based on tests Cortec® Corporation believes to be reliable, but the accuracy or completeness thereof is not guaranteed.

Cortec® Corporation warrants Cortec® products will be free from defects when shipped to customer. Cortec® Corporation's obligation under this warranty shall be limited to replacement of product that proves to be defective. To obtain replacement product under this warranty, the customer must notify Cortec® Corporation of the claimed defect within six months after shipment of product to customer. All freight charges for replacement product shall be paid by customer.

Cortec® Corporation shall have no liability for any injury, loss or damage arising out of the use of or the inability to use the products.

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4119 White Bear Parkway, St. Paul, MN 55110 USA  
Phone (651) 429-1100, Fax (651) 429-1122  
Toll Free (800) 4-CORTEC, E-mail info@ cortecvci.com



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