ISO 14001 · ISO 9001 · ISO/IEC-17025

VpCI®-609/609S 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
- Accepted by Cefas as an offshore chemical. Registered under OCNS number 25717 allowing use at 5,000 ppm.
- 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
- 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 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

PHYSICAL PROPERTIES

VpCI-609	
Appearance	Off 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)
VpCI-609S	
Appearance	White to off white powder
pH	5.9-6.9 (1% water)
NVC	96-100

METALS PROTECTED

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

CORTEC CORPORATION

Environmentally Safe VpCI®/MCI® Technologies

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.)

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/m^3). 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.

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.

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

LIMITATIONS

- Do not use on copper, copper-based alloys, and other soft yellow metals. Compatibility 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 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 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

All statements, technical information and recommendations contained herein are based on tests Cortec Corporation believes to be reliable, but the accuracy or completeness thereof is not guaranteed.

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