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Attention: Editor

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PRESS RELEASE



Cortec® VpCI®-649 BD Fights Corrosion, Scale, and Odor in Closed Loop Systems, Pipelines, Tanks, and More!

Corrosion is a common threat to closed loop cooling systems, requiring the addition of a corrosion inhibitor to preserve metal internals. Scale buildup can reduce system efficiency. Another problem is odor produced by bacteria that naturally grow inside the closed loop. A unique liquid concentrate formulation developed by Cortec® Corporation addresses all three problems in closed loop systems and many other water to metal applications.



Cortec® VpCI®-649 BD combines contact and vapor-phase corrosion inhibitors to protect metal surfaces in direct contact with the treated fluid, as well as those areas above the level of the fluid where the contact inhibitor cannot reach. As the inhibitor flows along in the liquid stream, it releases a corrosion inhibiting vapor that adsorbs and forms a protective layer on exposed metal surfaces above the level of the fluid.



Unlike a number of traditional closed loop inhibitors, VpCI®-649 BD does not rely on nitrite, phosphate, chromate, or heavy metals to inhibit corrosion. VpCI®-649 BD also contains an acrylic polymer to prevent scale formation and an organic odor-control agent to minimize odor from the growth of bacteria inside the closed loop.

VpCI®-649 BD is designed to provide long-term protection for ferrous and non-ferrous metals (steel, copper, galvanized steel, and aluminum) in fresh water, steam, and glycol closed-loop systems. However, it is not limited to these uses and is effective at stopping aggressive corrosion in a broad range of applications:

- Closed loop cooling systems
- Cooling system lay-up
- Hydrostatic testing of pressurized vessels and pipelines
- Packer fluid additive
- Fire extinguishing systems
- Oil storage tanks

Closed Loop Operation

For operational closed loop cooling systems, VpCI®-649 BD can be easily applied starting at doses of 2,500-3,000 ppm (0.25-0.3%). The liquid is readily water-soluble and its effectiveness at low concentrations provides economical treatment. The presence and concentration of VpCI®-649 BD in the treated water can be monitored via molybdate tracer, pH, or refractometer.



Closed Loop Lay-Up

When a cooling system is laid up, often for a temporary seasonal change, an important goal is to keep the equipment in good condition, corrosion-free, until the next season. Otherwise, corrosion products can lead to clogging of the system and lost efficiency. When wet lay-up is desired to allow for a quick restart of the system, VpCI®-649 BD can be added at a concentration of 0.5% by volume to provide up to six months of protection.



Hydrostatic Testing

Hydrostatic testing is another time when the flushing of liquid through pipelines or into pressurized vessels leaves behind dampened surfaces at risk for corrosion. Adding VpCI®-649 BD to the hydrostatic testing water will provide protection both during testing and also for a considerable time afterward. Again, a small concentration of 0.5-2% by weight is typically effective.

Packer Fluids and Fire Extinguishing Systems

Other applications that stand to benefit from VpCI®-649 BD are packer fluids and fire extinguishing systems. For the former, VpCI®-649 BD can be used as a packer fluid additive to protect wellbore casing and tubing walls from corrosion and to provide odor control in regard to microbiological activity. In the case of fire extinguishing systems, sprinkler lines and standpipe systems often undergo initial or periodic hydrostatic testing to check for piping



leaks or failures. Unfortunately, the damp environment created by hydrostatic testing could lead to corrosion and future leakage or clogging when the fire extinguishing system is actually needed. Including VpCI®-649 BD in hydrostatic test water can help systems avoid significant corrosion failures like these.

Oil Storage Tank Water Bottom Corrosion

Oil storage tanks commonly experience water-bottom corrosion when moisture condenses at the top of the tank and then settles to the bottom of the tank, fostering corrosion that may result in tank leakage. VpCI®-649 BD can be added to the tank at a low dose to prevent this widespread problem.



Conclusion

VpCI®-649 BD is an excellent choice for many corrosive situations where metals are heavily exposed to fluids and where odor-producing bacteria grow. VpCI®-649 BD provides triple action by reducing scale, creating a protective layer against corrosion on metal surfaces above and below the fluid, and performing odor-control. With its broad range of use and effectiveness at low concentrations, a little goes a long way for fighting corrosion and odor in closed loops, pipes, tanks, and more!

To find out more about Cortec's VpCI®-649 BD, please visit:

https://www.cortecvci.com/Publications/PDS/VpCI-649_BD.pdf

For more information about Cortec's water treatment products, visit:

<http://www.cortecwatertreatment.com/>

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VpCI®-649 BD

APPLICATIONS

Typical Applications:

- Closed loop cooling systems
- Hydraulic testing of pressurized vessels and pipelines
- Cooling system lay-up
- Boiler feed additive
- Free refrigerating systems
- Prevents water bottom corrosion in oil storage tanks

DOSAGE

- For operational systems such as closed loop, start at 2,000-3,000 ppm (0.25-0.3%). Additional low dispersion may need to be added depending on the system.
- For seasonal lay-up applications, (up to 6 months) use VpCI®-649 BD at a concentration of 0.3% of inhibitor by volume (not lay-up method).
- Hydrotesting concentration varies from 0.5-2% by weight depending on application.

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 soluble corrosion inhibition, along with anti-odor 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-controlled dispersing agent

TYPICAL PROPERTIES

VpCI®-649 BD

Appearance	Yellow to amber liquid
Density	7.2-7.8 kg/gal (1.12-1.18 kg/l)
Type	Water-based
Non-soluble Content	45-55%
pH	7-10 @ 25°C
Freeze point	-10°F (-12°C)

CORTEC CORPORATION
CORROSION CONTROL TECHNOLOGIES

Cortec® Corporation is the global leader in innovative, environmentally responsible VpCI® and MCI® corrosion control technologies for Packaging, Metalworking, Construction, Electronics, Water Treatment, Oil & Gas, and other industries. Our relentless dedication to sustainability, quality, service, and support is unmatched in the industry. Headquartered in St. Paul, Minnesota, Cortec® manufactures over 400 products distributed worldwide. ISO 9001, ISO 14001:2004, & ISO 17025 Certified. Cortec Website: <http://www.cortecvci.com> Phone: 1-800-426-7832 FAX: (651) 429-1122