





CORROSION INHIBITING VpCI® POWDERS

VpCI®-609/6095 Biodegradable Powders Corrosion Inhibiting Powders for Ferrous Metals **Patent Pending**



PRODUCT DESCRIPTION

VpCI-609 is a water-soluble Vapor phase Corrosion Inhibitor (VpCI) powder for wet or dry corrosion protection of ferrous metals and aluminum. VpCI-609 is also available as VpCI-609S (with silica).

FEATURES

- Conforms to MIL-I-22110C
- Provides liquid, vapor-phase, and interface protection (above the liquid level)
- Creates a monomolecular inhibiting layer on metal
- Provides up to 24 months of continuous protection
- Does not contain nitrites, phosphates, or heavy metals

ADVANTAGES

- Vapor-phase inhibiting action protects inaccessible and recessed surfaces
- Protected products can be shipped to customers without removing powder
- If the VpCI layer is disturbed by moisture or the opening of an enclosed space, the layer is replenished by continuous vapor redeposition
- Little or no surface preparation is required
- Prevents future corrosion of precoated and painted surfaces
- VpCI layer typically does not need to be removed prior to processing or use
- If required, powder is easily removed by air gun or water flush
- Does not increase alkalinity
- Provides economical protection for very large applications

TOXICOLOGICAL TESTING RESULTS

(Performed by Nortech A.S. (Norway))*

- Biodegradability: 100% biodegradable in marine environment, rapidly degradable substance (OECD** 306, BOD 28 Marine test)
- Toxicity: Very low (LD-50 = 5,000 mg oral-rat)
- Bioaccumulation potential: none (OECD Guideline 117)
- *Testing performed in accordance with Oslo-Paris com mission protocol
- **Organization for Economic Co-Operation and De velopment

TYPICAL USES

- Tubular structures, pipes, and vessels
- Internal surfaces of compressors, turbines, engines, tanks, boilers, heat exchangers
- Steam condensate lines, closed circuit heating, and cooling systems
- Equipment during and after hydrostatic testing
- Parts, components, and completed assemblies during shipping and storage
- Additive to shot-blasting media, wet blasting
- Additive to standing water
- Voids, cavities, and tanks

TYPICAL PROPERTIES

VpCI-609

Appearance White crystaline powder 6-7 (1% aqueous solution) рΗ

Solubility in water 15%

Density 38-39 lb/ft³ (0.61-0.63 kg/l)

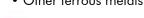
VpCI-609S

Appearance White to off white powder рΗ 5.9-6.9 (1% water)

NVC 96-100

METALS PROTECTED

- Carbon steel
- Mild steel
- Stainless steel
- Other ferrous metals
- Aluminum





METHOD OF APPLICATION

Apply VpCI-609 in dry form by dusting, fogging, or sprinkling. Apply VpCI-609 in aqueous form by spray, brush, flush, or immersion. After application simply cover and close or seal the interior cavity or void. Fogging is easily achieved by using a low pressure air hose and sandblast cup. Large conventional sandblasting systems can also be used.

Note: Cortec's VpCl Powder applicator, a specially designed fogging unit, is available for purchase from Cortec. It may also be rented by certified applicators.

DOSAGE

For powder application with average environmental conditions, use 0.3-0.5 ounce (8.5-14 grams) of VpCI-609 per 1 cubic foot (28 liters) of enclosed space (300-500 g/m³). The dosage can be increased for more severe conditions. For aqueous applications with average environmental conditions, use 0.25% VpCI-609 by weight of water. The dosage can be increased for more severe conditions. To improve the wetting of metal surfaces, Cortec® S-5 Wetting Agent can be used at the rate of 0.5% by weight of VpCI-609 powder.

METHOD OF REMOVAL

When required, VpCI-609/609S in powder form can be easily removed by using a low pressure air gun or by a water rinse. Typically, if applied in aqueous form, the product does not require removal. If necessary, a simple water rinse or flush will suffice.

FOR INDUSTRIAL USE ONLY
KEEP OUT OF REACH OF CHILDREN
KEEP CONTAINER TIGHTLY CLOSED
NOT FOR INTERNAL CONSUMPTION
CONSULT MATERIAL SAFETY DATA SHEET FOR MORE
INFORMATION

PACKAGING AND STORAGE

VpCI-609/609S powders are available in 5 pound (2.3 kg), 50 pound (23 kg), and 100 pound (45 kg) moisture barrier bags packed in fiber-lined drums. Also available in pouches such as EcoPouch. Store in a sealed container in a dry warehouse and avoid direct exposure to sunlight with temperatures not exceeding 150°F (65°C). Under these conditions shelf life is up to 24 months.

LIMITATIONS

- Do not use on copper, copper-based alloys, and other soft yellow metals. Compatability with non-metalics should be evaluated.
- Caking of powder may occur when it is exposed to moisture and then dried. The likelihood of this is increased when powder is exposed to high heat and multipule wet/dry cycles. When powder gets caked, baked, and hardened it requires removal by mechanical means, or by aggresive acid clean. To avoid caking of powder do not over apply or unevenly disperse the dry powder. In aqueous applications make sure powder has been totally dissolved before using.
- Powder is not soluble in hydrocarbon fluids. Rinse powder from vessels before adding hydrocarbon fluid.
- Powder should be removed from the area on each side of weld before welding, or other high temperature processing.

Note: Regular VpCI-609 has a tendency to clump. For dry fogging application use VpCI-609S (with silica) where acceptable.

LIMITED WARRANTY

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Cortec Corporation warrants Cortee® 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 products shall be paid by customer.

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