



CORROSION INHIBITING VpCI™ POWDERS

VpCI 609®/609®S 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 surface
- 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
- 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 (Algae test EC-50=240 mg/L)
- Bioaccumulation potential: none (OECD Guideline 117)

*Testing performed in accordance with Oslo-Paris commission protocol

**Organization for Economic Co-Operation and Development

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

| | |
|---------------------|---|
| Appearance | White crystalline powder |
| pH | 6-7 (1% aqueous solution) |
| Solubility in water | 15% |
| Density | 38-39 lb/ft ³ (0.61-0.63 kg/l) |

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 VpCI 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 0.5% 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 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.

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. 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.

PRECAUTIONS

- Do not use on copper, copper-based alloys, and other soft yellow metals. Compatibility with non-metallics 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 multiple wet/dry cycles. When powder gets caked, baked and hardened it requires removal by mechanical means or by aggressive 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 hydrocarbon fluids. Rinse powder from vessels before adding hydrocarbon fluids.
- Powder should be removed from area, 5 -10 inches 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.

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