

# Zerust Rust Removers and VCI Film Prevent Corrosion of Heat Exchangers



## PROBLEM

### **Corrosion on Heat Exchanger**

- Corrosion on tube bundles and header faces is very common
- Manufacturers try to use greases, oil, coatings and packaging – but these approaches have largely been unsuccessful; and many of these approaches may not be feasible given the geometry of the heat exchanger components
- Heat exchangers in use, when cleaned or refurbished, typically have little/no protection and are stored outdoors
- Such corrosion can lead to
  - Maintenance cost increases for rework to fix the corrosion damage
  - Potential liabilities related to product failures in operation
  - Increase in operational costs due to unplanned delays



**Zerust**® OIL & GAS  
WORLDWIDE CORROSION SOLUTIONS

## SOLUTION

### **Zerust Rust Removers**

- Zerust's Axxaclean™ rust and tarnish removers are powerful solutions for the rework and recovery of metal items
- Zerust offers a range of technologies, from pH neutral products to more aggressive products that also inhibit flash corrosion on cleaned surfaces
- Depending on the type of part/equipment being cleaned, the appropriate Zerust rust removers can be used as a dip, spray or brush on application



## SOLUTION

### **Zerust Vapor Corrosion Inhibitor Film**

- Zerust has pioneered the use of Vapor Corrosion Inhibitors (VCIs) impregnated in packaging materials to protect parts from corrosion
- VCIs emanate from the packaging and adsorb onto the surface of metals creating a mono-molecular layer that disrupts corrosion
- Being a vapor, the inhibitors penetrate all the nooks and crevices of the equipment
- Zerust has multiple types of VCI film based on client application requirements
- When the integrity of the packaging is maintained, Zerust VCIs can protect metal parts for 10+ years
- The VCI in Zerust film is FDA approved for food applications and is non-toxic and safe to use

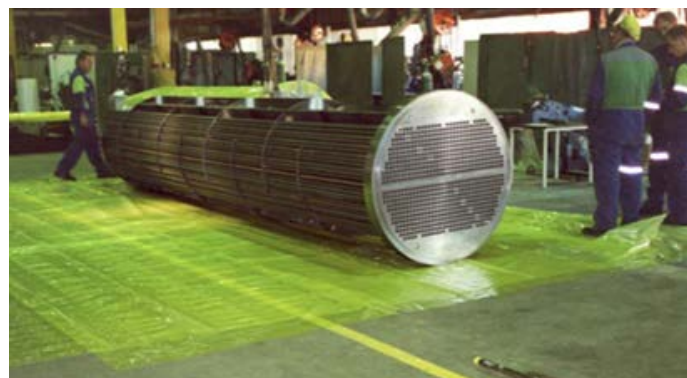


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# Zerust Solutions Preserve Heat Exchangers



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## CLIENT APPLICATION

### *Heat Exchanger Preservation*

- **Problem:** Heat Exchangers – whether new or refurbished, have a complex geometry that make them susceptible to corrosion while making traditional cleaning and preservation difficult
- **Solution:** Zerust products make heat exchanger preservation simple with high strength VCI diffusers enclosed inside VCI film
- Heat exchangers that are cleaned and stored indoors can be preserved with Zerust ferrous (yellow) film wraps without the need for the outdoor preservation film.
- The VCIs release within the enclosure and penetrate the various voids – including the insides of the tubes – to protect from corrosion
- Shrinkable UV resistant outdoor protection films provide an additional barrier layer
- Desiccants between the two layers minimize humidity and facilitate long term preservation

For more information, please contact [marketinginfo@zerust-oilgas.com](mailto:marketinginfo@zerust-oilgas.com)



# Zerust Solutions Clean Heat Exchangers

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## CLIENT APPLICATION

### *Heat Exchanger Cleaning*

- Smaller heat exchangers can be similarly cleaned using custom baths
- In addition to the external surfaces, the Zerust chemistry travels through the tubes and cleans the insides as well; calcium carbonate scale/deposits can also be removed
- The process is quick and effective and the reusable Zerust products make the process economical

