

# CORTEC VpCI®



# SHRINK FILM



**CORTEC**  
CORPORATION

Environmentally Safe VpCI®/MC® Technologies



# Cortec VpCI® Shrink Film

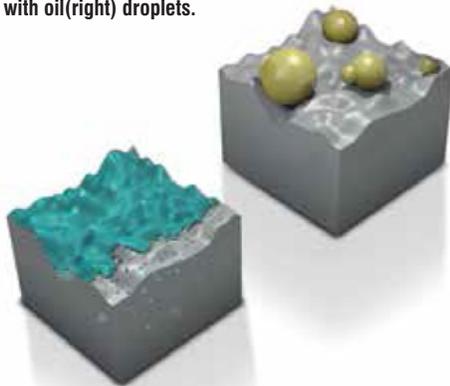
## VpCI® Corrosion protection during transport and storage

Cortec® Vapor phase Corrosion Inhibitors (VpCI®) provide multi-metal protection with corrosion inhibiting vapors that condense onto the surface of your products and form a thin, uniform, economical, and extremely effective corrosion inhibiting layer.

This barrier is self-replenishing, Cortec® VpCIs provide continuous protection, even if the package is repeatedly opened and closed.

Application is easy, little or no surface preparation is required. Machinery, products, and components are ready for immediate use, no cleaning or degreasing is required.

VpCI® Molecules(left) compared with oil(right) droplets.



## VpCI® Benefits

### Cost Effective

- Saves costly time and labor
  - no surface preparation required for application
  - no cleaning/degreasing required for product use
- Reduces raw material requirements
  - need for oil is eliminated
  - desiccants are eliminated
- Eliminates disposal costs
  - products are fully recyclable
  - no hazardous waste disposal costs

### Industry Proven Track Record

- Many years of application and testing ensure reliable results.

### Multimetal Protection

- Same product provides protection for ferrous and non-ferrous metals.

### Simple Application

- Recessed and non-contact areas are protected.

### Safe for Personnel and Environment

- Non-toxic and recyclable, VpCIs alleviate health and environmental concerns.

# Cortec VpCI® Shrink Film

## Cortec® Shrink Film Multi-Metal VpCI® Protection

Cortec® VpCI® Shrink Film is heavy duty film featuring Cortec® multimetal Vapor phase Corrosion Inhibitors (VpCI®). MilCorr® and VpCI®-126 Shrink Film provides a top-notch universal protection system with high ultraviolet (UV) light protection to maintain the integrity of the film itself as well as the parts packaged within.

Both shrink films replace conventional rust preventatives such as oils and desiccants. Parts protected with MilCorr® and VpCI®-126 Shrink Film are ready to use with no additional cleaning and/or degreasing necessary, saving you time and money. They are both ideally suited for transit, staging, and lay-up of critical equipment; including equipment with large void spaces, multiple metals, and complex geometries.

Metal parts packaged in MilCorr® and VpCI®-126 Shrink Film receive continuous protection against salt air and humid environments, moisture, aggressive industrial atmospheres, and dissimilar metal corrosion. The VpCIs vaporize and condense on all metal surfaces within the enclosed space, and diffuse to every area of your part; protecting its exterior as well as void spaces and recessed areas. You get complete product storage protection as well as during domestic and overseas shipments, virtually eliminating any rust claims.



**VpCI®-126 Blue VpCI® Shrink Film,  
Patented**



**MilCorr® VpCI® Shrink Film,  
Patented**

## Products

PRODUCT	DESCRIPTION	PROTECTION	PACKAGING
<b>VpCI-126® Blue</b>	Transparent plastic films with VpCI® for multimetal protection. It is heat sealable and available in Zip-Lock® bags, and shrink film varieties. VpCI®-126 MIL conforms to MIL PRF-22019D, MIL B-22020D, and QPL 4350-0B120(3). Recyclable.	Varies	Standard and custom sizes
<b>MilCorr® Shrink Film</b>	Composite film, containing the ultimate additives package; Cortec® multimetal VpCIs, UV inhibitors to provide a top-notch universal protection system.	Outdoor and indoor	Standard and custom sizes

**\*Cortec VpCI® shrink films conform to military specification MIL-B-22019D, NACE Standards RP0487-2000 and TMO-2008.**

# Cortec VpCI® Shrink Film

## Case History:

### MilCorr®: Tough Enough for Three Hurricanes

#### PROBLEM

In April of 2007, the United States Air Force completed long-term testing of Cortec's MilCorr® VpCI® Shrink Film on several Halvorsen 25K Aircraft Cargo Loaders. This equipment must remain in the United States Air Force inventory for up to 30 years. It was found that, after periods of six months to three years, this equipment showed outstanding resistance to corrosion after being treated with a variety of Cortec® products at the start of the testing.

Florida was hit by 3 major hurricanes in 2004 at the locations the testing was taking place. On August 13, 2004, Hurricane Charley swept through southwestern Florida with winds of 150 mph (240 km/h), making it a strong Category 4 hurricane on the Saffir-Simpson Hurricane Scale. These winds damaged or destroyed thousands of homes, uprooted trees, and left more than two million Florida residents without power. Less than a month later, Frances a Category 2 hurricane struck the southern end of Florida with winds of 105 mph (170 km/h). Frances then moved through the central portion of the state, damaging homes and businesses. Twenty two days later, Hurricane Jeanne - a Category 3 storm, seized the skies over Florida; producing winds of 120 mph (195 km/h).

#### CONCLUSION

Despite the storms and the massive amounts of saltwater and debris hurled through the air, Cortec's MilCorr® protected the Halvorsen Loaders. With a few minor cuts and abrasions, the MilCorr® withstood against the most powerful element of all - Mother Nature. Through all of the testing periods the loaders met all test parameters and performed just as well as before.



# Cortec VpCI® Shrink Film

## Case History:

### Thames Barrier Crane Preservation

#### PROBLEM

Pelligrini UK Ltd was contracted by the UK Environment Agency to build seven new cranes to replace the existing cranes on the Thames Barrier. One crane was delivered in May/June 2011, with the remaining six delivered in early 2012. These cranes were left at the Thames Barrier until 2013. The UK Environment Agency wanted the cranes protected from corrosion while being stored outside at the Thames Barrier prior to their installation in 2013.

#### APPLICATION

VpCI®-132 foam pads were placed throughout the cranes. The cranes were then wrapped with VpCI®-126 HP UV Shrink Film and the film was shrunk to the crane using a butane powered heat shrink gun.



#### CONCLUSION

Cortec's solution has resulted in the low cost storage of these high value assets for a period of up to two years.

## Case History:

### CVR(T) Scimitar Preservation

#### PROBLEM

The owner wanted to be able to store the CVR(T) Scimitar outside, while at the same time protecting it from corrosion.

#### APPLICATION

The coolant system was treated with M640L, the oil system was treated with VpCI®-322, and the fuel system with VpCI®-705. The engine was then run for 15 minutes; this ensured all the internals of the engine were protected from corrosion during the storage period. VpCI®-132 Foam Pads were then placed at various areas on the outside of the vehicle and VpCI®-101 Emitters placed in the electronic boxes. The equipment was then wrapped using VpCI®-126 HP UV Shrink Film and shrunk to the vehicle using a butane powered heat shrink gun.



#### CONCLUSION

Cortec's solution has resulted in the low cost storage of this highly valued asset for a period of up to three years.

# Cortec VpCI® Shrink Film

## Case History:

### Gas Turbine Shell Preservation

#### PROBLEM

Centrica stored two large gas turbine shells inside the turbine hall at Kings Lynn Power Station. The space inside the turbine hall had to be cleared out; this meant the shells, each weighing four tons required corrosion protection from the outdoor elements for the next two years.

#### APPLICATION

The shells were lifted by crane and VpCI®-126 HP UV Shrink Film was put into place, the shells were then lowered back onto the pallets. VpCI®-132 Foam Pads were placed at the relevant places and the shells were then completely wrapped and a butane powered heat gun was used to shrink the film.

#### CONCLUSION

This treatment has resulted in the low cost, corrosion free storage of these high value assets.



## Case History:

### Equipment Protection with MilCorr®

#### PROBLEM

Special equipment was being transported to “Rosatom” by truck and railway and was subjected to aggressive atmosphere in transit. Both the internal and external areas of the customer’s equipment suffered from corrosion, so corrosion protection was very important to them.

#### APPLICATION

The internal areas of the equipment were treated with BioCorr® Rust Preventative, then wrapped with MilCorr® VpCI® Shrink Film.

#### CONCLUSION

Cortec® products proved to be excellent protection during the transportation of the customer’s equipment. After use, there was no sign of corrosion on the inner or outer surfaces of the equipment.



# Cortec VpCI® Shrink Film

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## Case History:

### U.S.A.F. Aerospace Ground Support & Equipment Preservation

#### PROBLEM

The Air Force is continuously looking for improved processes and procedures to save military funds, resources, and manpower. Corrosion is a natural occurring 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.

#### APPLICATION

Two air conditioner units were supplied by the Air National Guard unit at Travis Field in Savannah, Georgia. 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® shrink film and taken out of maintenance service. Air vents were installed on opposite sides of the air conditioner units, which allows the wrapped units to breathe; allowing moisture to escape from inside the wrapped units preventing water from collecting inside or condensing on the equipment. The duration of this project was one year.

#### CONCLUSION

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.



**CORTEC VpCI® SHRINK FILMS ECONOMICALLY REPLACE WOOD CRATES, METAL CONTAINERS, ALUMINUM FOILS, DESICCANTS, VACUUM PACKAGING AND MESSY RUST PREVENTIVE COATINGS.**



# Cortec VpCI® Shrink Film

Trusted Globally for Transit and Equipment Preservation  
 Cortec® VpCI® Preservation Shrink Films

Cortec® Shrink Product	VpCI®	Ultra Violet (UV)	Electrostatic Discharge (ESD)	Flame Retardant (FR)	Strength	Color / Clarity
MilCorr® VpCI® Shrink						Opaque Buff
VpCI®-126 HPUV Shrink						Blue Transparent
VpCI®-126 HP Shrink						Blue Transparent
VpCI®-126 ESD Shrink						Blue Transparent
VpCI®-126 Shrink						Blue Transparent

**MilCorr® VpCI Shrink Film:**  
 Maximum highest strength opaque buff-colored film for long-term storage. UV protection for 5+ years.

**VpCI®-126 HP UV Shrink Film**  
 Higher strength transparent blue-colored film for long-term storage. UV protection for 3+ years.

**VpCI®-126 HP Shrink Film**  
 Higher strength transparent blue-colored film for long-term storage. Non-UV.

**VpCI®-126 ESD Shrink Film**  
 Standard strength transparent blue-colored film with static protection. Long-term sheltered storage. Non-UV.

**VpCI®-126 Shrink Film**  
 Standard strength transparent blue-colored film. Long-term sheltered storage. Non-UV.

**Terminology**

- Non-UV:** Do not use these films when prolonged UV exposure is possible
- UV:** Additive that protect the film from ultraviolet damage from the sun and other UV light sources
- VpCI®:** Vapor phase corrosion inhibitors that emit from the film and attach to metal surfaces
- ESD:** Additive that dissipates static charges protection static-sensitive equipment
- HP:** High Performance offering better tear and puncture protection
- Transparent:** Most thicknesses of films will allow easy visual inspection of contents
- Opaque:** Most thickness will NOT allow visual inspection without a window, door or vent installed
- Long Term:** Films are suitable for transit plus up to 5+ years depending on method and environment.
- FR:** Additive to prevent flame damage to film must be requested.

Visit our websites for more information on Cortec® Corporation.  
[CortecVCI.com](http://CortecVCI.com) and [CortecMCI.com](http://CortecMCI.com)

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



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