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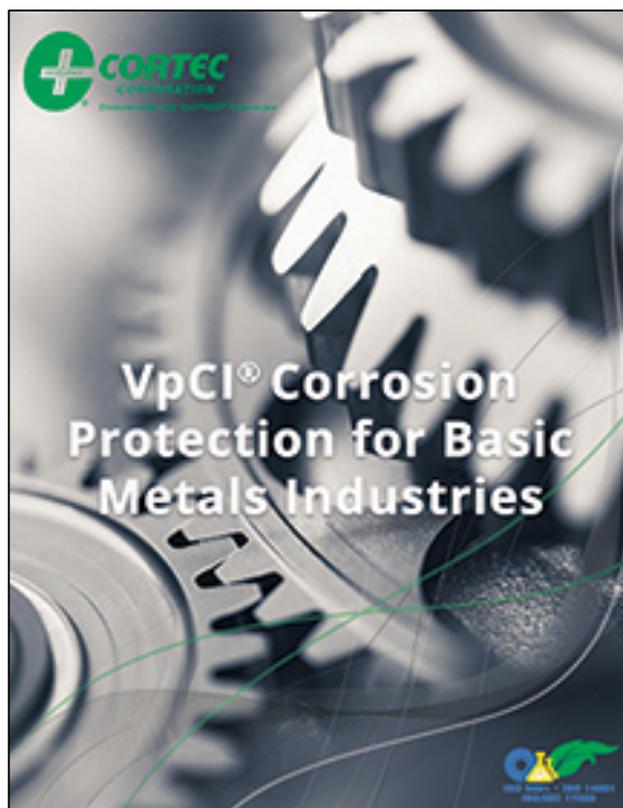
PRESS RELEASE



Cortec® Publishes Practical Guide to Countering Corrosion in Basic Metal Industries

Corrosion can happen at any time for industries that produce, process, or assemble metal parts. It results in stalled production, wasted materials, returned goods, and dissatisfied customers. Preventing corrosion from start to finish will enable metal industries to avoid these problems, keep the supply chain moving, and promote healthy customer relationships.

To help industries counter corrosion and keep metal in the best condition possible, Cortec® has created a new brochure entitled “VpCI® Corrosion Protection for Basic Metals Industries.” This new brochure provides corrosion control strategies for all phases of metal production, from refining to final assembly of finished



goods. It includes practical tips for many aspects of metal processing:

- Extending equipment service life
- Protecting raw materials
- Keeping partially finished goods corrosion free in-process
- Avoiding flash rust during cleaning
- Protecting steel coil internals
- Effectively preserving finished goods for long-term storage or shipment
- And more!



PROVIDING CORTEC® VpCI® CORROSION SOLUTIONS AROUND THE GLOBE

Cortec® Corporation provides VpCI® corrosion solutions to basic metals industries across the globe. Whether corrosion takes place on raw materials, in-process metals, or export goods, Cortec® is ready to help pinpoint the problem and provide a practical, integrated solution from its extensive portfolio of VpCI® products. Cortec® acts like an insurance provider by providing protection against future corrosion losses. By investing in corrosion solutions now, manufacturers save themselves from heavy loss later.

Stop Corrosion, Not Production!

Corrosion in the basic metals industries can happen at any time. It results in stalled production, wasted materials, returned goods, and dissatisfied customers. Preventing corrosion from start to finish will help industries avoid these problems and keep the supply chain moving.

Cut Costs, Save Time, Consider the Environment

Cortec's VpCI® total corrosion solutions provide practical alternatives to conventional corrosion protection in order to cut costs, save time, and reduce environmental impact. Cortec® replaces many petroleum-based rust preventatives with water-based or biobased options and offers recyclable packaging materials that can replace cumbersome rust preventatives altogether. Products are easy to apply and remove, increasing WIP (work-in-process) cycle efficiency, cutting labor costs, and reducing rust claims. VpCI® MRO materials reduce costs by extending asset service life.

Vapor phase Corrosion Inhibitors: An Innovative Approach to Corrosion Control

Many Cortec® products are enhanced with Vapor phase Corrosion Inhibitors. This technology releases corrosion inhibiting vapors that, when trapped in an enclosed space, condense on metal surfaces and form a protective molecular barrier against corrosion. This improves the ability of products to provide protection on intricate surfaces or in hard to reach spaces. It minimizes the need for rust preventative application and removal. No special cleaning is required to remove Vapor phase Corrosion Inhibitors prior to painting, plating, stamping, welding, forming, etc. Cortec® also offers a variety of robust rust preventatives and removable coatings when logistics are not optimal for protection in the vapor phase. Contact Cortec® for details.

The brochure explains that many Cortec® products are enhanced with Vapor phase Corrosion Inhibitors. This technology releases corrosion inhibiting vapors that, when trapped in an enclosed space, condense on metal surfaces and form a protective molecular barrier against corrosion. This improves the ability of products to provide protection on intricate surfaces or in hard to reach spaces. It minimizes the need for

liquid rust preventative application and removal. No special cleaning is required to remove Vapor phase Corrosion Inhibitors prior to painting, plating, stamping, welding, forming, etc. Cortec® also offers a variety of robust rust preventatives and removable coatings when logistics are not optimal for protection in the vapor phase.

INCORPORATING CORTEC® VpCI® CORROSION SOLUTIONS INTO FIVE STAGES OF THE BASIC METALS INDUSTRIES

Stage 1: Refining
Conversion of ore into molten metal (iron, copper, aluminum, etc.).
 Corrosion Control Strategies:
 • Apply VpCI® MRO products to equipment for extended service life.



Stage 2: Milling
Processing molten metal into blooms, slabs, ingots, billets, and metal powder/sinter.
 Corrosion Control Strategies:
 • Insert VpCI® pouches and emitters into barrels of metal powder/sinter for storage and shipping.
 • Wrap blooms, slabs, ingots, and billets in VpCI® paper or film for storage and shipping.
 • Use VpCI® rust preventatives as needed for storage and shipment to eliminate the need for rework.



Stage 3: Metallforming
Metal is hot rolled, forged, cast, or sintered into roughly shaped parts.
 Corrosion Control Strategies:
 • Use VpCI® cleaners or rinsing and blasting additives to avoid flash rust when cleaning equipment and parts.
 • Use VpCI® paper, film, and emitters for dry packaging protection during temporary storage and shipping.
 • Use VpCI® rust preventatives for long-term storage or shipping when extra protection is needed.
 • Remove pre-existing or flash rust with VpCI®-422 or VpCI®-423. Neutralize with VpCI®-418 cleaner.



Cortec's VpCI® total corrosion solutions provide practical alternatives to conventional corrosion protection in order to cut costs, save time, and reduce environmental impact. Cortec® replaces many petroleum-based rust preventatives with water-based or biobased options and offers recyclable packaging materials that can replace cumbersome rust preventatives altogether. Products are easy to apply and

remove, increasing WIP (work-in-process) cycle efficiency, cutting labor costs, and reducing rust claims. Additionally, VpCI® MRO materials reduce costs by extending asset service life.

A new buyer's guide in the brochure facilitates the product selection process by organizing VpCI® materials according to type:

- VpCI® Emitters
- VpCI® Rust Preventatives
- VpCI® Metalworking Fluids
- VpCI® Packaging
- VpCI® Cleaners
- VpCI® Rinsing and Blasting Additives
- VpCI® Rust Removers
- VpCI® MRO Products

After identifying the basic protection strategy desired (e.g., VpCI® packaging combined with VpCI® emitters for protection of metal components in shipping crates), industrial users can then browse each product category to select their preferred corrosion inhibiting material based on product characteristics and application need.

“VpCI® Corrosion Protection for Basic Metals Industries” is a good starting point for anyone looking to solve corrosion problems in the basic metals industries and ensure metal goods arrive at their destination corrosion-free to the customer's satisfaction. By presenting innovative corrosion solutions in a practical format, Cortec® has created a valuable guide to corrosion control in the multiple phases of the basic metals industries.

Stage 4: Metalworking

Metal undergoes machining, honing, stamping, drilling, drawing, cold rolling, or forming into more precise metal components.

Corrosion Control Strategies:

- Protect metalworking equipment and workpieces with VpCI® metalworking fluids.
- Clean/degrease metal components with VpCI® flash rust inhibiting cleaners.
- Remove incidental rust with VpCI®-422 or VpCI®-423. Neutralize with VpCI®-418 cleaner.
- Replace mineral oils with VpCI®-344 to reduce friction and corrosion during wet tempering.
- Apply VpCI®-325 or VpCI®-329 D to steel coils after pickling and before recoiling.
- Spray ID, OD, and laps of coils with VpCI®-337 or VpCI®-329 D before shipment to protect internal surfaces.
- Interleave and wrap freshly honed metals in VpCI® paper or film for flash corrosion protection during temporary storage. Add VpCI® emitters if extra protection is needed for large volumes.
- Replace hazardous oil-based rust preventatives with BioCorr® (biobased) or VpCI®-377 (water-based) dry film rust preventatives.
- Enhance protection for extreme export shipping conditions by overlapping the use of VpCI® papers, films, emitters, and rust preventatives.



Maximize protection by overlapping Cortec® VpCI® systems: At left, unprotected sintered parts were corroding after 15 hours of ASTM D-1735 testing in a 100% relative humidity chamber at 100.4 °F (38 °C). At right, parts protected in dual system of VpCI® 146 paper inside a VpCI® 126 bag remained corrosion free after 427 hours in the same test conditions.

Stage 5: Assembling

Metal components are assembled into finished products and equipment, such as engines, boilers, vehicles, and countless other industrial or consumer products.

Corrosion Control Strategies:

- Clean off greasy rust preventatives with VpCI®-418 instead of highly toxic cleaners such as trichloroethylene (some Cortec® dry film rust preventatives may not need to be removed at all).
- Use VpCI® paper, film, and emitters for dry packaging protection during temporary storage and shipping.
- Use VpCI® rust preventatives for long-term storage or shipping when extra protection is needed.
- If required, remove in-process rust with VpCI®-422/423 and neutralize with VpCI®-418 cleaner.




VpCI® FOR BASIC METALS INDUSTRIES BUYER'S GUIDE

VpCI® Emitters			
Product	Description	Sizes Available	Applications
Eto-Pap®	Flexible corrosion inhibiting device constructed from bio-based non-oxoim material. Provides multi-metal protection.	Contact Cortec® customer service for details.	Insert into packaging as an extra-strength source of VpCI® for protection of large volumes (protects up to 15 ft² per ft² [4.5 m²/m²] of material).
EcoPouch®	EcoPouch® contains VpCI®-809 powder for corrosion protection of ferrous metals. Do not use with yellow metals.	Pouches are 6 x 10 x 0.5 in (15.3 x 25.4 x 1.3 cm), 50 per carton.	Insert into packages or metal powder drums as an extra-strength source of VpCI® for protection of large volumes (protects up to 1 m² [25.3 ft²]).
VpCI®-130 Series Foam	Foam impregnated with Vapor phase Corrosion Inhibitors for dry protection of ferrous and non-ferrous metals. Approximately 10x more VpCI® per ft² (32.9 cm²) than VpCI® papers.	VpCI®-131: 2 x 10 in (5.08 x 25 cm) VpCI®-132: 10 x 10 in (25 x 25 cm) VpCI®-133: 1 x 1 in (2.5 x 2.5 cm) w/ adhesive back VpCI®-136: 1 x 1 in (2.5 x 2.5 cm) VpCI®-137: 130 ft x 4.5 ft (39.6 m x 1.35 m)	Flexible packaging material for insertion with metal parts, coils, sheeting, especially where additional protection for large volumes is required. Works well with VpCI®-126 film used as package liner.
VpCI®-308 Pouches	Contains VpCI®-308 powder for corrosion protection of ferrous and yellow metals.	Pouches are 6 x 10 x 0.5 in (15.3 x 25.4 x 1.3 cm), 50 per carton.	Insert into packaging or metal powder drums as an extra-strength source of VpCI® for protection of large volumes (protects up to 35.3 ft² [1 m²]).
VpCI®-309 Pouches	Contains VpCI®-309 powder for corrosion protection of ferrous metals. Not aggressive to copper.	Pouches are 6 x 10 x 0.5 in (15.3 x 25.4 x 1.3 cm), 50 per carton.	Insert into packaging or metal powder drums as an extra-strength source of VpCI® for protection of large volumes (protects up to 35.3 ft² [1 m²]).

To read the entire version of this brochure, please visit the following link:

https://www.cortecvci.com/Publications/Brochures/Basic_Metals_Brochure.pdf

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