

CorroLogic® Nano VpCI® Powder, Patent Pending Superfine Corrosion Inhibiting VpCI® Powder



PRODUCT DESCRIPTION

CorroLogic® Nano VpCI® Powder is a Vapor phase Corrosion Inhibitor powder of superfine particles, a few microns in size, designed particularly for soil-side corrosion protection of aboveground storage tanks (ASTs). When applied in enclosed void spaces, such as those below ASTs, CorroLogic® Nano VpCI® Powder diffuses and forms a self-healing protective layer on the metal surfaces. Due to its superfine particle size, CorroLogic® Nano VpCI® Powder works faster, travels farther, and has better coverage than standard VpCI®. In addition to protecting against soil-side corrosion in ASTs, it is also effective for applications in other hard-to-reach recessed areas, interior cavities, and voids.

Superfine particles have many unique properties. They disperse faster because diffusion coefficient is inversely proportional to particle size (Stokes Einstein Equation), and they travel longer distances due to greater buoyancy and smaller gravity. Laser Doppler Anemometry (LDA) showed that in turbulent flow, particle velocity of CorroLogic® Nano VpCI® Powder was twice that of regular sized VpCI®.

CorroLogic® Nano VpCI® Powder also has much larger specific surface area compared to larger particles of the same mass, enabling greater coverage as well as faster sublimation (transition from powder to vapor). These special physicochemical features empower CorroLogic® Nano VpCI® Powder with faster protection kinetics and enable a much faster buildup of a protective VpCI® environment in hard-to-reach recessed voids.

FEATURES

- VpCI® powder of superfine crystal particles
- Greater specific surface area for faster sublimation and quicker protection
- Improved fogging distances
- Adsorbed VpCI® material forms protective barrier layer
- Vapor phase inhibiting action protects inaccessible and recessed surfaces
- If the VpCI® layer is disturbed by moisture or opening of the enclosure, the barrier layer is replenished (self-healing) by continuous vapor deposition of the remaining VpCI® powder

BENEFITS

- Provides up to 24 months of continuous protection
- Little or no surface preparation required
- Meets testing requirements of NACE TM0208-2013 and MIL-I-22110C
- Does not contain silicates, phosphates, nitrites, or heavy metals
- Biodegradable (100% biodegradable in marine environment, rapidly degradable according to testing of OECD 306, BOD 28 Marine test*)
- Very low toxicity (LD-50 = 5,000 mg oral-rat*)
- Bioaccumulation potential: none (OECD** Guideline 117*)
 - *Testing performed by Nortech A.S. Norway in accordance with Oslo-Paris commission protocol
 - **Organization for Economic Co-Operation and Development

APPLICATION

Typical applications:

- Soil-side protection of Aboveground Storage Tanks (ASTs)
- Tubular structures, pipes, vessels with complex geometry, and hard-to-reach areas
- Equipment protection after hydrostatic testing
- Parts, components, and completed assemblies during shipping and storage

Method of application:

Apply powder by fogging, dusting, or sprinkling at a dosage of 0.3-0.5 oz./ft³ (300-500 g/m³). After application simply cover, close, or seal the enclosure.

Fogging is easily achieved with a low pressure air hose and sandblast cup or by inverting a wet/dry vacuum. Conventional sandblasting systems can also be used.

Method of removal:

When required, CorroLogic® Nano VpCl® Powder can be removed by using a low pressure air gun or by a water rinse.

Precautions:

- Do not use on copper, copper-based alloys, and other soft yellow metals. Compatibility with non-metallic materials 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. 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. Over extended periods of protection, this caking may require a more involved cleaning procedure. Contact Cortec® for further details.
- 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 performing other high temperature processing.
- Exercise general caution regarding handling of fine powder materials.

**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**

METALS PROTECTED

- Carbon Steel
- Stainless Steel
- Aluminum

TYPICAL PROPERTIES

Appearance White to off-white powder
pH 6-7 (1% aqueous)

STORAGE AND PACKAGING

CorroLogic® Nano VpCl® Powder is available in 40 lb. (18.1 kg) sealed, foil-lined drums. Store in a dry warehouse avoiding direct exposure to sunlight, with temperatures not exceeding 122°F (50°C). Under these conditions shelf life is up to 24 months.

STANDARD TEST METHODS

Test Method	Description	Results
NACE Standard TM0208-2013	Vapor Inhibiting Ability	Pass
OECD 306, BOD-28	Marine Biodegradability Test	100% biodegradable
ISO/DIS 10253	Marine Algal Growth Inhibition Test	EC-50=240 mg/L
OECD Guideline 117	Bioaccumulation Potential	None
MIL-I-22110C	Vapor Inhibiting Ability	Pass

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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
http://www.cortecvci.com

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