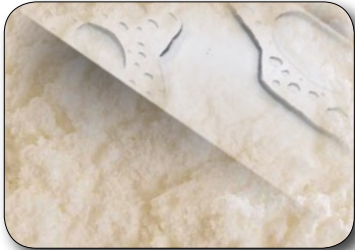


# Zerion® FVS

**MULTI-PHASE CORROSION INHIBITOR FOR INDUSTRIAL APPLICATIONS**

## THE ZERUST® SOLUTION >>>



Zerion FVS Powder Protects Ferrous Metals

Zerust Zerion FVS is a versatile new corrosion inhibitor specifically designed to protect ferrous metals in aggressive corrosion environments where there is the possibility of the accumulation of water, moisture and/or water ingress. FVS provides unique dual action corrosion protection. This new dimension of effectiveness makes FVS the best in class in the market today.

### Zerion FVS's two forms of protection:

1. Vapor Corrosion Inhibitors (VCIs) to protect the interiors of "air space" voids and exposed metal surfaces on welded joints, in crevices, at coating holidays, etc.
2. Soluble Corrosion Inhibitors (SCIs) that mitigate corrosion from moisture accumulation or the ingress of water.

This combination penetrates gaps and interstices inside of enclosed voids to provide comprehensive coverage.

## APPLICATIONS >>>

Zerion FVS is a highly cost-effective corrosion mitigation solution for difficult to protect spaces.

### Some key applications include:



#### **Aboveground Storage Tank (AST) Soil Side Bottoms (SSB):**

Zerion FVS has been used in multiple tank soil side bottom installations. It provides superior protection to exposed steel in vapor spaces and crevices under the tank bottoms and in situations when there is ingress of water into the tank foundation space. FVS can be diluted with water and injected into sand/soil base or introduced as a powder during tank construction or bottom plate refurbishment. Even for tanks with concrete pad foundations, FVS in slurry form can be introduced into the spaces between the plates and the concrete to provide corrosion protection. Zerust has also pioneered a VCI Ring system using FVS if there is no liquid injection. This VCI Ring system is recommended for all SSB installations.



#### **Protection of Voids/Enclosures:**

The Zerion FVS VCI chemistry actively protects exposed steel from corrosion in large volume voids and enclosures. There are multiple delivery mechanisms and product packages that can be adapted to the geometry of the structure being protected. When it is possible for the void to be hermetically sealed, a one-time introduction of FVS can provide protection for up to 2 years.



#### **Hydrostatic Testing:**

Add Zerion FVS to hydrostatic testing water to provide excellent protection to exposed steel surfaces. In addition to the SCI protection, the VCI evolves to protect any air pockets or hidden voids. FVS is versatile and compatible with a variety of water profiles and works best with DI, RO or potable water with less than 150 ppm of chlorine.

### ZERUST AWARDS



Zerust Flange Saver®  
Zerust ReCAST-R™

2012: Winner of the MP  
Readers' Choice NACE Corrosion  
Innovation of the Year award

#### CREDENTIALS

- 40+ years of experience in corrosion prevention
- Client support in 50+ countries

#### MEMBERSHIPS





### DURATION OF PROTECTION

- Zerust® Zerion® FVS ready-to-use mesh sleeves typically provide 1-2 years of corrosion protection depending on how well the enclosure is sealed.
- FVS mesh sleeves used in tank chime ring seals typically provide 1-2 years of corrosion protection depending on the integrity of the chime seal. Longer protection is possible with replenishment of the inhibitor.
- When FVS is introduced into a tank SSB environment, either mixed in as a powder in the sand/soil or injected as concentrated slurry, the typical duration of protection is 5-10 years before inhibitor replenishment is required. The replenishment can be tied into periodic monitoring and maintenance of the effectiveness of the solution.

### PRODUCT PROPERTIES

- Appearance: Off-white powder
- Packaging: Mesh Sleeve, pail or drum

### SAFETY & HANDLING

- Avoid contact with eyes and skin through use of safety glasses and gloves
- If dust is generated ensure adequate ventilation or use dust mask to prevent inhalation
- See Safety Data Sheet (SDS) for more information

### STORAGE

- Shelf life is 36 months
- Store in a sealed container in a dry, ventilated warehouse at temperatures below 70°C (170°F) without exposure to direct sunlight

### BENEFITS

- Easy-to-use and versatile system.
- Corrosion protection for voids and interstices that are impossible to protect with other methods.
- VCIs offer non-permanent corrosion protection at the molecular level that is a more cost-effective and eco-friendly alternative to replacing corroded parts.
- May be combined with simple monitoring procedures to ensure effectiveness of the solution.
- Protection for tank bottom plates and welds with little to no surface preparation.
- For tank SSB application, it may be used independently or in conjunction with cathodic protection.
- Vapor action ensures uniform distribution within the tank bottom.

### PRODUCT USE >>>

The ready-to-use mesh sleeves are primarily meant for dry VCI application where there is also a risk of water ingress. The vapor space protection volume is provided in the table below. For aggressive environments with 1 ppm or higher level of acidic gases, Zerion FVS should be used in combination with Zerion AutoFog®. In the event of water ingress/accumulation, FVS will dissolve out of the packaging and neutralize the threat up to the volume of water indicated in the usage table.

For use of Zerion FVS as a water diluted solution for hydro static testing or for tank SSB protection, it is recommended you contact Zerust Oil & Gas for technical support and sizing recommendations.

FVS does not contain phosphates and is readily compatible with most industrial water treatment processes. Dispose of in accordance with local and national regulations.

### PRODUCT SIZES & SPECIFICATIONS >>>

Product Name	Description	Application Guide
Zerion FVS-S10	Mesh Sleeve 1 m (3 ft.) long x 20 mm (0.75 in) diameter	Place in center of void and seal tightly. Provides approximately 3.1 m <sup>3</sup> volume* of protection.
Zerion FVS-S15	Mesh Sleeve 1.5 m (5 ft.) long x 20 mm (0.75 in) diameter	Designed for use with Inhibitor Delivery System solutions. Contact your sales representative for details.
Zerion FVS-B15	Bulk powder in pails 15 kg/pail	Dilute with water** to use as slurry. Mixing ratio of 0.5% to 15% (w/v) depending on application.
Zerion FVS-B165	Bulk powder in drums 165 kg/drum	

\* Volume of protection is limited to 1 m radius from the mesh sleeve.

\*\* Best performance is obtained with DI, RO or potable water with a chloride level less than 150 ppm.

### OTHER PRODUCTS FROM ZERUST OIL & GAS

#### Zerion AutoFog Diffusers

Diffuser sachets that contain Rapid Diffusion Corrosion Inhibitors and provide corrosion protection for bare metal surfaces in large voids and enclosures with complicated internal configurations. Use to protect inside voids and enclosures containing pipes, interstices, and recesses which are difficult to access or protect.

#### Zerust Flange Saver® Covers

Vapor Corrosion Inhibitor (VCI) poly film sleeves that are specially designed to protect pipes and flanges in extreme conditions. They are proven effective and easy to use and are available in various sizes to accommodate different pipe diameters, pressure ratings and international standards.

PARS SANAT KEYMAND

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