

ZI-CHEM 8411 System Lay up Corrosion Protection

CORROSION IN INDUSTRY

Corrosion contributes to elevated maintenance and operational costs to industry. Effectively minimizing corrosion can realize high returns, by avoiding these costs.

One area often overlooked is the internal surfaces of ferrous and nonferrous metal vessels and pipes that are exposed to air and moisture. Some of the relevant situations include:

1. Wet or dry storage of boilers, heat exchangers, pressure vessels
2. Reticulation pipelines off-line
3. Compressed air & gas with or without entrained moisture
4. Ferrous/nonferrous storage tanks

TREATMENT CONDITION

Generally there are 3 “phases” that metal surfaces can be exposed to when they are at risk of corrosion

1. Gas phase (eg: air)
2. Liquid phase (eg: water)
3. Gas-liquid interface

to be effective, treatment must have the ability to be transported to all cavities and voids of the plant to be protected. It must be transported in the gas or liquid phase

HIGHLIGHT

ZI-CHEM 8411 is a specialist product with unique properties that facilitates highly effective corrosion protection. ZI-CHEM 8411 provides protection to a wide range of metallic surfaces.

ZI-CHEM 8411 facilitates this in all 3 phases. It vaporizes in air & dissolves in water. The ions migrate to both the anode and cathode areas of the metal surfaces within pipelines and vessels. These ions form a uniform, stable, and hydrophobic corrosion inhibitory film, protecting these surfaces from corrosive oxygen and moisture. The barrier formed is self-replenishing from mobile ions present in the air or water that is in contact with the metallic surfaces.

An example of results on corrosion monitoring coupons is shown in the picture right. The left sample is untreated water & air. The center sample is treated water & air, and the right sample is air only. It can be seen that the carbon steel coupon surfaces show no signs of corrosion after 7 days.

ZI-CHEM 8411 is a technologically advanced means of providing safe, effective corrosion protection does not contain any nitrates, phosphates or heavy metals.

PACKAGING

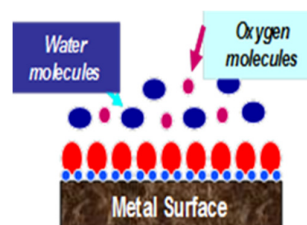
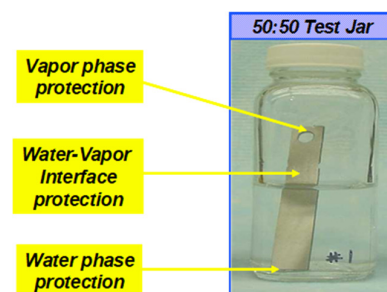
- Available in 22.7kg drum and 45.4kg drum.

HANDLING & SAFETY

ZI-TECHASIA maintains a database of safety data sheets (SDS) on all our products. These contain health & safety information to assist in the safe and appropriate chemical handling, ensuring the protection of personnel.

TYPICAL PROPERTIES

- Appearance: White to off-white
- Physical form: Crystallin powder
- pH (1% sol): 8.1-9.1
- Melting range: 188 – 203°C





PRIMARY APPLICATIONS

Prior to application the system should be cleaned to remove loose rust, mill scale and foreign debris.

ZI-CHEM 8411 can be applied in several ways, depending on the suitability of the application. These include:

1. Place ZI-CHEM 8411 in lower area of drained vessel to be treated and strategically throughout the system.
2. In water circuits, ZI-CHEM 8411 can be added to water and circulate prior to draining.
3. Injected using compressed air and venturi feed into closed vessels.
4. In-line vaporizing vessels mounted in a bypass for the protection of airlines and air handling equipment.

For empty vessels, ZI-CHEM 8411 can be applied at a rate of 0.25 – 0.5 kg per m³ of air volume.

For vessels or systems containing water, add ZI-CHEM 8411 at a rate of 0.25% of the water volume.

For air/water mix, the total feed rate of ZI-CHEM 8411 can be a combination of the above two dosage rates

FEEDING AND CONTROL

For empty vessels, ZI-CHEM 8411 can be applied by placing in an open tray in the base of the vessel. Alternatively, it can be injected through an eductor system using compressed air and venturi feed into closed vessels. For vessels or systems containing water, ZI-CHEM 8411 can be added manually to the water.

Corrosion control monitoring can be measured by using corrosion monitoring coupons in the liquid and air phase of the vessels being treated. Target corrosion rate for mild steel is normally < 5.0 mpy.

Further details for application of this product specific to your system requirements can be obtained from your nearest ZI-TECHASIA technical field representative.