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PRODUCT RELEASE



Cortec® Designs Low Conductivity / Low Sodium Corrosion Inhibitor for Generator Stator Cooling Systems and Nuclear Applications

Corrosion in generator stator cooling systems is a serious problem because it can obstruct the flow of cooling water and reduce the efficiency of the cooling system, leading to operational problems as time goes on. Because of low conductivity requirements, corrosion inhibitors must meet special parameters for use in generator stators. Corrosion inhibitors for hydrostatic testing and layup of cooling water systems in the nuclear industry are also limited, in this case by low sodium restrictions.



Cortec® Corporation, a strong proponent of organic chemistry corrosion inhibitors, has developed a simple water treatment for use in cooling systems where low conductivity or low sodium products are required. Based solely on organic components,

VpCI®-648 does not contain nitrites or any halogen counter ions. At recommended dosages, VpCI®-648 does not significantly contribute to the conductivity of water systems. VpCI®-648 protects both ferrous metals and copper. It contributes less than two parts of sodium per billion at a typical dose, making it an excellent choice for use in the nuclear industry.



In addition to being used to avoid clogging and slowing from corrosion in water-cooled generator stators during operation, VpCI®-648 can be used during layup or hydrostatic testing of low conductivity or low sodium systems, making it ideal for offline preservation of nuclear industry cooling water systems, as well as generator stators. This is an important step to protect valuable equipment from corrosion during an idle period or after it is hydro-tested for leaks.

VpCI®-648 is specifically intended for corrosion protection of water-cooled generator stators in the power industry, but it is also applicable to other cooling systems where a low conductivity or low sodium product is required. Applications include the following low conductivity cutting operations:

- EDM machining
- Plasma arc machining
- Laser cutting operations



Whether used in generator stators, nuclear cooling systems, or laser cutting operations, VpCI®-648 is an excellent specialty water treatment for low sodium or low conductivity applications where corrosion protection is required.

To learn more about VpCI®-648, please visit the following link:

<https://www.cortecvci.com/Publications/PDS/VpCI-648.pdf>



VpCI®-648

General Dosing Guidelines:

VpCI-648 is typically dosed at 10 - 50 ppm in low conductivity water systems, such as deionized water or demineralized water. In high conductivity water systems, such as municipal water, dosing rates may be higher (200 - 700 ppm).

For long term protection, additional corrosion protection products should be used. Please contact Cortec® Technical Service for recommendations on your application.

Considerations:

VpCI-648 does not contain a biocidal additive. If a biocide is desired, please consult a Cortec® Technical Service representative. Note that the conductivity may increase by adding a biocidal chemical.

PRODUCT DESCRIPTION

VpCI-648 is a water treatment additive designed for corrosion protection of ferrous and non-ferrous metals in aqueous environments. VpCI-648 does not contain nitrites or any halogens under any conditions. At recommended dosages, VpCI-648 does not significantly contribute to the conductivity of water systems. VpCI-648 is intended for water-cooled generator starters but is also applicable to other cooling water systems containing copper or steel where low conductivity is required.

FEATURES

- Low conductivity at recommended dosages
- Effective at low concentrations in deionized or reverse osmosis water
- Multi-metal protection
- Does not contain nitrites or halogens
- Low sodium level (less than 10 ppm per billion at typical dose)

APPLICATIONS

VpCI-648 can typically be used for:

- Low conductivity applications
- pH neutralizing
- Plastics are non-halogenating
- Plastics are non-halogenating
- Plastics are non-halogenating

METALS PROTECTED

- Ferrous metals
- Copper

TYPICAL PROPERTIES

Appearance: Yellowish white liquid
Flash Point: >200 °F (93 °C)
Density: 9.0 - 9.2 kg/l (1.08 - 1.14 kg/l)
pH: 9.0 - 10.5 (aqua)

CONDUCTIVITY AND PERFORMANCE

VpCI-648 Dose (ppm)	Conductivity (µS/cm)	Corrosion Rate (mils/year)	Corrosion Rate (mils/year)
10	1.0	0.002	0.002
50	5.0	0.002	0.002
100	10.0	0.002	0.002

*Corrosion testing performed at 145 °F (63 °C) for 100 hours

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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.

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