Corrosion protection for electrical control systems in Wastewater Treatment Plants with *SuperCORR A*

Wastewater treatment plants are subject to corrosion and rust from a variety of causes, one of which is Hydrogen Sulphide gas, (H_2S). Corrosion is an insidious and costly problem that causes just about every metal and metal alloy to fail over time. Metals in electrical and electronic control systems, components, connectors, and switches are of most concern.

Corrosion is found in almost all process industries including wastewater treatment plants, pulp and paper mills, fertilizer plants, and numerous other industries and is not going away. Establishing a 'Preventative Maintenance Program' that includes corrosion prevention makes it a problem that can be cost effectively dealt with.

SuperCORR A protects electrical control systems against corrosive environments

One proven and positive way to reduce, if not prevent, corrosion altogether from causing electrical, electronic systems and component failures is by using an ultra-thin film water displacing lubricant material with corrosion inhibiting compound, ***SuperCORR A*** has all these properties.

A proprietary formulation packaged in aerosol cans it uses a non-flammable fast drying carrier solvent. The aerosol is supplied with a flexible tube applicator which allows the protective coating to be applied accurately even in difficult to get to components.

Removal of surface contamination from the metallic contact surfaces on switches and circuit breakers is essential to ensure fault free operation. The aerosol uses the unique ***SuperCORR A*** formulation to lift and remove dust and soils from the metal contact surfaces. An inert compound that neither reduces nor increases the electrical conductivity. ***SuperCORR A*** also provides long term protection from corrosion and electrical arcing that can lead to shorts and subsequent circuit failures.

Testing *SuperCORR A* in corrosive environments

SuperCORR A (MIL-DTL-87177B (Revised MIL-L-87177A) Type 1 Grade B lubricant was subjected to extensive and vigorous Mixed Flowing Gas (MFG) testing at Battelle Laboratories under a U.S. Government contract.

Specifications ASTM B827 and ASTM B845 Class III MFG testing protocol were used. This included gases with high corrosion potentials including Hydrogen Sulphide (H_2S), Nitrous Oxide(NO_2), and Chlorine (Cl_2).

ASTM B845 refers to techniques for mixed flowing gas (MFG) tests containing gases that are applied to evaluate devices containing electrical contacts such as slip rings, separable connectors, electromechanical relays or switch contacts. The MFG tests accelerate corrosive degradation processes. Connectors and contacts within closed electronic cabinets may be affected by an environment of different severity than the outside of these cabinets. ASTM B827 outlines procedures for conducting environmental tests involving exposures to controlled quantities of corrosive gas mixtures. Equipment and methods for gas, temperature, and humidity control for tests to be conducted in a reproducible manner are described.

Reproducibility is measured using control coupons whose corrosion films are evaluated by mass gain, coulometry, or by various electron and X-ray beam analysis techniques. Reproducibility can also be measured by in situ corrosion rate monitors using electrical resistance or mass/frequency change methods. Full copies of these tests can be made available on request.

Industrial applications

SuperCORR A has a proven performance record in protecting electrical components, systems, connectors and electronics. The coating will also prevent the ingress of moisture and other contaminants onto the connector surfaces. These initiate corrosions and cause intermittent component failure or a premature degradation of component performance.

The Battelle Laboratories studies provided data and related processing information validating the benefits of using ***SuperCORR A***. to protect the electrical connectors of line replacement units (LRUs) used in military aircraft avionic applications.

The results of the laboratory and field-testing activities conducted in these studies confirm that ***SuperCORR A*** is an extremely effective coating to protect electronics, electrical components and systems including switches and connectors with no compromise of the integrity of the electrical component/system even in very corrosive environments.

As a result of testing on site at a number of private and public companies with the confirmatory work at Battelle Laboratories ***SuperCORR A*** is being used to reduce maintenance and repair costs in a range of different industrial applications - wastewater treatment plants, pulp and paper mills, automotive and heavy equipment industries and in the power production sector oil and gas and renewable energy and in both the aviation and maritime industries.

FURTHER INFORMATION

Please visit our website **https://www.envirotech-europe.com/supercorr-a** for information about other uses and applications for ***SuperCORR A***.

Visit **www.envirotech-europe.com/applications-and-case-studies** for information about uses and applications for all EnviroTech Europe products.

For more advice, please telephone us on +44 (0) 20 8281 6370 or use our website contact form.

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