CORTEC CORPORATION

*Environmentally Safe VpCI®/MCI® Technologies*

# VpCI® ADDITIVES

*Integrating corrosion protection into your formulations*

ISO 9001
ISO 14001

# CORTEC® ADDITIVES:
## Built-In Corrosion Protection You Can Trust

Cortec's high technology additives integrate multiple advanced technologies—anchored by our proprietary VpCI® (Vapor phase Corrosion Inhibitor) chemistry—to eliminate corrosion caused by corrosive fluids, chlorides, or humid environments. These additives work within your system to deliver lasting metal protection while reducing costs associated with expensive alloys, corrosion damage, and maintenance labor.

Many Cortec® additives provide both contact and vapor phase protection. When introduced into a system, VpCI® molecules vaporize and diffuse throughout the void spaces, adsorbing onto metal surfaces and forming a thin, hydrophobic molecular layer. This invisible shield safeguards metals from oxygen, moisture, and chlorides—offering complete, 360° protection even in areas difficult to reach with conventional inhibitors.

Each class of additive in this brochure has been formulated for specific purposes and optimized for compatibility in diverse systems such as lubricants, coatings, water treatment, fuels, and metalworking fluids. To achieve the best performance, we recommend evaluation under your specific operating conditions before wide-scale implementation.

In addition to exceptional corrosion protection, Cortec's additives are engineered with sustainability in mind. Many feature water-based or biodegradable components and help reduce hazardous materials by simplifying corrosion protection processes. Unlike traditional inhibitor systems, Cortec® formulations are free of chromates, nitrites, heavy metals, and chlorinated hydrocarbons—delivering reliable performance with a reduced environmental footprint.

From industrial fluids to specialty coatings, Cortec® additives deliver an unmatched balance of performance, compatibility, and environmental responsibility—ensuring your systems run cleaner, safer, and longer.

## How Cortec® Additives Work

Cortec® additives provide dual-mode corrosion protection:

- Contact Phase Protection – Active molecules inhibit corrosion directly where the additive is dissolved in a system, forming a protective layer on metal surfaces.
- Vapor Phase Protection – VpCI® molecules vaporize, diffuse through voids, and adsorb onto exposed metal surfaces, forming a thin, invisible, hydrophobic layer that shields against moisture, oxygen, and chloride ions.
- 360° Coverage – This dual-action approach ensures even hard-to-reach areas receive effective protection.

## Key Benefits

Comprehensive Metal Protection

- Cost Reduction – Minimizes the need for high-alloy materials and costly repairs.
- Versatile Applications – Optimized for lubricants, coatings, water treatment, fuels, metalworking fluids, plastics, elastomers, adhesives, and deicing salts.
- Sustainable Design – Water-based or biodegradable formulations help reduce hazardous materials.
- Regulatory Compliance – Free of chromates, nitrites, heavy metals, and chlorinated hydrocarbons.

# VpCI® ADDITIVES
## FOR CLEANERS AND DEGREASERS

*Cleaning is an essential part of corrosion protection, but it can leave metals vulnerable to flash corrosion. Cortec® offers corrosion-inhibiting additives that can be incorporated directly into cleaning fluids, providing protection against flash corrosion while extending the service life of metals.*

- **M-95 / M-95 FO:** Water-soluble, multi-metal additive providing vapor phase and contact corrosion protection with minimal foam. Packaging: 5 gallon (19 L) pails, 55 gallon (208 L) drums, liquid totes, and bulk.
- **M-238:** Corrosion inhibitor for oil- and solvent-based systems offering vapor phase and contact protection. Packaging: 5 gallon (19 L) pails, 55 gallon (208 L) drums, liquid totes, and bulk.
- **M-370:** Multi-metal additive for alkaline cleaners and degreasers that prevents flash corrosion and forms a nearly invisible hydrophobic film. Packaging: 5 gallon (19 L) pails, 55 gallon (208 L) drums, liquid totes, and bulk.
- **M-435:** No-VOC additive for water-based fluids that prevents flash rust and is compatible with solvent-based systems. Packaging: 5 gallon (19 L) pails, 55 gallon (208 L) drums, liquid totes, and bulk.
- **S-8:** Wash water additive formulated with FDA-approved ingredients to protect food cans from corrosion during washing or sterilization. Packaging: 5 gallon (19 L) pails, 55 gallon (208 L) drums, liquid totes, and bulk.
- **S-111:** Multi-metal additive designed for alkaline cleaners to inhibit flash corrosion. Packaging: 5 pound (2.3 kg) pails, 50 pound (23 kg) and 100 pound (45 kg) fiber drums.

| | METALS PROTECTED | | | | | | | ATTRIBUTES | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Product | Carbon Steel | Stainless | Galvanized | Aluminum | Brass | Copper | Bronze | Physical State | Transport Mechanism | Solubility | Degree of Protection | Typical Applications | Typical Dosages |
| **M-95 / M-95 FO** | X | X | X | X | X | X | X | Liquid | Vapor Phase & Contact | Water & Glycols | Flash & Long Term | Cleaners | 0.25-2.5% by weight |
| **M-238** | X | X | X | X | X | X | X | Liquid | Vapor Phase & Contact | Oil / Solvent | Flash & Long Term | Cleaners | 1-4% by weight |
| **M-370** | X | X | X | X | X | X | X | Liquid | Contact | Water & Glycols | Flash & Long Term | Cleaners | 0.1-0.5% by volume |
| **M-435** | X | X | X | X | X | X | X | Liquid | Vapor Phase & Contact | Water & Oils, and few Solvents | Flash | Cleaners | 1-5% by weight |
| **S-8** | X | X | X | X | X | X | X | Liquid | Contact | Water | Flash | In Can Rinse | 150-250 ppm |
| **S-111** | X | X | X | X | X | X | X | Powder | Contact | Water | Flash | Cleaners | 0.3-1% by weight |

# VpCI® ADDITIVES
## FOR COATINGS AND PAINTS

*Cortec® provides a full range of additives for solvent-based and waterborne coatings, including acrylics, urethanes, epoxies, and alkyds. These additives prevent flash rust during application and provide long-term corrosion protection against humidity, salt fog, and other environmental factors.*

- **M-95 / M-95 FO:** Water-soluble additive for multi-metal systems providing vapor phase and contact corrosion protection with minimal foam. Packaging: 5 gallon (19 L) pails, 55 gallon (208 L) drums, liquid totes, and bulk.
- **M-109:** VOC-free, solvent-based additive offering organic vapor and contact corrosion protection for multi-metal systems and some waterborne coatings. Can be post-added to most coating systems. Packaging: 5 gallon (19 L) pails, 55 gallon (208 L) drums, liquid totes, and bulk.
- **M-118:** Waterborne corrosion inhibitor for coatings, adhesives, and related materials. Packaging: 5 gallon (19 L) pails, 55 gallon (208 L) drums, liquid totes, and bulk.
- **M-119 / M-119LV:** Water-based additive that enhances salt spray and humidity resistance in coatings. Works synergistically with M-380 and is available in LV (low viscosity) version. Packaging: 5 gallon (19 L) pails, 55 gallon (208 L) drums, liquid totes, and bulk.
- **M-240:** Multi-metal flash rust inhibitor for water-based paints, sealers, adhesives, and other coating fluids. Packaging: 5 gallon (19 L) pails, 55 gallon (208 L) drums, liquid totes, and bulk.
- **M-380:** Water-based, multi-metal corrosion inhibitor designed for carboxylated acrylic or styrene-acrylic latices. Works synergistically with M-119/LV. Packaging: 5 gallon (19 L) pails, 55 gallon (208 L) drums, liquid totes, and bulk.
- **M-435:** No-VOC flash rust inhibitor for water-based coatings, also compatible with solvent-based systems. Packaging: 5 gallon (19 L) pails, 55 gallon (208 L) drums, liquid totes, and bulk.
- **M-5365:** Corrosion-inhibiting, water-resistant additive for solvent-based, epoxy, and select waterborne systems. Packaging: 5 gallon (19 L) pails, 55 gallon (208 L) drums, liquid totes, and bulk.

| | METALS PROTECTED | | | | | | | ATTRIBUTES | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Product | Carbon Steel | Stainless | Galvanized | Aluminum | Brass | Copper | Bronze | Physical State | Transport Mechanism | Solubility | Degree of Protection | Typical Applications | Typical Dosages |
| M-95 / M-95 FO | X | X | X | X | X | X | X | Liquid | Vapor Phase & Contact | Water | Long Term | Coatings & Inks | 0.25-2.5% |
| M-109 | X | X | X | X | X | X | X | Liquid | Vapor Phase & Contact | Solvent & Limited Water | Long Term | Coatings | 1-3% |
| M-118 | X | | | X | | | | Liquid | Vapor Phase & Contact | Water | Long Term | Coatings | 1-4% |
| M-119 / M-119LV | X | | | X | | | | Water Emulsion | Vapor Phase & Contact | Water | Long Term | Coatings | 1-3% |
| M-240 | X | X | X | X | X | X | X | Liquid | Vapor Phase & Contact | Water | Flash | Coatings | 0.5-2% |
| M-380 | X | X | X | X | X | X | X | Liquid | Vapor Phase & Contact | Water | Long Term | Coatings | 2-5% |
| M-435 | X | X | X | X | X | X | X | Liquid | Vapor Phase & Contact | Water & Oils, and few Solvents | Flash | Coatings | 1-5% |
| M-5365 | X | X | X | X | | | | Liquid | Contact | Oil, Solvent | Long Term | Coatings | 0.5-4% |

# VpCI® ADDITIVES
## FOR DEICING SALTS AND FLUIDS

*Industrial systems often use corrosive fluids like seawater, brine, or deicing chemicals, which can attack metals. Cortec® offers powder and liquid VpCI® additives that protect metals in these solutions, are environmentally friendly, and free of chromates, nitrites, or phosphates. They form a molecular layer that shields metals from contact, vapor, and water/air corrosion.*

- **M-605:** Corrosion inhibitor additive for deicing salt and brine solutions. Protects ferrous and aluminum-based alloys. Liquid (L) and USDA certified biobased Powder (PS) versions available. Packaging: M-605 L available in 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk. M-605 and M-605 PS available in 5 pound (2.3 kg) pails, 50 pound (23 kg) and 100 pound (45 kg) fiber drums.

| | METALS PROTECTED | | | | | | | ATTRIBUTES | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Product | Carbon Steel | Stainless | Galvanized | Aluminum | Brass | Copper | Bronze | Physical State | Transport Mechanism | Solubility | Degree of Protection | Typical Applications | Typical Dosages |
| M-605 | X | X | | | | | | Powder | Contact | Water | Flash | Deicing Fluid / NaCl | 0.3-5% by weight |
| M-605L | X | X | | | | | | Liquid | Contact | Water | Flash | Deicing Fluid / $MgCl_2$ | 0.3-5% by weight |
| M-605PS | X | X | | X | | | | Powder | Contact | Water | Flash | Deicing Fluid / $CaCl_2$ | 0.3-5% by weight |

# LOW pH CORROSION INHIBITOR

- **S-11:** Corrosion inhibitor for aqueous systems with low pH. Packaging: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.

| | METALS PROTECTED | | | | | | | ATTRIBUTES | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Product | Carbon Steel | Stainless | Galvanized | Aluminum | Brass | Copper | Bronze | Physical State | Transport Mechanism | Solubility | Degree of Protection | Typical Applications | Typical Dosages |
| S-11 | X | X | X | X | X | X | X | Liquid | Contact | Water | Flash | Acid Additive | 0.1-4% by weight |

# VpCI® ADDITIVES
## FOR FUELS, CRUDE OIL, AND NATURAL GAS

*Fuel storage and transport systems are prone to corrosion and fuel separation during shipping and storage. Cortec® fuel additives help stabilize fuels while providing robust corrosion protection for tanks, pipelines, and other equipment, ensuring reliable performance and longevity.*

- **VpCI®-629:** A fast-acting long-term inhibitor that forms a persistent barrier against severe corrosive attacks encountered in refinery and petrochemical operations. Protects ferrous and non-ferrous metals in the presence of water, halogens, and corrosive gases. Packaging: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.
- **VpCI®-637:** A combination of vapor phase, neutralizing, and film-forming corrosion inhibitors that provide effective internal corrosion control in natural gas and crude oil gatherings and transmission lines. Packaging: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.
- **VpCI®-639:** A fast acting long-term contact corrosion inhibitor designed to provide corrosion protection against the severe conditions encountered in petroleum production and refining. Packaging: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.
- **VpCI®-705:** Corrosion inhibitor, fuel stabilizer, and water emulsifier for gasoline, diesel, and gasohol mixtures. Also available in biodiesel version. Packaging: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.
- **VpCI®-706:** Vapor phase corrosion inhibitor used to protect steel fuel tank internals during storage and shipment. Packaging: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.

| | METALS PROTECTED | | | | | | | ATTRIBUTES | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Product | Carbon Steel | Stainless | Galvanized | Aluminum | Brass | Copper | Bronze | Physical State | Transport Mechanism | Solubility | Degree of Protection | Typical Applications | Typical Dosages |
| VpCI®-629 | X | X | | X | | | | Liquid | Contact | Water / Solvent Dispersable | In Process | Process Injection | Contact Cortec® |
| VpCI®-637 | X | X | | X | | | | Liquid | Vapor Phase & Contact | Water / Solvent Dispersable | In Process | Process Injection | Contact Cortec® |
| VpCI®-639 | X | X | | X | | | | Liquid | Contact | Solvent / Oil | In Process | Process Injection/Pigging | Contact Cortec® |
| VpCI®-705 | X | X | X | X | X | X | X | Liquid | Vapor Phase & Contact | Solvent / Oil | Long term | Fuel Oil | 0.1-0.15% by volume |
| VpCI®-706 | X | X | X | | | | | Liquid | Vapor Phase & Contact | Solvent / Oil | Long term | Fuel Oil | 0.1-0.5% by volume |

# VpCI® ADDITIVES
## FOR LUBRICANTS AND GREASES

*Cortec® offers additives for both solvent- and oil-based lubricants and greases. While oil can displace moisture, these corrosion inhibitors provide enhanced protection for metal surfaces and equipment. Many formulations also deliver vapor phase protection for metals in void spaces above the lubricant.*

- **M-369:** Additive for greases, waxes, or heavy oils that provides a superior level of corrosion protection. Packaging: 5 gallon (19 liter) and 55 gallon (208 liter) drums.
- **M-408:** Provides corrosion protection to brake fluid in vehicles such as DOT 3 or 4. Especially effective in silicon based fluids like DOT 5. Packaging: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, 275 gallon (1041 liter) tote.
- **M-529:** Patented oil-based contact corrosion inhibitor package for lubricating oils. M-529 L contains EP lubricity package. Available in super-concentrate (M-529 SC) form. Packaging: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.
- **M-530:** Mineral oil based inhibitor for intermittent operating systems offering both contact and vapor phase corrosion protection. Small particle size passes through 1 micron filter. Packaging: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.
- **M-531:** PAO based oil additive that has a minimal effect on properties like water separability, thermal stability, and filters to 1 micron. Offers contact and vapor phase corrosion protection. Packaging: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.
- **M-531 T:** An ash free oil corrosion-inhibiting additive designed for turbine applications. Packaging: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.
- **M-533 FG:** Oil additive corrosion inhibitor which is NSF HX-1 certified for use in plants with incidental food contact. Packaging: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.
- **M-540:** A premium quality additive formulated with proprietary technology to provide superior corrosion protection in bio-based and ester-based greases. Packaging: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, and bulk.

| | METALS PROTECTED | | | | | | | ATTRIBUTES | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Product | Carbon Steel | Stainless | Galvanized | Aluminum | Brass | Copper | Bronze | Physical State | Transport Mechanism | Solubility | Degree of Protection | Typical Applications | Typical Dosages |
| M-369 | X | X | X | X | X | X | X | Liquid | Contact | Oil / Solvent | Flash & Long Term | Lubricants / Greases | 1-5% by weight |
| M-408 | X | X | X | X | X | X | X | Liquid | Vapor Phase & Contact | Oil / Solvent | Flash & Long Term | Lubricants | 1-1.5% by weight |
| M-529 | X | X | X | X | X | X | X | Liquid | Contact | Oil / Solvent | Flash & Long Term | Lubricants | 2-5% by weight |
| M-530 | X | X | X | X | X | X | X | Liquid | Vapor Phase & Contact | Oil / Solvent | Flash & Long Term | Lubricants | 2-5% by weight |
| M-531 | X | X | X | X | X | X | X | Liquid | Vapor Phase & Contact | Oil / Solvent | Flash & Long Term | Lubricants | 2-5% by weight |
| M-531T | X | X | X | X | | | | Liquid | Contact | Oil / Solvent | Flash & Long Term | Lubricants | 0.05-2% by weight |
| M-533FG | X | X | X | X | | | | Liquid | Contact | Oil / Solvent | Flash & Long Term | Lubricants | 0.1-10% by weight |
| M-540 | X | | | | | | | Paste | Vapor Phase & Contact | Oil / Solvent | Long Term | Lubricants / Greases | 2-10% by weight |

# VpCI® ADDITIVES
## FOR METALWORKING AND HYDRAULIC FLUIDS

*Cortec® provides additives for metalworking and hydraulic fluids to protect parts from flash corrosion during machining and cutting operations. Additional formulations preserve hydraulic systems and critical equipment during shipping or storage, with options that offer vapor phase protection for components in enclosed spaces.*

- **M-95 / M-95 FO:** Versatile water soluble additive for various multi-metal systems requiring vapor phase and contact protection. Causes little to no foam. Packaging: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.
- **M-251:** Adds multi-metal contact and vapor phase corrosion protection to synthetic cutting fluids and water-based hydraulic fluids. Packaging: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.
- **M-370:** Multi-metal corrosion preventive additive for water-based metalworking fluids. Prevents flash corrosion on metal surfaces and forms a hydrophobic film that is virtually undetectable when dry. Also available in A (aluminum), NS (non-surfactant), HS (high surfactant), and C (additional protection for cast parts and rough surfaces) versions. Packaging: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.
- **M-435:** A multi metal organic corrosion inhibitor additive for water and solvent-based paints, sealers, adhesives, fluids and more. It is silicone and surfactant-free and can be introduced to formulations at virtually any step of production. Packaging: 5 gallon (19 L) plastic containers, 55 gallon (208 L) metal drums, liquid totes, and bulk.
- **M-528:** Additive to hydraulic fluids for corrosion protection in subsea systems. Also for synthetic coolants and cutting fluids. M-528 L includes lubricant. Packaging: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.
- **M-531:** An oil-based package of corrosion inhibitors for petroleum and synthetic lubricants. M-531 provides outstanding vapor and contact corrosion protection with excellent demulsibility. M-531 is effective in a variety of conventional and synthetic base stocks. Packaging: M-531 is available in 5 gallon (19 liter) plastic pails and 55 gallon (208 liter) metal drums.

| | METALS PROTECTED | | | | | | | ATTRIBUTES | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Product | Carbon Steel | Stainless | Galvanized | Aluminum | Brass | Copper | Bronze | Physical State | Transport Mechanism | Solubility | Degree of Protection | Typical Applications | Typical Dosages |
| M-95 / M-95 FO | X | X | X | X | X | X | X | Liquid | Vapor Phase & Contact | Water & Glycols | Flash & Long Term | Metalworking | 0.25-2.5% by weight |
| M-251 | X | X | X | X | X | X | X | Liquid | Contact | Synthetic Fluids | Flash | Metalworking | 0.5-1% by volume |
| M-370 | X | X | X | X | X | X | X | Liquid | Contact | Water & Glycols | Flash & Long Term | Metalworking | 0.1-0.5% by volume |
| M-435 | X | X | X | X | X | X | X | Liquid | Vapor Phase & Contact | Water & Oils, and few Solvents | Flash | Coatings | 1-5% by weight |
| M-528 | X | X | X | X | X | X | X | Liquid | Vapor Phase & Contact | Water / PAG | Flash & Long Term | Hydraulic Fluids | 1-5% by weight |
| M-531 | X | X | X | X | X | X | X | Liquid | Vapor Phase & Contact | Oil / Solvent | Flash & Long Term | Lubricants | 2-5% by weight |

# VpCI® ADDITIVES
## FOR PLASTICS, ELASTOMERS, AND ADHESIVES

*VpCI® additives are widely used in plastics, elastomers, and adhesives to provide corrosion protection for metals in contact. They are especially effective in polyethylene and polypropylene packaging, delivering clean, dry vapor phase protection for stored or shipped goods. VpCI® can also be incorporated into rubbers, sealants, and other polymers to protect metals throughout manufacturing, storage, and transport.*

- **M-95:** Versatile water soluble additive for various multi-metal systems requiring vapor phase and contact protection. Causes little to no foam. Packaging: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.
- **M-240:** A multi-metal, flash rust, corrosion inhibitor additive for water-based paints, sealers, adhesives, fluids, and more. Packaging: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.
- **M-435:** Multi-metal, no-VOC, flash rust inhibitor for sealers and adhesives. Packaging: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.

| | METALS PROTECTED | | | | | | | ATTRIBUTES | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Product | Carbon Steel | Stainless | Galvanized | Aluminum | Brass | Copper | Bronze | Physical State | Transport Mechanism | Solubility | Degree of Protection | Typical Applications | Typical Dosages |
| **M-95 / M-95 FO** | X | X | X | X | X | X | X | Liquid | Vapor Phase & Contact | Water | Long Term | Adhesives | 0.25-2.5% by weight |
| **M-240** | X | X | X | X | X | X | X | Liquid | Vapor Phase & Contact | Water | Long Term | Adhesives | 0.5-2% by weight |
| **M-435** | X | X | X | X | X | X | X | Liquid | Vapor Phase & Contact | Water | Long Term | Adhesives | 0.2-2% by weight |

# PROVEN PERFORMANCE:
## Cortec® Additives in Action

Cortec® additives have consistently proven their effectiveness in protecting metals and concrete structures from corrosion across a wide range of industries and challenging environments. From industrial machinery and fuel systems to concrete infrastructure and military equipment, these advanced formulations deliver measurable results by combining contact and vapor phase protection with sustainable, environmentally responsible chemistry. By integrating Cortec® additives into systems, companies have reduced maintenance costs, extended asset lifespans, and minimized downtime, all while avoiding the use of hazardous substances like chromates, nitrites, and heavy metals. The following case histories highlight real-world examples where Cortec® additives have solved corrosion challenges, demonstrated reliable performance, and generated significant cost savings—showing that when it comes to corrosion protection, Cortec® technology delivers proven, tangible results.

CH #266

### PROTECTION OF WATER SEPARATORS

THE PROBLEM: A South Louisiana water separator manufacturer faced corrosion issues during international shipping, particularly in interior piping, flange faces, hard-to-reach crevices, and starter and junction boxes.

THE APPLICATION: Cortec® M-529 rust preventative was added to all lubricating and hydraulic oils before test-running the pumps. Fully oil-soluble and effective in both mineral and synthetic oils, it can remain in the system—no removal is needed before starting the water separators.

THE CONCLUSION: Cortec® M-529 and VpCI®-368 offered easy, effective corrosion protection without affecting flange tolerances or requiring removal before start-up.

CH #461

### CORROSION CONTROL FOR ICE ARENA BRINE SOLUTION

THE PROBLEM: A local ice arena uses a 30% Calcium Chloride brine solution in its cooling systems. Due to the high salt concentration, the carbon steel components of the system were experiencing high corrosion rates.

THE APPLICATION: M-605 PS was added to the brine solution at 0.5%, reducing corrosion rates to an acceptable level. The Ice Arena now continually uses M-605 PS for ongoing corrosion control in the cooling system.

THE CONCLUSION: Cortec® M-605 PS is an ideal corrosion inhibitor for calcium chloride brine solutions.

CH #446

### MINISTRY OF DEFENSE CVR PRESERVATION

THE PROBLEM: The customer required a trial to find a low cost solution for protecting CVRs while being transported, while at the same time allowing the equipment to be placed back into operation on short notice.

THE APPLICATION: Additives were applied as follows: M-529 to engines, gearboxes, and final drives (700 ml, 2–5%); M-640 L to coolant (675 ml, 2–2.5%); VpCI®-705 to fuel (500 ml, 0.1–0.15%); and M-408 to brake fluid (10 ml, 1–1.5%).

THE CONCLUSION: This trial showed an easy, cost effective solution that would both satisfy their corrosion protection needs and lower cost requirements.

CH #557

### MILITARY EQUIPMENT PRESERVATION

THE PROBLEM: The customer's humid, salty climate causes severe corrosion, forcing vehicle repainting and repairs within five years. To protect their $20 million fleet of outdoor-stored ADR vehicles, they sought a lasting preservation solution.

THE APPLICATION: VpCI®-705 was added to the vehicles/equipment fuel systems, which were started to allow circulation and then shutdown

THE CONCLUSION: Untreated vehicles show rust within months. Maintenance crews were impressed by how easy the new system was to apply and the significant time and cost savings it offers. Other bases also expressed interest in adopting the program.

CH #588

## FIVE-YEAR PRESERVATION OF LANDING CRAFT

THE PROBLEM: An LCVP MK5B required protection from corrosion for a period of up to five years of storage on land in an outdoor environment. Customer asked for a solution that would protect the equipment from corrosion, while keeping all parts of the craft accessible for maintenance.

THE APPLICATION: VpCI®-705 was added to the fuel, M-529 to the engine and gearbox oils, M-640 L to the coolant system, and VpCI®-322 to the hydraulic systems. The engines were then run up for approximately 20 minutes and removed for storage elsewhere.

THE CONCLUSION: Provided an excellent long-term preservation solution that would protect the landing craft from corrosion while keeping all parts of the craft accessible. The preservation plan not only covered external surfaces, but also took into account the importance of protecting internal electrical, engine, and hydraulic systems.

CH #632

## COLD STACK PRESERVATION OF JACK-UP RIG

THE PROBLEM: The client needed to mitigate corrosion of both external and internal metallic components and systems of a drilling rig in an aggressive marine environment throughout the duration of the cold stack.

THE APPLICATION: M-531 served as a corrosion inhibiting oil additive for synthetic and mineral lubricants, and VpCI®-705 was used to preserve fuel oil tanks.

THE CONCLUSION: The client had a much better experience with this preservation system than other options used in the past. When the rig came back online in 2019, the client was satisfied with the ease of reactivation and had no notable concerns about corrosion.

CH #662

## PRESERVING OFFSHORE RIG TO WITHSTAND HURRICANE HARVEY

THE PROBLEM: Offshore platforms are often temporarily mothballed due to oil and gas market volatility, requiring assets to be maintained for future use. One Gulf of Mexico drilling rig needed preservation in a corrosive marine environment while facing an approaching hurricane shortly after mothballing.

THE APPLICATION: Cortec® additives M-529, M-530, or M-531 were added to gearboxes in the winches, man riders, engines, and mud pumps based on compatibility tests.

THE CONCLUSION: When the rig was inspected in 2019, all MilCorr® VpCI® Shrink Film remained securely in place, and no equipment showed corrosion despite Hurricane Harvey's impact in 2017. The VpCI® protection demonstrated long-term durability while allowing quick, easy removal for equipment recommissioning.

CH #793

## PRESERVATION OF DIESEL SYSTEM

THE PROBLEM: A plant undergoing a two-year shutdown needed to protect diesel storage tanks and piping from corrosion.

THE APPLICATION: VpCI®-705 was added to the diesel system at the amount calculated for proper dosage.

THE CONCLUSION: This procedure provided a high-performance, cost-effective, easy-to-use method of preservation that did not require cleaning or removal of the Cortec® product prior to equipment installation and operation.

Cortec® Corporation is a global leader in innovative, environmentally responsible corrosion control technologies, specializing in VpCI® (Vapor phase Corrosion Inhibitors) and MCI® (Migrating Corrosion Inhibitors) systems. Since our founding in 1977, Cortec® has demonstrated a commitment to innovation, developing over 500 products and securing more than 60 patents in corrosion prevention.

With over 45 years of experience, we have helped industries worldwide implement effective, economical asset preservation strategies, protecting equipment, structures, and materials from corrosion throughout their lifecycle. Our VpCI® and MCI® preservation systems have been successfully applied across a diverse range of industries—from automotive manufacturing and aerospace to oil and gas, military, construction, and beyond—demonstrating the versatility and reliability of our technologies.

Cortec®'s expertise spans every stage of manufacturing, construction, and storage. By implementing a proactive, strategic preservation process, owners and operators can ensure that all equipment, machinery, and components remain ready-to-use whenever needed, reducing downtime, extending asset life, and lowering maintenance costs. Our integrated preservation approach not only protects assets in challenging environments but also contributes to operational efficiency and sustainability, making Cortec® a trusted partner for businesses committed to long-term performance.

See Corrosion Protection in Action – Subscribe to Cortec® on YouTube!

QUALITY EXCELLENCE®

**CORTEC CORPORATION**

*Environmentally Safe VpCI®/MCI® Technologies*

Distributed by:

**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.

ISO 9001
ISO 14001

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