

CREDENTIALS

50+ years of experience in corrosion prevention.

Client support in 70+ countries.

MEMBERSHIPS



ISO Certified

FM 516997 (ISO 9001:2015)

The design and manufacture of corrosion inhibiting and protective packaging systems, and bioplastics compounding and packing solutions.



Hydrostatic Testing of Vessels & Pipelines

Corrosion Risks & Solutions

Hydrostatic testing involves filling a vessel or pipe system with a liquid, usually water, and pressurization of the vessel. This test helps maintain safety standards and the durability of a vessel over time. Newly manufactured pieces, and repaired/refurbished equipment, are initially qualified using this method. They are then revalidated at regular intervals according to the relevant standard.

Problem: Corrosion Due to Residual Hydrotest Water

The water used in hydrostatic testing can cause corrosion of the pipe, potentially leading to failure early in its operating life. Failures have occasionally been reported even before a pipeline enters service. The asset could be compromised due to Microbially Induced Corrosion (MIC), oxygen-related corrosion, galvanic corrosion, and under-deposit corrosion. The primary risk factors to consider are the water source, degree of filtration, temperature, and exposure period. If the structural geometry of the asset includes dead legs, low spots, valves/flanges, etc., these can collect residual moisture and become hotspots for corrosion as well.

Solution: Zerust Corrosion Inhibitors

Clients around the world have successfully used Zerust corrosion inhibitors during hydrostatic testing to reduce corrosion.

Product Name	VCI Carrying Distance	Protection Level	Relative Cost	Material Compatibility	Added Notes
<u>Zerust® ActivPowder™ 10F</u>	Very High	High	\$\$\$\$\$	Ferrous metals only	Best for assets with large void spaces.*
<u>Zerion® FVS</u>	High	High	\$\$\$\$	Ferrous metals only	Premium protection for assets with medium void spaces in aggressive environments.*
<u>Zerion® PPL</u>	Medium	Very High	\$\$\$	Ferrous metals only	High-value protection for assets with minimal void space.*
<u>Zerion® PPL-B</u>	Medium	Very High	\$\$\$	Ferrous metals and Copper alloys	High value protection for assets with minimal void spaces and yellow metal parts.
<u>Zerust® AxxaVis™ HST-10</u>	No VCI	Very High	\$\$\$	Ferrous metals only	Multi-function inhibitor incorporating a chelating agent for low quality hydrotest water.
<u>Zerion® FAN-5 / FAN-6</u>	No VCI	Very High	\$	Ferrous metals only	High-value protection for assets with no void spaces and low-quality hydrotest water.

*May blacken copper alloys (yellow metals).

Warranty and Disclaimer Information:

We guarantee our products conform to documented quality specifications. Product information is subject to change without notice. We make no warranty of any kind expressed or implied as to the effects of use (including, but not limited to, damage or injury). Before use, Buyer/User shall determine the suitability of the product for its intended use, and Buyer/User assumes all risk and liability in connection thereto. All statements, technical information, and recommendations contained herein are based on testing and experiences NTIC believes to be reliable, but the accuracy or completeness thereof is not guaranteed. Buyer/User agrees that, if the product proves to be defective, Seller's obligation shall be to replace or refund the purchase price of such product at Buyer's option. Seller shall not be liable in tort or contract for any loss or damage, incidental or consequential. See www.zerust.com/warranty

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Zerust's Diverse Product Portfolio

Zerust's broad portfolio of unique products offers clients multiple approaches to meet their requirements:

- Soluble Corrosion Inhibitors (SCI's) neutralize contaminants on the steel surface upon contact.
- Vapor Corrosion Inhibitors (VCI's) evolve from dry powders or liquids to protect the crevices and recessed areas that may not come into contact with the SCIs.
- Chelating agents bind with metal ions and create stable complexes that may have a benefit in the pickling process for odorants in gas pipelines.
- pH buffering agents create an alkaline environment that neutralizes the acids produced by microorganisms that cause corrosion.



Solutions Engineered for Client Specific Problems

- Unique approaches for piggable vs. non-piggable lines that factor in asset geometry and configurations (Reference NACE Paper No.13133 and Paper No. 11189).
- Optimizing the product mix of vapor and contact inhibitors for service life requirements, maintenance/inspection schedules and complexity of the asset components.
- Addressing environmental and safety factors to ensure compliance with local regulations.

NOTE: Some Zerust chemistries can be used for dust control with minimal filtering/treatment.

Zerust provides proven products and approaches to a global reference list of satisfied clients.



Enhancing Gas Pipeline Integrity: Flash Corrosion Prevention and Odor Control with Zerust Hydrotesting Products

Zerust's hydrotesting formulations help prevent the formation of iron oxide through flash corrosion on the internal surfaces of the pipeline. Reduction in iron oxide may result in quicker bloom times for the odorant with less odorant required equating to significant savings for the asset owner.

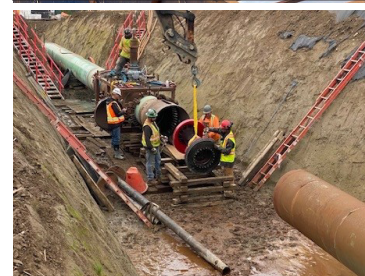


A field project demonstrating the transfer of Zerust's inhibitor slurry from a vacuum to trench pipeline for filling.

Contact Us Today to Safeguard Your Infrastructure with Zerust's Solutions

Zerust Inhibitors, combined with proactive hydrotesting, represent the best-in-class approach to safeguarding critical infrastructure while ensuring compliance with safety standards and ultimately contributing to the bottom line of owners and operators.

Connect with us at www.zerust-oilgas.com/contact-us and become part of our satisfied clientele!



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Zerust® OIL & GAS
WORLDWIDE CORROSION SOLUTIONS

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