VpCI®-649 BD

PRODUCT DESCRIPTION

VpCI®-649 BD is a unique concentrate liquid formulation designed to provide long-term protection for ferrous and non-ferrous metals in fresh water, steam, and glycol closed-loop systems. VpCI®-649 BD is effective at corrosion protection during hydrostatic testing.

VpCI®-649 BD combines contact and volatile corrosion inhibitors, along with anti-scalant and an organic odor-control dispersing agent. The product does not contain nitrite, phosphate, chromate, or heavy metals.

FEATURES

- Effective for a broad range of applications to stop aggressive corrosion in systems containing coolants of fresh water or glycols
- Low concentration effectiveness provides economical treatment
- Vapor phase action provides protection to areas that contact inhibitor cannot reach
- Readily water-soluble liquid for easy application
- Protects steel, copper, galvanized steel, and aluminum
- Contains an acrylic polymer to prevent scale formation
- Contains molybdate tracer
- Contains organic odor-control dispersing agent

APPLICATIONS

Typical Applications:

- Closed loop cooling systems
- Hydrostatic testing of pressurized vessels and pipelines
- Cooling system lay-up
- Packer fluid additive
- Fire extinguishing system
- Prevents water-bottom corrosion in oil storage tanks

DOSAGE

- For operational systems such as closed loop, start at 2,500-3,000 ppm (0.25-0.3%). Additional bio dispersant may need to be added depending on the system.
- For seasonal lay-up application, (up to 6 months) use VpCI®-649 BD at a concentration of 0.5% of inhibitor by volume (wet lay-up method)
- Hydrotesting concentration varies from 0.5-2% by weight depending on application

Detection: Concentration of VpCI®-649 BD can be monitored via molybdate tracer, pH, or refractometer. Please contact Cortec® for more details.

TYPICAL PROPERTIES

VpCI®-649 BD

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Yellow to amber liquid</td>
</tr>
<tr>
<td>Density</td>
<td>9.3-9.8 lb/gal (1.12-1.18 kg/l)</td>
</tr>
<tr>
<td>Type</td>
<td>Water-based</td>
</tr>
<tr>
<td>Non-volatile Content</td>
<td>45-52%</td>
</tr>
<tr>
<td>pH</td>
<td>9.1-9.6 (Neat)</td>
</tr>
<tr>
<td>Freeze point</td>
<td>1-10°F (-17-12°C)</td>
</tr>
</tbody>
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Cortec Corporation

Environmentally Safe VpCI®/MCI® Technologies
STORAGE AND PACKAGING

VpCI®-649 BD is available in 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk. The products should be stored in tightly closed containers. Shelf life is 2 years.

STANDARD TEST METHODS

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM G 31</td>
<td>Immersion Corrosion Testing</td>
<td>No corrosion on carbon steel, copper, galvanized, aluminum (0.3% wt in tap water)</td>
</tr>
</tbody>
</table>

![Graph showing VpCI-649 BD Molybdate Tracer Concentration]

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

LIMITED WARRANTY

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