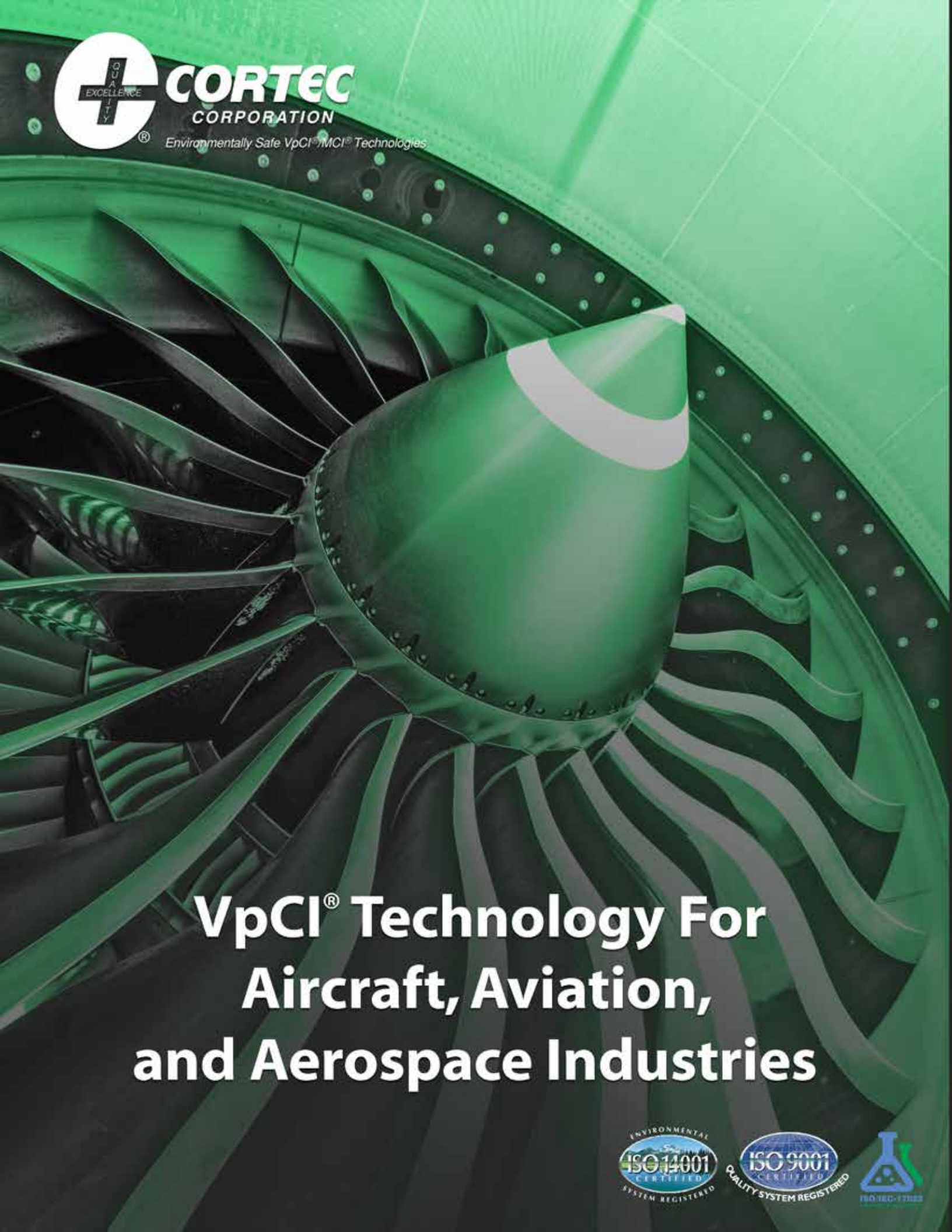
CORTEC CORPORATION

Environmentally Safe VpCI® /MCI® Technologies



VpCI® Technology For Aircraft, Aviation, and Aerospace Industries

ISO 14001 CERTIFIED — ENVIRONMENTAL SYSTEM REGISTERED

ISO 9001 CERTIFIED — QUALITY SYSTEM REGISTERED

ISO/IEC 17025

VpCI® Technology for Aircraft, Aviation, and Aerospace Industries

PROTECT THE AIRCRAFT INDUSTRY

Corrosion is a perennial problem in the aircraft industry, and preventing corrosion is a critical factor in maintaining the integrity and safety of an aircraft vehicle. Left undetected and untreated, aircraft corrosion can quickly lead to potentially catastrophic vehicle failure.

CAUSES OF CORROSION

Corrosion occurs when metal is exposed to oxygen and moisture. Corrosive chemicals or dissimilar metals can also initiate the corrosion process. Surface corrosion frequently occurs where metal is exposed or paint has worn thin. Stress corrosion is a common problem for aircraft under tensile stress in corrosive environments. Corrosion risks increase with aircraft age or exposure to extreme moisture and harsh environments.

PROTECTION METHODS

Good corrosion preventive maintenance and early treatment are crucial strategies for protecting aircraft from corrosion failure. Keeping a vehicle clean with corrosion inhibiting washes and storage methods helps protect aircraft from corrosion attack during regular use and storage. Sometimes rust removal may be needed before applying additional corrosion inhibitors, such as VpCI® primers and coatings, to an aircraft. With Cortec® Vapor phase Corrosion Inhibitors (VpCIs) it is possible to slow the attack of corrosion on aircraft from multiple angles.

Types of Corrosion[1]

SURFACE CORROSION

Corrosion on aircraft surfaces can be indicated by roughening, etching, pitting, or blistering of the paint or plating, as well as the presence of powdery deposits. Surface corrosion of the filiform type looks like the presence of worms under the paint.

DISSIMILAR METAL CORROSION

Electrochemical corrosion can occur when dissimilar metals come in contact with each other and create a galvanic action. This can cause pitting damage that is difficult to detect because it often arises in unseen areas of an aircraft.

INTERGRANULAR CORROSION

Flaking metal may be an indication of intergranular corrosion. This is usually instigated by lack of uniformity in the metal stemming back to the manufacturing process. Intergranular corrosion can be difficult to detect.

STRESS CORROSION

The combination of a corrosive environment and tensile stress can result in stress corrosion cracking. This is common and often occurs in metal systems such as landing gear.

FRETTING CORROSION

The slight rubbing of two mated surfaces can produce pitting and fine debris. Often the debris is trapped in tight locations. The problem worsens in the presence of moisture.

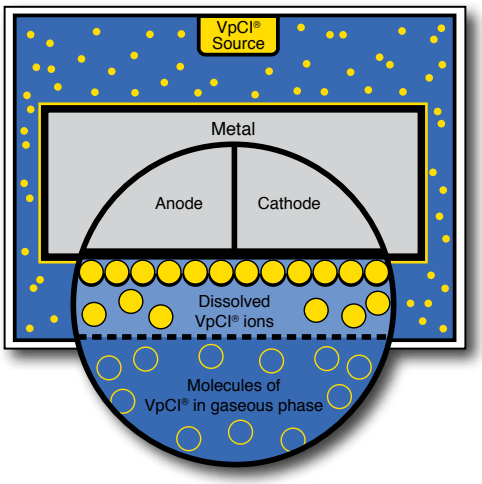
[1]Source: FAA AC 8083-30 Chapter 6: Aircraft Cleaning and Corrosion Control

CORTEC® ADVANCED TECHOLOGY

Cortec® has developed technology to fit the ever-increasing demands for better corrosion control measures in the aviation industry. Thanks to the development of new technologies and the committed work of our scientists and engineers we are able to use the most innovative advanced corrosion protection method available today - the application of VpCI®. This is a safe, cost-effective method for preventing severe damage caused by corrosive processes in the aircraft industry. Cortec's technology and products offer highly efficient and economical protection enabling our customers to effectively fight corrosion while decreasing their costs.

VAPOR PHASE CORROSION INHIBITORS (VPCI®)

VpCI® Technology is an innovative, environmentally safe, cost-effective option for corrosion protection. Cortec® products protect with a thin, mono-molecular protective barrier. Unlike conventional corrosion inhibiting methods, Cortec® VpCIs create a barrier that re-heals and self-replenishes itself, and can be combined with other functional properties for added protective capabilities. VpCI® physically adsorbs on metal surfaces creating a barrier layer against aggressive ions. Cortec's VpCI® additives offer highly efficient, pro-environmental, and economical corrosion protection for process systems. While conventional corrosion inhibiting treatments provide protection at the liquid phase only, Cortec® VpCI® Technology provides corrosion protection in the liquid phase, interphase, and vapor phase.



Corrosion control is an ongoing process for a persistent problem. The return on investment is invaluable in terms of safety alone. As such, corrosion control is an issue that cannot be ignored.

Vertical Integration and ISO Total Quality to Reduce Risk

ISO Accredited Laboratories for Validation Testing

Trusted Global Manufacturing and Technical Service in 90+ Countries

HOW CORTEC® CAN CUT COSTS

- Water-based and multi-purposed VpCIs are more economical than conventional oil-based rust preventatives.
- Efficient application results in labor savings.
- VpCIs offer improved health, safety, and pollution control characteristics.
- There is no need to remove the VpCI® protection layer, eliminating extra processing steps.
- VpCI® treatments virtually eliminate economic loss due to rust, speckling, staining, and other forms of corrosion, cutting rust claims and returns while improving the quality of your product.

CONTINUOUS VPCI® PROTECTION

Unlike conventional methods, Cortec® VpCIs can be injected into a system at multiple points. Cortec® VpCIs go to work immediately and are self-replenishing, providing continuous, uninterrupted protection in the liquid phase, interphase, and vapor phase. For example, the automatic injection of Cortec® VpCIs into a system — with no attendance operator — provides protection immediately, even on pre-rusted or scaled surfaces.

ENVIRONMENTAL SAFETY

Cortec's VpCI® Technology provides a new, pro-environmental set of answers. It offers the most environmentally safe method of corrosion prevention available today, with low toxicity and low polluting effects. As a chemical company, Cortec® believes in intelligent design and commitment to pro-environmental manufacturing and practices. Our commitment is reflected with Cortec's certification under the ISO 14001: 2008 Environmental Standard. Unlike corrosion inhibiting systems of the past, many Cortec® VpCIs do not contain chromates or other heavy metals, nitrites, or chlorinated hydrocarbons. With the support of our corrosion scientists, engineers, and testing facility, Cortec® provides simple, environmentally friendly, cost-effective solutions to corrosion problems.

CORTEC® PRODUCTS SUMMARY AND BENEFITS

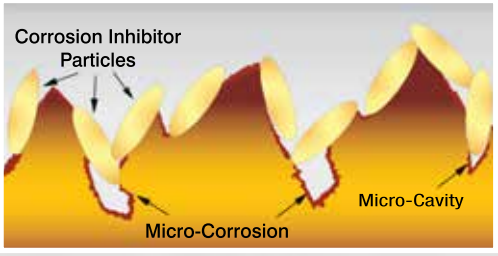
- Saves costly time and labor
- Protects the environment
- Offers complete package solutions
- Disperses in water, oils, solvents
- Formulates easily
- Protects multi-metals
- Comes in multifunctional products
- Does not alter emulsion properties
- Protects against SCC (Stress Corrosion Cracking) and HE (Hydrogen Embrittlement)
- Requires little or no surface preparation
- Prevents further corrosion of ferrous surfaces
- Does not interfere with operation of mechanical components

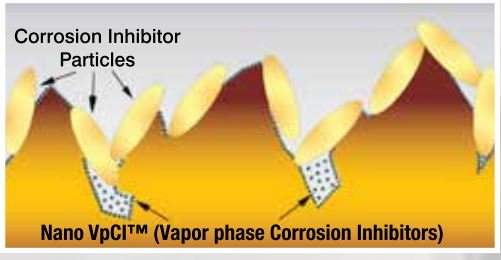
MICRO-CORROSION INHIBITING COATINGS POWERED BY NANO VpCI™

Traditional coatings rely on sacrificial metals (zinc, chromates, aluminum) for inhibition. Due to the large particle size of these inhibitors, gaps exist which allow corrosion to start and eventually expand, causing coating failure.

Cortec® Nano VpCI™ coatings use the patented VpCI® Technology to protect the metal substrate with a tight bonding molecular structure. This system eliminates the gaps which occur with traditional inhibitors and prevents corrosion from starting.

Cortec® offers VpCI® primer (a corrosion inhibiting base coat with good adhesion to aluminum), VpCI® top clear coat for exteriors, and VpCI® interior coating for protection of vulnerable internal surfaces.





Case Histories

U.S.A.F. Aerospace Ground Support & Equipment Preservation (Case History 361)

The Air Force is continuously looking for improved processes and procedures to save military funds, resources, and manpower. Corrosion is a mechanism that continues to reduce aircraft and aircraft support equipment (AGE) life cycle.

This project, directed by the Air Force Corrosion Prevention Control Office, was designed to investigate the benefits of a corrosion inhibiting shrink wrap film as a solution. Two air conditioner units were supplied by the Air National Guard unit at Travis Field in Savannah, GA. Travis Field has limited covered storage and was interested in the potential of the film wrapping material. Both units were in excellent condition, and showed no visible evidence of corrosion at the beginning of the project. Each air conditioning unit was wrapped with MilCorr® VpCI® Shrink Film and taken out of maintenance service. Air vents were installed on opposite sides of the air conditioner units, which allowed the wrapped units to breath and release moisture. This prevented water from collecting inside or condensing on the equipment. The duration of this project was one year.

Upon opening the sealed units there was no evidence of any standing water or other environmental elements inside the package. The two pieces remained in the same condition as when the project began the year earlier. Neither unit had visual evidence of corrosion or corrosion related issues. In addition, Travis Field personnel expressed their interest in using the Cortec® VpCI® materials to preserve additional units.

Barcelona Airport Control Tower (Case History 372)

A new control tower platform at the Barcelona Airport was being built and protection of the corrugated reinforcing steel was needed. The platform is the base to the 44.55 meter (48.72 yd) tall control tower facilities and service. Cortec® Corporation's MCI® Coating for Rebar NT was the selected corrosion protection product, which was applied directly to the corrugated steel. The product was chosen for its ease of use in areas with limited access. In order to completely protect the platform slab, which measures 518.4 cubic meters (678.08 yd^3), 152 liters (40.15 gal) of MCI® Coating for Rebar NT was needed. The recommended dry film thickness for this case was 25 microns (1 mil.) The product cures as a non-sticky, soft film that eventually hardens. MCI® Coating for Rebar NT has been tested for effect on adhesion of concrete with reinforcement in accordance with standard ASTM A944-99. The results of this test were exceptionally good, confirming this product does not interfere with the bond strength of corrugated steel reinforced concrete. The concrete for the tower was poured during the days following the application of MCI® Coating for Rebar NT.

Preservation of Naval Aircraft Engine (Case History 233)

Using the following materials, the Indian Navy previously had a very cumbersome, time consuming, labor intensive and expensive method of preserving their aircraft engines for a period of two years:

- *Moisture Barrier Bag - 1 no.*
- *Paraffin Paper - 30 meters*
- *Silica Gel - 10 kgs.*
- *Rust Preventive Oil - 15 litres*
- *Gasoline - 4 litres*
- *Poly Sheet - 20 meters*

Except for the Moisture Barrier Bag, these products were replaced every three months and the Silica Gel regenerated by heating. These products are toxic and cause lead poisoning. Additionally, it took one and a half days each quarter to renew this protection system. In spite of all this, the engines were still corroding during storage, and the customer decided to try Cortec's solution.

APPLICATION

1. Cleaned all accessible surfaces of the engine with VpCI®-416 (1:6 solution). 2. Wiped these surfaces with Cortec® VpCI®-377 (1:9 solution). 3. Inserted VpCI®-132 Foam Pads (7 per engine), cutting to suitable size and placing them into various cavities, voids, intake and outlet chambers, and also on external surfaces of the engine. 4. Wrapped the entire engine with VpCI®-146 Paper and sealed. 5. Wrapped the equipment further with VpCI®-126 Film and sealed once again.

Cortec® was selected because our protection system is clean and convenient to use. Products only need to be applied once every two years. It takes just two hours to apply and 15 minutes to dismantle and remove. This is saving the customer valuable time, and by switching to Cortec's method, the customer saved 60-70% on current costs. Considering the fact that the Aviation Wing of the Navy, as well as the Indian Air Force itself, has a large number of engines to preserve, this was a huge savings for the Indian Defense Organization. Most of the Cortec® products are commercially equivalent to MIL Specs and offer far superior, reliable, and efficient inhibiting action, which has been proven worldwide.

(Note: VpCI®-126 at 150 micron also has Rolls Royce approval for military aircraft spares.)

U.S. Air Force – Lockheed Martin (Case History 120)

Lockheed Martin's backup generator for emergency flight operations was rusting severely. Stored in an extremely salty environment at the edge of the ocean, the generator needed protection from the elements. The solution had to prevent any further rust damage to this important piece of equipment. Cortec® VpCI®-374 primer was applied on all rusted areas of the generator and Cortec® VpCI®-132 Foam was inserted into the generator cabinet. The entire generator was covered with a CorShield® custom cover. This large protective cover with velcro closures could be removed quickly in case of emergency. Lockheed chose Cortec® products because of the superior corrosion protection they provide even in a highly corrosive environment. The UV protection provided by the CorShield® cover was also a huge benefit.

Photo courtesy of Washington Times

Cleaning Coast Guard Aircraft (Case History 170)

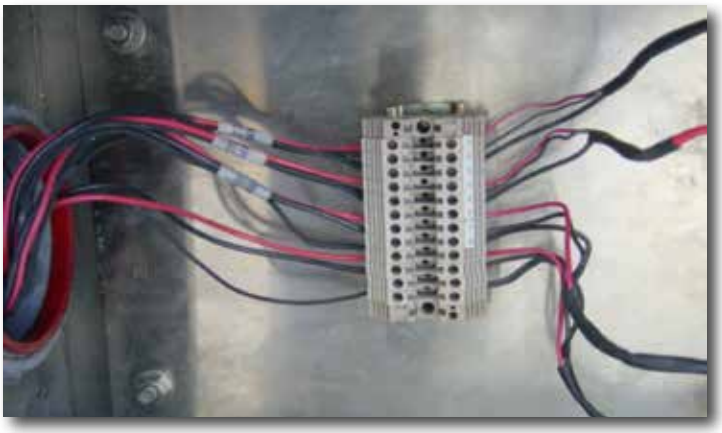
The US Coast Guard had been using Simple Green Cleaners to clean all of their aircrafts. They were experiencing corrosion problems on some of these craft and were looking for a cleaner that could provide added corrosion protection. In addition, they were also interested in a more environmentally safe cleaner.

After one year of testing Cortec® VpCI®-415, the US Coast Guard is now using VpCI®-415 on all of their aircraft. Depending on the aircraft being cleaned and the amount of dirt and chlorides that are being removed, the working concentration is anywhere from 10%-100% VpCI®-415. In all instances, the cleaner is applied with a pressure spray wand and left on the surface for 3-5 minutes. The surface is then lightly agitated with a brush, and finally rinsed clean with water.

Before VpCI®-415 could be used at any of the Coast Guard locations, it needed to go through extensive testing to ensure that it had no adverse effects on the aircraft, met their cleaning requirements, and provided the desired protection. VpCI®-415 met these requirements and provided the Coast Guard with superior results.

Protection of Electrical Cabinets (Case History 243)

Lockheed-Martin, Atlas 5 – Launch Pad, Cape Canaveral, Florida: The client found that three out of 11 control panels close to their rocket launch pad were beginning to show signs of corrosion at the wire terminal block connection points.



They realized that the three cabinets were the only ones that had no Cortec® inhibitor protection, while the other cabinets were protected with VpCI®-111 Emitters and were showing no corrosion at all. They also realized at that time that the exterior stainless steel cabinets were being attacked by corrosion.

The Cortec® solution for the unprotected cabinets was to spray the interior with VpCI®-239 and install VpCI®-111 Emitters inside the cabinets. The client acknowledged the need for the corrosion protection of the cabinet's exterior surface and planned to send for evaluation and approval per Cortec's recommendation to use VpCI®-386 Clear. After 2 years, the emitter protected cabinets still showed no signs of corrosion. The client was impressed and eager to maintain the same level of protection in all their un-protected cabinets.

Cortec® VpCI® Coatings Outperformed Competition in NASA Research Project!

Cortec® Corporation proudly announces that its globally known VpCI® inhibitors performed best among all the corrosion preventive compounds tested in a real life test, "The Behavior of Environmentally Friendly Corrosion Preventative Compounds in an Aggressive Coastal Marine Environment," conducted by NASA at their atmospheric test station at the Kennedy Space Center in Florida. This is known as the most corrosive area in the United States and one of the most corrosive places in the world because of its hot climate, proximity to the Atlantic ocean, and winds carrying salt spray and fallout of rocket propellants that are highly corrosive.

Kennedy Space Center is located within the Merritt Island National Wildlife Refuge; therefore environmentally-friendly alternatives are highly sought after. The shift to use environmentally friendly technologies throughout future space-related launch programs prompted a study aimed at replacing current petroleum and solvent-based corrosion preventive compounds with safer alternatives.

This research focused on identification and evaluation of environmentally friendly CPCs for use in protecting flight hardware and ground support equipment from atmospheric corrosion. The corrosion preventive compounds needed to survive in the aggressive coastal Space Center environment in Florida.

Location of the beachside corrosion test site at Kennedy Space Center, Florida, along the Atlantic Ocean (left) and panels after initial CPC application and exposure to the marine atmosphere at the test site (right).

The objective was to determine if environmentally-friendly CPCs would provide adequate corrosion protection for spaceport structures and related hardware used at NASA's center, considering the large number of environmental and safety issues associated with conventional CPCs. Petroleum-based CPCs have become increasingly impractical for use at this location due to environmental concerns and cumbersome containment procedures required during application and removal.

Three of the Cortec® products—VpCI®-368, EcoLine™ 3690, and EcoLine™ HD Grease—were tested along with 12 others in this important research project and showed outstanding results.

CPC-coated Carbon Steel Panel from Initial Exposure through 6 Months, No. 10 showing VpCI®-368.

The different protection behaviors of 15 different soft film CPCs, both common petroleum-based and newer environmentally friendly types, were evaluated on various steel and aluminum substrates. The CPC and substrate systems were subjected to atmospheric testing at the test site located in Kennedy Space Center as well as to cyclic accelerated corrosion testing. Each CPC also underwent physical characterization and launch-related compatibility testing.

CPC Applications of Interest: Spaceport ground support equipment, aircraft applications, marine applications, ground operations applications, launch applications.

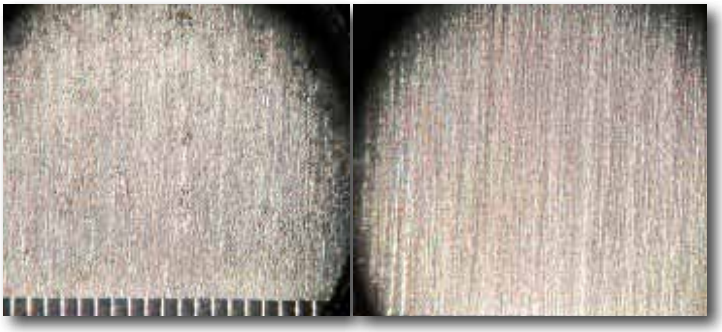
The summary of current results and analysis performed by NASA showed that of all the CPC's tested Cortec's inhibitors exhibited the least amount of both crevice and galvanic corrosion and have penetrated successfully under the fastener as well as provided good protection considering the long atmospheric exposure time pe-

riod. VpCI® -368 was the only inhibitor tested to resist corrosion for of all of the aluminum alloys!

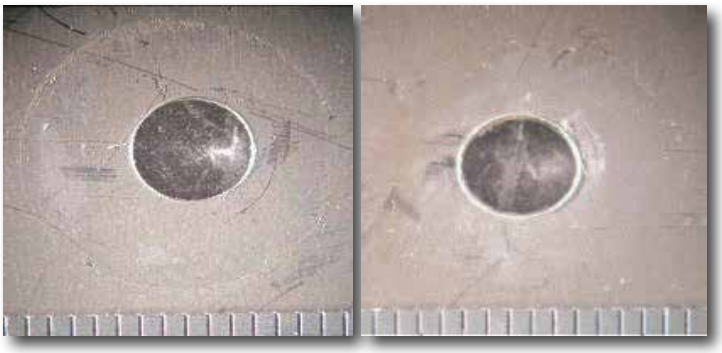
VpCI®-368 is a time-proven coating that provides excellent protection to metal substrates exposed to harsh outdoor conditions.

EcoLine® 3690 is a bio-based/bio-degradable ready-to-use temporary coating designed for severe marine and high humidity conditions. The product is non-hazardous, non-toxic, perfect for sensitive areas where environmentally-friendly alternatives are highly sought after. It provides excellent outdoor protection on any metal surface. The film is self-healing and moisture- displacing, providing superior protection against aggressive environments.

EcoLine® HD Grease – bio-based/bio-degradable Heavy Duty Grease, formulated with American-grown natural seed oil that surpasses the lubricity of most conventional petroleum based greases. Utilizing the latest biotechnology, It is an environmentally friendly replacement for harmful greases.



Examples of pitting results for long-term atmospheric exposure of CPC- coated UNS A92219: control (left) and Cortec's VpCI®-368 (right).



Examples of crevice corrosion for atmospheric exposure of CPC-coated stainless steel (left -control and right - Cortec's EcoLine 3690)

Not Science Fiction Any More—It's Science

In 2011, after 135 missions and 30 years of service, NASA retired its space shuttle fleet. Endeavour, launched on 25 missions and flown 122.8 million miles (197 million kilometers), is the last space shuttle to go to its final landing. It will now be permanently displayed in its new museum home at the California Science Center in Los Angeles. Cortec® has been right there helping the U.S. Space Shuttle Program protect Endeavour and the other shuttles from corrosion with VpCI®–101, 105, and 111 Emitters; VpCI®-368; VpCI®-238; and VpCI®-126 Film. For deep storage applications MilCorr® and CorrLam® have also been used.
The agency retired the fleet last summer to spend more time and money developing new vehicles and rockets for deep-space exploration to reach destinations like Mars. The Shuttle Program may now be history but the future of the U.S. Space Program is right before us and Cortec® is blasting off with it!

Like "Blue Ocean Strategy" (W. Chan Kim & Renée Mauborgne), as space gets crowded and prospects for growth are reduced, NASA is ready to leave the Red Ocean (earth orbit) behind and start into the Blue Universe (Deep Space) – the unknown, defined by untapped space, knowledge, and the opportunity for growth. As NASA creates the future of space exploration, Cortec® will be present with our tried and true corrosion control products and will continue developing new, cutting edge, and innovative products to offer as technology advances farther into the cosmos.

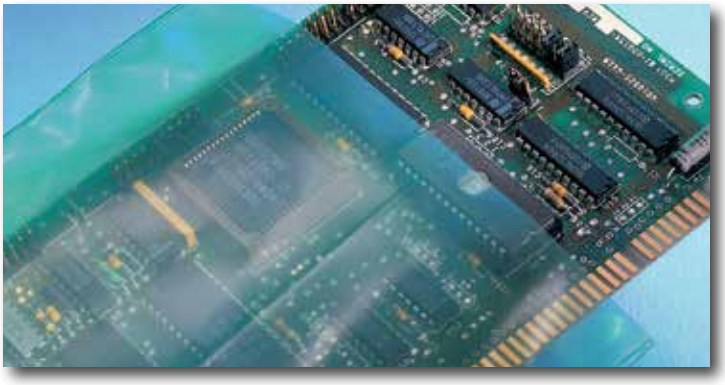
Airbus Parts Protection

Airbus China, a division of the multinational Airbus Group SE that manufactures civil aircraft, was looking for a more cost effective, less time consuming method of corrosion prevention for parts and components shipped to Europe.

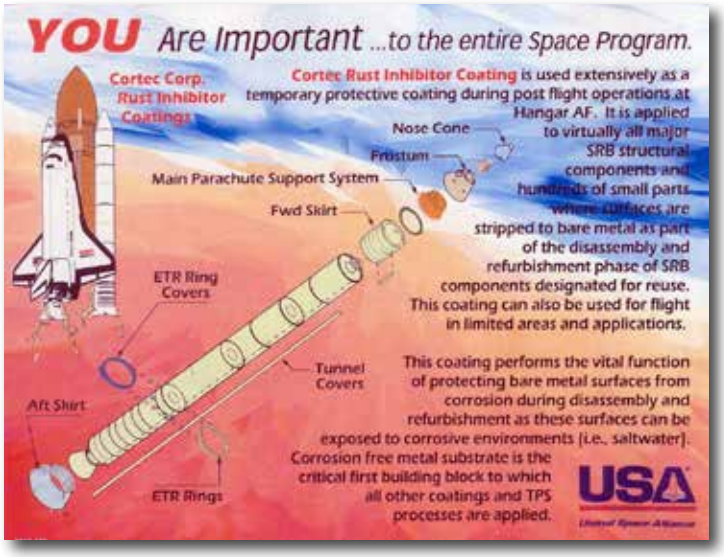
Cortec® products were used to solve their corrosion prevention problem. VpCI®-132 Pads were placed on the aircraft parts and componets to provide extra corrosion protection, and then the parts were wrapped in VpCI®-125 Antistatic Film.

Cortec® VpCI®-125 Antistatic Film and VpCI®-132 Pads solved Airbus' corrosion prevention problems. Airbus experienced substantial cost savings in their process by using two innovative Cortec® products.

AIRBUS
AN EADS COMPANY



Tool Preservation



NATO helicopters combat ready preserved in Hungary

NATO fighters combat ready preserved in Spain

Buyer's Guide

Product	Description	Application	Dosage
BioCorr® Rust Preventative	Ready-to-use water based, biodegradable, VOC-free, and 64% biobased rust preventative. An excellent environmentally sound alternative to petroleum products. USDA BioPreferred®* designation for Metalworking Fluids for Federal preferred purchasing. Relevant Test Methods: • ASTM D-1748 – Humidity • ASTM D-1735 – Water Fog • ASTM D-6866-11 – Determination of Biobased Content • NACE RP0487-2000 – Selection of Rust Preventives	Preservation of multi-metals in storage and during transportation. Good indoor protection. Leaves a very thin film easily removed with water.	Product comes ready-to-use. Also comes in a super-concentrate form, BioCorr® SC. A 5% dilution of BioCorr® SC in 95% water attains the same concentration as ready-to-use BioCorr®.
Bio-Pad®	Flexible corrosion inhibiting device constructed from biobased non-woven material. Up to two times as much corrosion inhibiting action as related foam products. No isocyanates, nitrites, or chromates. 66% biobased content. Relevant Test Methods: • NACE Standard TM0208-2008 – Vapor Inhibiting Ability • NACE RP0487-2000 – Selection of Rust Preventives • MIL-I-22110C – Vapor Inhibiting Ability • ASTM D6966-11 – BioBased Content	Corrosion inhibitor for packaged metal parts. No degreasing or coating removal required after use.	Bio-Pad® 2"x 6" for up to 1.5 ft^3 (0.042 m^3). Bio-Pad® 8"x 8" for up to 8 ft^3 (0.23 m^3). Bio-Pad® Roll for up to 15 ft^3 per material ft^2 (4.5 m^3/m^2).
CorShield® VpCI®-146 Paper	Premium corrosion inhibiting paper made from the highest quality neutral natural kraft paper. Fully recyclable/repulpable. Environmentally safe, non-toxic, biodegradable, and doesn't contain nitrites, phosphates, or silicates. Relevant Test Methods: • NACE TM0208-2008 – Vapor Inhibiting Ability • NACE RP0487-2000 – Selection of Rust Preventives • Commercial Equivalent – MIL-PRF-3420H	Used to protect products for storage and shipment in a wide variety of ways: packaging, interleaving, end closures, insert strips, liners, separators.	Metal items should be completely wrapped or shrouded to prevent the entry of moisture or air.
Corrosorber®	Absorbs hydrogen sulfide and other gases that cause corrosion. Non-toxic and has no effect on the environment. Will not interfere with VpCI® protection.	Useful in telecommunications equipment, water treatment plants, aerospace electrical controls, marine navigation and communication equipment, power boxes, and more.	Simply select a space within any enclosed device where corrosion protection would be useful, and attach with adhesive backing. Replace cup as soon as the container appears gray.
CorrVerter® Rust Primer	A water-based primer with a novel chemical chelating agent that modifies surface rust into a hydrophobic passive layer. Environmentally friendly, non-toxic, and non-flammable.	Recommended for application to rusty or poorly prepared steel surfaces where further corrosion protection is required and good preparation is difficult to achieve.	Coverage: 3-5 mils (75-125 um) WFT leaves a 1-2 mil (25-50 um) DFT.

*BioPreferred® is a registered trademark of the USDA

Product	Description	Application	Dosage
EcoAir® 422 Non-Toxic Rust Remover	USDA 92% Certified Biobased Product. Water-based, non-toxic rust remover for multi-metal protection. Removes rust and stains without polluting and is packaged in an air-powered spray can. Relevant Test Methods: • ASTM F-519 – Mechanical Hydrogen Embrittlement Evaluation of Plating/Coating Processes and Service Environments • ASTM D-6866-11 – Determination of Biobased Content • OECD Method 301D – Biodegradability	Multi-metal protection and rust removal from steel, iron, copper, brass, and chrome.	Apply to the metal surface as needed to remove rust.
EcoLine® 3690	Biodegradable, 76% biobased, ready-to-use temporary coating leaves oily film for excellent outdoor protection on metal surfaces in severe marine and high humidity conditions. Self-healing and canola-oil based. Commercial equivalent to MIL-PRF-16173E Grade 2. Relevant Test Methods: • ASTM D-6866-11 – Determination of Biobased Content • ASTM D-1735 – Water Fog • ASTM D-1748 – Humidity • ASTM B-117 – Salt Fog • NACE RP0487-2000 – Selection of Rust Preventives	Long-term (5+ years) equipment layup; pipes, couplings, pumps, cylinders, and cables; sheltered outdoor coating; gear protectant/lubricant; working/moving parts.	Normal DFT is 2 mils (50 microns). Used in brush/spray applications.
EcoLine® All-Purpose Lubricant	Environmentally friendly lubricant with friction modifier, extreme pressure additive, and VpCI® corrosion protection. Based on soybean derivitaves and methyl esters. Biodegradable and 93% biobased. Relevant Test Methods: • ASTM D-6866-11 – Determination of Biobased Content • ASTM D-1735 – Water Fog • ASTM D-1748 – Humidity Cabinet • ASTM D-4172 – Four Ball Wear Test • ASTM D-2670 – Falex Pin and Vee Block Wear Test • NACE RP0487-2000 – Selection of Rust Preventives	In-plant machining, bar and chain oil, flange lubricant, locks and hinges, nuts and bolts, office machinery, penetrating oil/lubricant. Excellent mold release.	Use as other lubricating oils.
ElectriCorr® VpCI®-238	Electronic cleaner specifically formulated for electrical/electronic equipment, and components. Thin film of Vapor phase Corrosion Inhibitors (VpCIs) does not alter electrical resistance or magnetic properties of metal substrates. Relevant Test Methods: • ASTM D-1748 Humidity • ASTM B-117 Salt Spray • NACE RP0487-2000 – Selection of Rust Preventives	Corrosion protection and cleaning agent for electrical contacts and components, printed circuit boards, generators, junction boxes, and electric motors.	Dip part to be cleaned in VpCI®-238 or spray with ElectriCorr® VpCI®-238. Remove excess and dry (approximately 1-2 hours at 70°F and 50% relative humidity). Amount needed will depend on enclosure characteristics.
M-531	An oil-based package of corrosion inhibitors for petroleum and synthetic lubricants. Commercial equivalent to MIL-PRF-46002 and MIL-PRF-85062	Can be used in a wide variety of industrial lubricant applications where excellent rust protection, filterability, and water resistance are required. Highly recommended for use in hydraulic fluids.	Add to hydraulic or gear oil at 2-5% of base oil by weight.
MCI® Coating for Rebar NT	Water based, environmentally friendly coating provides excellent outside storage protection and superior corrosion resistance for embedded rebars. Relevant Test Methods: • ASTM A944-99 Bond Strength of Steel Reinforcing Bars to Concrete • ASTM B-117 Salt Spray • ASTM D-1748 Humidity	Protection of rebar partially embedded in concrete, jobsite storage, overseas shipping, maintenance repairs.	Mix well. Use as is or dilute with water up to 50% to achieve at least 1.0-2.0 mils (25-50 µm) DFT. Undiluted WFT of 3-6 mils will achieve this DFT.
MCI®-2005*/ MCI®-2005 NS *Biobased certification only refers to MCI®-2005	Water based, organic corrosion inhibiting admixture for the protection of metallic reinforcement in concrete structures. NSF Standard 61 approved for use in potable water tanks (UL certified). Earns LEED credits to user. Safe, environmentally friendly, and 67% biobased content. Meets ASTM C1582 requirements. MCI®-2005 NS approved by North Carolina, South Carolina, Kentucky, Ohio, Nebraska, Iowa, and Colorado DOTs. Relevant Test Methods: • NSF Standard 61 (Potable water applications approval) by UL • ASTM D6866-11 – Determination of Biobased Content (MCI-2005) • ASTM C1582 – Specification for Admixtures to Inhibit Chloride-Induced Corrosion of Reinforcing Steel in Concrete • ASTM G109 – Test Method for Determining Effects of Chemical Admixtures on Corrosion of Embedded Steel Reinforcement in Concrete Exposed to Chloride Environments • ASTM C494 - Specification for Chemical Admixtures for Concrete • Electrochemical Impedance Spectroscopy (EIS)	Admixture recommended for all reinforced concrete including precast, prestressed, and post-tensioned structures in corrosive environments exposed to saline groundwater, airborne chlorides, and carbonation.	Add MCI®-2005 to concrete mix or repair mortars at 1 pt/yd^3 (0.6 L/m^3). Add MCI®-2005 NS to concrete mix or repair mortars at 1.5 pt/yd^3 (1.0 L/m^3). Dosage is fixed and independent of chloride levels.

Product	Description	Application	Dosage
MCI®-2018	A 100% silane concrete sealer containing MCIs. Complies with Alberta DOT Standards for Type 1b and 1c sealers. Relevant Test Methods: • ASTM E-303 - Measuring Surface Frictional Properties Using the British Pendulum Tester • ASTM C672 - Standard Test Method for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals • NCHRP 244 Series II Modified (Weight Gain During Saltwater Soak, Water Vapor Transmission, Chloride Ion Intrusion Characteristics) • NCHRP 244 Series IV (Accelerated Weathering Test) • Oklahoma DOT Test Procedure OHDL-34 and OHDL-35 (Depth of Sealer Penetration) • US Bureau of Reclamation M-82 (M0820000.714) – Standard Protocol to Evaluate the Performance of Corrosion Mitigation Technologies in Concrete Repairs	Protects reinforcing steel in parking garages, bridges, tunnels, marine structures, and any other reinforced concrete structures.	Approximate coverage rate: 125-175 ft^2/gal (3-4.3 m^2/L).
MCI®-2020 MCI®-2020 V/O	Clear MCI® surface treatment for existing concrete. Designed to penetrate and migrate throughout the concrete structure. Patented. ANSI/NSF Standard 61 Approval for structures containing potable water. Relevant Test Methods: • ASTM G-109 – Standard Test Method for Determining the Effects of Chemical Admixtures on the Corrosion of Embedded Steel Reinforcement in Concrete Exposed to Chloride Environments • NSF Standard 61 – Potable water application (excluding –IPA and Gel versions)	Provides MCI® corrosion protection for rebar in existing structures such as bridges, buildings, garages, decks, and lanais.	Coverage: One coat at 150 ft^2 / gal, or two coats at 15 ft^2 /half gal.
MilCorr® VpCI® Shrink Film	Heavy duty film with multi-metal VpCIs and high UV protection. Relevant Test Methods: • ASTM D-882 – Tensile Strength at Break/Peak • ASTM D-882A – % Elongation at Break • ASTM D1709, Method A – Dart Drop • ASTM D-1922A – Elmendorf Tear Strength • ASTM D-3420 – Puncture Resistance • ASTM D6988-07 – Film Thickness • ASTM D1748 – Humidity • ASTM D2732-30 – Shrink Test • ASTM F3429 – Water Vapor Transmission Rate • ASTM D3985 – Oxygen Transmission Rate • NACE TM0208-2008 – Vapor Inhibiting Ability • NACE RP0487-2000 – Selection of Rust Preventives • MIL-PRF-121 – Barrier Materials • MIL-PRF-22019E (Performance Requirements)	Turnkey preservation system for long term outdoor storage of equipment in aggressive environments.	In order to prevent the entry of moisture or air, metal items should be completely wrapped or shrouded in film and the film shrunk. Application guide available.
S-69	Additive package for water treatment formulations. Protects ferrous and non-ferrous metals from corrosive contaminants.	Replaces nitrites, molybdates, phosphonates, amines, and other types of restricted corrosion inhibitors in water treatment formulations.	Closed Loop Dosage: 2500 to 3000 ppm. Open Loop Dosage: 200-400 ppm for first 1-2 weeks. Dosage can be lowered later.
VpCI®-101 Device	Provides corrosion protection for metal components and parts enclosed in non-ventilated control boxes, cabinets, or tool boxes. Commercial equivalent to MIL-PRF-81705D. Meets Southern California Clean Air Act, and other national and local regulations. Relevant Test Methods: • NACE TM0208-2008 – Vapor Inhibiting Ability • NACE RP0487-2000 – Selection of Rust Preventives • MIL-I-22110C – Vapor Inhibiting Ability	Protects telecom, electrical, scientific, and medical equipment; electric wireways and motors, hand-held battery-operated devices, and other containers holding metals.	Stick one emitter in enclosed space of up to 1 ft^3. Use additional devices for larger spaces.
VpCI®-105 Emitter	Unique devices designed to provide corrosion protection for metal components in enclosed spaces. Accepted by FDA for corrosion protection of electrical and electronic equipment within food processing plants. Commercial equivalent to MIL-I-22110C. RoHS compliant. Relevant Test Methods: • NACE TM0208-2008 – Vapor Inhibiting Ability • NACE RP0487-2000 – Selection of Rust Preventives • MIL-I-22110C – Vapor Inhibiting Ability	Long-term protection of electrical, marine, communication, medical, and switching equipment in any enclosure.	Stick one emitter in enclosed space of up to 5 ft^3. Add additional emitters for larger spaces.
VpCI®-111 Emitter	A small patented plastic emitter with a breathable Tyvek®* membrane through which corrosion inhibitors are slowly released. Commercial equivalent to MIL-I-22110C. IBM approval # 44V5421. Relevant Test Methods: • NACE TM0208-2008 – Vapor Inhibiting Ability • NACE RP0487-2000 – Selection of Rust Preventives • MIL-I-22110C – Vapor Inhibiting Ability	Install in enclosed space for corrosion protection of electrical, telecom, navigation, communication, and switching equipment; aerospace electrical controls, electric motors, electrical wireways and terminal boxes, and scientific and measuring instruments.	Stick one emitter in enclosed space of up to 11 ft^3. Add additional emitters for larger spaces.

*Tyvek® is a registered trademark of DuPont™

Product	Description	Application	Dosage
VpCI®-125	Heat sealable, static dissipative corrosion-inhibiting bags and sheeting. Commercial equivalent to MIL-B-81705C Type II, and MIL-B-22019F. Relevant Test Methods: • ASTM B-257 – Surface Resistivity • ASTM D 882 – Tensile Strength/Elongation • ASTM D 1922 – Elmendorf Tear Strength • ASTM D 3420 – Puncture Resistance • ASTM F-3429 – Water Vapor Transmission Rate • ASTM D-3985 – Oxygen Transmission Rate • ASTM D6988-07 – Film Thickness • ASTM D1748 – Accelerated Corrosion • ASTM D1735 – Water Fog • MIL-PRF-81705D – Static Decay (VpCI-125 only) • MIL-PRF-22019E (Performance Requirements) • MIL-PRF-22020E • NACE TM0208-2008 – Vapor-Inhibiting Ability • NACE RP0487-2000 – Selection of Rust Preventives	For storage and/or packaging of sensitive electronic equipment. For wrapping or including with packaging material.	Please contact Cortec® for an application guide.
VpCI®-126/HPUV/Shrink	Transparent plastic films with VpCI® for multi-metal protection. Heat sealable. Also available in ziplock bags and shrink film varieties with ultraviolet protection. **Specified for use by Airbus manufacturer, approval number ECA3068.** Relevant Test Methods: • ASTM D-882 (Tensile Strength at Break/Peak) • ASTM D-882A (% Elongation at Break) • ASTM D-1922 (Tear Test) • ASTM D-3420 (Puncture Resistance) • ASTM D6988-07 – Film Thickness • ASTM D1748 – Humidity • ASTM D1735 – Water Fog • ASTM D2732-30 – Shrink Test (shrink films only) • NACE TM0208-2008 – Vapor-Inhibiting Ability • NACE RP0487-2000 – Selection of Rust Preventives • MIL-PRF-22019E (Performance Requirements) • MIL-PRF-22020E	Multiple shipping and packaging uses. Especially beneficial for transit of commercial aircraft stringers, nose cones, wing skin, and landing gear because it eliminates the need for coating application and removal.	Please contact Cortec® for an application guide.
VpCI®-130 Series Foam	Unique flexible packaging materials that combine VpCI® protection, desiccant action, and excellent antistatic capabilities. Commercial equivalent to MIL-PRF-81705D (static dissipative materials) and MIL-I-22110 B (VpCI®). Relevant Test Methods: • NACE TM0208-2008 – Vapor Inhibiting Ability • NACE RP0487-2000 – Selection of Rust Preventives • MIL-PRF-26514G, Type 3, Class II – Polyurethane Foam	Affords long-term multi-metal protection in large export packages, crates, and seagoing containers.	Foam is cut to predosed sizes capable of protecting 0.25, 1.5, and 8.0 ft^3. Large, uncut rolls also availiable. See PDS for more information.
VpCI®-2026 Top Coat	A 100% solids, two-component, novolac epoxy coating with excellent chemical resistance and good abrasion resistance. Relevant Test Methods: • ASTM B-117 Salt Spray • ASTM D-1748 Humidity • ASTM D-3359 Adhesion • ASTM D-522 Flexibility • ASTM D-532 Gloss • ASTM D-3960 VOC • ASTM D-3363 Pencil Hardness • ASTM D-3363 Pencil Hardness • NACE RP0487-2000 – Selection of Rust Preventives • NACE (Minimum Surface Preparation Guideline) • SSPC (Minimum Surface Preparation Guideline)	Designed for environments that require a high degree of chemical or temperature resistance.	Apply a 4-8 mil coating over a primed surface.
VpCI®-326	Corrosion inhibitor oil additive that performs effectively in the presence of corrosive species. Contains no hazardous chromates, nitrites, or phosphate inhibitors. Specified in Lycoming Service Letter No. L180B as a method of preserving aircraft engines that will remain inactive for 30 or more days. Commercial equivalent to MIL-PRF-46002C and MIL-I-85062. NATO 6850-66-132-6100.	Corrosion inhibitor for hydraulic oil and gearbox assemblies.	Lycoming recommends adding to original oil at a 1:10 ratio.
VpCI®-368	Time-proven coating provides excellent protection to metal substrates in harsh outdoor conditions. Leaves a firm, wax-like film on metal substrates removable by alkaline cleaners. Commercial equivalent to MIL-PRF-16173E (Grades 1 and 2). NATO 6850-66-132-5848 and 6850-55-132-6099. VpCI®-368 M is USFA qualified to MIL-PRF-16173 E (Grade 1).	Use as an internal aircraft coating or apply to pipe coating, steel plate, machined parts, and wire rope. Protects carbon steel, stainless steel, copper, aluminum, and cast iron.	At least 2-3 mils (50-70 µm) film thickness recommended for uncovered outdoor storage.

Product	Description	Application	Dosage
VpCI®-369	For use as an oil additive and/or temporary coating. The protective film is self-healing and moisture-displacing, providing superior protection against aggressive environments. VpCI®-368 M is USFA qualified to MIL PRF-16173E (Grade 2). Relevant Test Methods: • ASTM D-1735 – Water Fog Cabinet • ASTM D-1748 – Humidity Cabinet • ASTM B-117 – Salt Fog Cabinet • ASTM D3690 – VOC • ASTM D522 – Flexibility • MIL-PRF-16173E, Grade 2 • NACE (Minimum Surface Preparation Guideline) • NACE RP0487-2000 – Selection of Rust Preventives • SSPC (Minimum Surface Preparation Guideline)	Designed for long term (3-7 years) protection in sheltered conditions. Use for mothballing, layup, shipping, protective coating, and storage.	Normal DFT is 2 mils (50 µm).
VpCI®-373	Water-based wash primer with good adhesion on difficult surfaces. Commercially equivalent to MIL-P-15328D. NSN #8010-01-470-2739. Complete ecofriendly replacement for chromate conversion aircraft coatings. Relevant Test Methods: • ASTM B-117 Salt Spray • ASTM D-1748 Humidity • ASTM D-3359 Adhesion • ASTM D-522 Flexibility • ASTM D-532 Gloss • ASTM D-3960 VOC • ASTM D-3363 Pencil Hardness • ASTM D-3363 Pencil Hardness • NACE RP0487-2000 – Selection of Rust Preventives • NACE (Minimum Surface Preparation Guideline) • SSPC (Minimum Surface Preparation Guideline)	Corrosion inhibiting base coat or Interior coating for personal aircraft. Excellent primer for aluminum.	Normal WFT is 2.5 mils (62.5 µm) yielding 0.5 mil (12.5 µm) DFT.
VpCI®-375	A unique, water-based acrylic one coat system (primer and topcoat). Relevant Test Methods: • ASTM B-117 Salt Spray • ASTM D-1748 Humidity • ASTM D-3359 Adhesion • ASTM D-522 Flexibility • ASTM D-532 Gloss • ASTM D-3960 VOC • ASTM D-3363 Pencil Hardness • ASTM D-3363 Pencil Hardness • NACE RP0487-2000 – Selection of Rust Preventives • NACE (Minimum Surface Preparation Guideline) • SSPC (Minimum Surface Preparation Guideline)	Successfully provides protection in harsh, outdoor, unsheltered applications.	Normal WFT of 3.5-7.4 mils (87.5-187.5 µm) yields 1.5-3 mils (37.5-75 µm) DFT
VpCI®-377	Water-based concentrate replacement for oil-based corrosion preventives. Passes ASTM D-4627-86 at 2% by weight. Nitrite-, phosphate ester-, and hazardous amine-free.	Forms a clear, dry, hydrophobic film on metal surfaces for indoor protection of equipment and components.	Dilute 5-20% in water and dip or spray.
VpCI®-384	Two-part urethane top coat to be used over a moisture cure urethane primer such as VpCI®-396. Offers excellent adhesion to a moisture cure urethane even after it is fully cured. Relevant Test Methods: • ASTM B-117 Salt Spray • ASTM D-1748 Humidity • ASTM D-3359 Adhesion • ASTM D-522 Flexibility • ASTM D-532 Gloss • ASTM D-3960 VOC • ASTM D-3363 Pencil Hardness • ASTM D-3363 Pencil Hardness • NACE RP0487-2000 – Selection of Rust Preventives • NACE (Minimum Surface Preparation Guideline) • SSPC (Minimum Surface Preparation Guideline)	Protects steel, aluminum, cast iron, and galvanized steel on bridges, structures, tanks, and OEM applications.	Normal WFT of 3-5 mils (75-125 µm) yields 1-2 mils (25-50 µm) DFT.
VpCI®-386	A unique water-based acrylic primer/topcoat with a complex mixture of non-toxic organic inhibitors for high performance corrosion protection that can compete with most paints. Relevant Test Methods: • ASTM B-117 Salt Spray • ASTM D-1748 Humidity • ASTM D-3359 Adhesion • ASTM D-522 Flexibility • ASTM D-532 Gloss • ASTM D-3960 VOC • ASTM D-3363 Pencil Hardness • ASTM D-3363 Pencil Hardness • NACE RP0487-2000 – Selection of Rust Preventives • NACE (Minimum Surface Preparation Guideline) • SSPC (Minimum Surface Preparation Guideline)	Use as a topcoat/primer to protect carbon steel, cast iron, aluminum, stainless steel, galvanized steel (coated with VpCI®-373 green), and copper against corrosive electrolytes and aggressive environments.	Normal WFT of 3-5 mils (75-125 µm) yields 1-2 mils (25-50 µm) DFT.

Product	Description	Application	Dosage
VpCI®-391	A waterborne, temporary coating intended for medium to long-term indoor and outdoor protection. Builds a non-tacky transparent film for excellent salt, humidity, and UV resistance. Relevant Test Methods: • ASTM D-1748 Humidity • ASTM B-117 Salt Fog • ASTM D3690 – VOC • ASTM D522 – Flexibility • NACE RP0487-2000 – Selection of Rust Preventives • NACE (Minimum Surface Preparation Guideline) • SSPC (Minimum Surface Preparation Guideline)	Excellent corrosion protection of metal surfaces. Recommended when a non-tacky coating is required and optimal removability is beneficial.	Normal WFT of 2.5-7.5 mils (62.5-187.5 µm) yields 1-3 mils (25-75 µm) DFT.
VpCI®-395	A waterborne epoxy primer. UL Classified in accordance with ANSI/NSF Standard 61 for potable water (applies only to RAL 7046). Relevant Test Methods: • ASTM B-117 Salt Spray • ASTM D-1748 Humidity • ASTM D-3359 Adhesion • ASTM D-522 Flexibility • ASTM D-532 Gloss • ASTM D-3960 VOC • ASTM D-3363 Pencil Hardness • ASTM D-3363 Pencil Hardness • NACE RP0487-2000 – Selection of Rust Preventives • NACE (Minimum Surface Preparation Guideline) • SSPC (Minimum Surface Preparation Guideline)	Provides excellent adhesion, salt spray, immersion, and long term corrosion protection to steel.	Normal WFT of 3-6 mils (75-150 µm) yields 1.5-3 mils (25-50 µm) DFT.
VpCI®-396	A high solids aromatic moisture cure urethane. Direct to metal primer for multi-metal protection. Forms a very hard but flexible coating that cures in the presence of moisture in the air. Relevant Test Methods: • ASTM B-117 Salt Spray • ASTM D-1748 Humidity • ASTM D-3359 Adhesion • ASTM D-522 Flexibility • ASTM D-532 Gloss • ASTM D-3960 VOC • ASTM D-3363 Pencil Hardness • ASTM D-3363 Pencil Hardness • NACE RP0487-2000 – Selection of Rust Preventives • NACE (Minimum Surface Preparation Guideline) • SSPC (Minimum Surface Preparation Guideline)	Outstanding barrier protection for bridges, OEM, structural steel, storage tanks, ballast tanks, or ships.	Normal WTF of 3-5 mils (75-125 µm) yields 2-3 mils (50-75 µm) DFT. Cover with aliphatic urethane top coat for best results.
VpCI®-414	A cleaner and degreaser that also removes temporary coatings and non-silicone-based waxes from metal and painted surfaces. Relevant Test Methods: • ASTM G-31 – Immersion Corrosion Testing • ASTM D4627 – Cast Iron Chip • OECD Method 301D – Biodegradability	Can be used to clean carbon steel, stainless steel, cast iron, galvanized steel, brass (<30%Zn), and copper. Provides some corrosion protection of parts after cleaning.	Use as concentrate down to 5% concentration depending on level of cleaning.
VpCI®-415	A MIL-PRF-87937D Type IV USFA qualified heavy-duty, biodegradable cleaner/degreaser. Non-toxic according to EPA 600/4-90/027. Non-corrosive according to MIL-PRF-87937D. Exceptional pitting corrosion resistance. **Conforms to Boeing D6-17487 Revision P.** Relevant Test Methods: • MIL-PRF-87937, Type IV – Cleaning Compound, Aerospace Equipment • ASTM G-31 – Immersion Corrosion Testing • ASTM D4627 – Cast Iron Chip • 40 CFR 796.3100 – Aerobic Aquatic Biodegradation • **Boeing D6-17487, Revision P – Exterior and General Cleaners and Liquid Waxes, Polishes and Cleaning Compounds**	Used for washdown. Effective with pressure washers, foamers, dipping tanks, steam cleaners, or in mopping applications.	Use as concentrate down to 5% concentration depending on level of cleaning.
VpCI®-416	Heavy-duty foaming, water-based cleaner/degreaser formulation combined with unique corrosion protection action. Can be metered into power washers, steam cleaners, sprayers, and dipping tanks.	VpCI®-416 can be applied with any conventional equipment including sprayers, dipping tanks, steam cleaners, and power washers.	Use as concentrate down to 5% concentration depending on level of cleaning.

Product	Description	Application	Dosage
VpCI®-609 Powder	A water-soluble VpCI® powder for wet or dry corrosion protection of ferrous metals and aluminum. Commercial equivalent to MIL-I-22110C. Relevant Test Methods: • NACE Standard TM0208-2008 – Vapor Inhibiting Ability • NACE RP0487-2000 – Selection of Rust Preventives • OECD 306, BOD-28 (Marine Biodegradability Test) • EPA/600/4-90/027F (Sea Water Toxicity Test) • MIL-I-22110C – Vapor Inhibiting Ability	Protects voids, cavities, and tanks; tubular structures, pipes, and vessels; internal surfaces of compressors, turbines, engines, tanks, boilers, and heat exchangers. Can be used as an additive to standing water.	For powder application with average environmental conditions, use 0.3-0.5 oz (8.5-14 g) of VpCI®-609 per 1 ft^3 (28 L) of enclosed space (300-500 g/m^3). Liquid application dosage ranges from 0.5-10% (depending on application).
VpCI®-641	A water-based rust preventive additive. Non-toxic, environmentally safe, and does not contain nitrite or phosphate inhibitors. Based on all organic components. Relevant Test Methods: • ASTM G-31 – Immersion Corrosion Testing • ASTM D4627 – Cast Iron Chip • NOEC/LOEC – Toxicology Testing	Protection of ferrous and non-ferrous metals in industrial waters. Most typically used in hydrotesting water. Can be used in fresh water cooling systems in some cases.	Dilute to 500-1000 ppm. Solution may become cloudy if calcium is present.
VpCI®-649 Liquid	This product is designed to provide longterm protection in fresh water and glycol closed loop systems. Relevant Test Methods: • NOEC/LOEC – Toxicology Testing • ASTM D4627 Cast Iron Chip Test • ASTM G-31 – Immersion Corrosion Testing	Protects ferrous and non-ferrous metals from corrosive solutions in closed loop cooling systems, etc.	Please contact Cortec® for an application guide.
VpCI®-705	Multifunctional fuel additive serves as a corrosion inhibitor, fuel stabilizer, and water emulsifier for gasoline, diesel, and gasohol mixtures. Provides corrosion protection, lubricity, and elastomer protection. Relevant Test Methods: • ASTM D-97 – Pour point • ASTM D-130 – Copper Strip Corrosion • ASTM D-665 – Rust Preventing Characteristics • ASTM D-974 – Acid/Base Number by Titration • ASTM D-1401 – Water separability testing • ASTM D-1748 – Humidity testing • ASTM D-2196 – Brookfield Viscometer • General Motors Part Number 10661800	Provides excellent corrosion protection for all common engineering metals used in automotive fuel systems, including aluminum, aluminum die cast and zinc die cast alloys, tinplate, copper, ferrous alloys, cast iron, and solder.	Add VpCI®-705 to gasoline or diesel fuel, fuel blending and storage facilities, or directly to fuel tanks. Dosage: 0.1 - 0.15% per volume of tank to be protected.

VpCI®-415 Conforms to Boeing D6-17487, Revision P – Exterior and General Cleaners and Liquid Waxes, Polishes and Cleaning Compounds

Cortec® Global Services

Cortec® offers innovative turn-key solutions to mitigate corrosion on aircraft, aviation, and aerospace equipment. Available services include evaluation and treatment of trouble spots to keep parts and vehicles in good operating condition. When asset preservation is required, VpCI® cleaning and packaging products provide low-cost, easy-to-apply solutions for long term results and speedy re-commissioning. From our experience providing zero-defect, low-cost preservation across various industries, Cortec® is able to transfer knowledge of best-in-class solutions to the sector at hand.

TOTAL SOLUTION PROVIDER

Global Services is focused on providing our customers with optimum corrosion control solutions to meet their everyday needs. The scope for Cortec® Global Services includes a variety of corrosion control design, engineering, and field applications to serve Cortec® customers worldwide. Our group is committed to providing a cost-effective service designed to ensure our customers receive the correct products, technologies, and applications the first time, every time.

Training and Supervision	Advisory and Consultancy	Engineering and Design (CEFS)	Turnkey Application Services	Laboratory Testing and Product Design
Cortec® Certified Applicator Training	Subject Matter Expert Liaison with Client Engineering	Full Service System Design	Single Purchase Order Full Service Preservation Execution	ISO/IEC 17025 Certified Independent Laboratory
On-the-job-training (OJT) Modular Programs	Application Method and Specification	Corrosion Monitoring and Inspection	Value-Added, Turn-Key Solutions	Technical Specification
Supervision of Client Crews Including Short and Prolonged Deploy-ment	Onsite Liaison: Including Short and Prolonged Deployment	Onsite or Offsite	Assistance Through Entire Project Life-Cycle	Product Design

Certified Applicator Training

Applicator Training - Crew	Cortec® supplied training to provide short-duration training on key asset/task
Applicator Training Individual Certification	Cortec® supplies training services and individually certifies attendees on demonstrated competencies
Applicator Training – OJT Modular	Cortec® provides supervisory training services onsite using OJT modules pertinent to job scope

Advisory Services

Specification Review	Cortec® supplies SME (subject-matter-expert) remotely or onsite to review and assist in writing or reviewing preservation specifications
Onsite Liaison	Cortec® supplies SME onsite or in back-to-back rotator format or similar in office setting to advise and consult on preservation issues and plan preservation resources
Project Manager	Cortec® supplies PMs for duration of project to plan and execute preservation resources
Scoping Visit	Cortec® supplies Preservation Advisor for initial scoping visits

Engineering, Design and Monitoring Services

Corrosion Monitoring	Cortec® supplies SME onsite for comprehensive monitoring of all critical components of industrial objects, assets, facili-ties and plants for signs of corrosion based on project specifications
Corrosion Inspection	Cortec® supplies SME to onsite for inspection of asset integrity and suitability of service. Can also evaluate, design, and implement robust corrosion inspection program
Engineering Design Services	Cortec® supplies a corrosion engineer to build a product and/or process with a specified performance goal
Maintenance Services	Cortec® supplies SME for maintenance of preservation application and projects

Full Service Preservation Services

Supervisory	Cortec® supplies a Preservation Supervisor to oversee preservation application and/or training of Company crews
Full Crew	Cortec® supplies trained crews to complete preservation projects
Skilled Labor	Cortec® supplies labor to preservation projects to work with Company team

Laboratory and Corrosion Testing Services

Technical Liaison	Cortec® supplies primary technical expert in the use and application of Cortec® products and preservation methods
Technical Service	Cortec® supplies technical service contact to assist with product and application clarification

Cortec® Corporation

Quality Management System (ISO 9001 Certified)

World Class Product Offerings
An innovative producer of leading edge products.

World Class Customer Service
A positive, long-lasting impression through every link of our company.

World Class Environmental Commitment
Cortec® commits to continued development of processes and products that are useful, non-hazardous to the environment, and recyclable whenever possible.

An Ethical and Respectful Company Culture
Respect and treat our colleagues, customers, and vendors as we would our own family members.

Environmental Management System (ISO 14001 Certified)

Cortec's strong environmental concern is demonstrated in the design and manufacturing of products that protect materials of all kinds from environmental degradation. A strong commitment to produce recyclable products made from sustainable resources has been and will be our future policy. This brochure can be recycled.

Laboratory Accreditation (ISO/IEC 17025)

Cortec® Laboratories, Inc. is the only lab in our industry that has received ISO/IEC 17025 Certification, which ensures quality in recording and reporting data, as well as calibrating equipment within the laboratory.

ISO/IEC-17025
LABORATORY TESTING ACCREDITED

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.

BEFORE USING, USER SHALL DETERMINE THE SUITABILITY OF THE PRODUCT FOR ITS INTENDED USE, AND USER ASSUMES ALL RISK AND LIABILITY WHATSOEVER IN CONNECTION THERE WITH. No representation or recommendation not contained herein shall have any force or effect unless in a written document signed by an officer of Cortec® Corporation.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE. IN NO CASE SHALL CORTEC® CORPORATION BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

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