



VCI Packaging Film & Bag Technology

ZERUST  **EXCOR**
Worldwide Corrosion Solutions



Why Zerust®?

In today's competitive global marketplace, your metal products must travel thousands of miles through aggressive atmospheres, extreme daily changes of humidity and temperature, and possibly extended storage before your customers ever see them.

Zerust/Excor® packaging solutions will resolve your corrosion problems while increasing your company's profitability by reducing operating costs, increasing process yields, and enhancing your customers' satisfaction.

Zerust field engineers on four continents use decades of accumulated applications experience to:

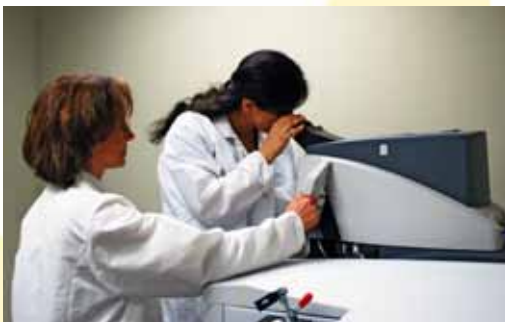
1. Identify and resolve corrosion causes in processes.
2. Eliminate unnecessary customer packaging and materials handling processes.
3. Design optimal customer corrosion inhibiting solutions.
4. Provide point-to-point customer service in over 60 countries.



Worldwide Zerust Technical Support

Our internationally recognized scientists and field engineers work closely with customers to design and implement comprehensive corrosion management systems. Then, Zerust representatives worldwide provide on-site technical support to ensure the efficacy of these solutions. Zerust applications engineers will assist with the on-site preparation and packaging of test shipments. At its destination, the shipment will be inspected and evaluated by a global Zerust representative.

Laboratories and Test Facilities Across the Globe



The effectiveness of the proposed corrosion management system can be evaluated under extreme simulated climatic conditions in one of our worldwide regional Zerust technical support centers.

Zerust Lab Facility in
Circle Pines, Minnesota

Leaders in Corrosion Prevention

Zerust® Corrosion Inhibitors

Zerust is a line of integrated corrosion inhibitor technologies (ICT®) products and services. Zerust ICT products include volatile corrosion inhibitors (VCI) and other inhibitors and surface preparations. Zerust packaging materials contain proprietary chemical formulations that release an invisible, odorless, and non-toxic corrosion inhibiting vapor into the air. The Zerust vapor molecules settle on exposed metal surfaces in an enclosure and interrupt the electrochemical corrosion process. Other ICT products augment the protection power of VCI technology to solve specific corrosion and surface preservation problems.



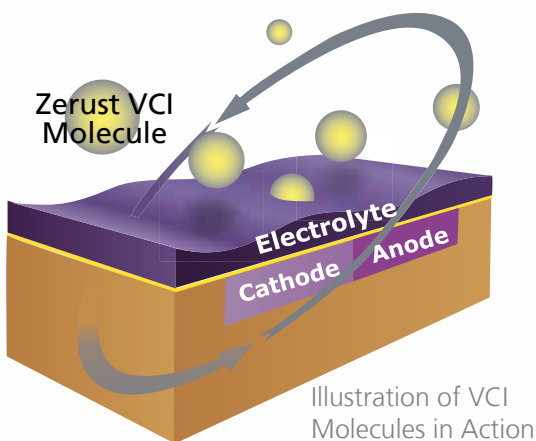
Plate on left was stored in normal poly film; plate on right protected by Zerust VCI Film.

Safe and Proven Technology

Zerust is the inventor of VCI poly technology and continues to lead the market in product effectiveness, service and safety. Since 1979, Zerust products have been used by more than 5,000 companies worldwide. Zerust products are approved by all major automotive companies' toxicology departments, the U.S. military and various health and safety institutes throughout the world. Zerust is a business unit of Northern Technologies International Corporation (NTIC). NTIC's management system is ISO 9001 certified.

What is VCI (Vapor Corrosion Inhibitor)?

VCI molecules inhibit corrosion by forming a temporary protective layer on the metal surface. This invisible layer prevents moisture and environmental elements from reacting with the metal surface and causing corrosion. Vapor corrosion inhibitors get their name from their invisible protective vapor that is transported by diffusion.



In effect, the Zerust VCI corrosion protection applies and removes itself.

ICT®500 Series Product Guide

With Zerust®, packaging and corrosion protection become one application step. No messy greases or time-consuming removal. Zerust packaging materials have a shelf life of two years, combined with a subsequent in-service life of up to five years. Integrated combinations of protection systems, such as corrosion protection with VCI, acid-gas scavenging and anti-static properties are available. Zerust application engineers can recommend and implement the best system for your corrosion management needs.

Use Zerust Packaging for Clean, Dry and Corrosion-Free Products.

Zerust Film



Zerust Film is available in a wide range of sheeting, tubing and centerfold sheeting.

Zerust VCI Bags



Zerust VCI Bags can enclose a part or line a box in seconds.

Zerust Stretch Film



Zerust Stretch Film securely encloses products while providing corrosion protection.

Zerust Skin Film



Zerust Skin Film secures parts to sheets of Zerust treated cardboard.

Zerust Shrink Film



Zerust Shrink Film provides corrosion protection and increases pack integrity.

Zerust Foam Sheeting



Zerust Foam Sheeting offers corrosion protection as well as physical protection.

Zerust Cushioning Film



Zerust Cushioning Film provides corrosion protection as well as physical protection.

ICT400 Series: VCI Kraft Paper



Zerust VCI Kraft Paper and Poly Paper are cost-effective corrosion inhibiting packaging.

Zerust® Films, Bags and Papers

Zerust carries and produces a wide range of corrosion inhibiting films, kraft papers, VCI bags, and VCI sheeting technologies. Zerust film and sheeting products come in various MIL thicknesses, strength enhancements, protection types, shapes and sizes. Your customer service representative can help recommend the ideal packaging solution for your application needs.



Zerust ICT®520 CSL Cold Seal Film Application

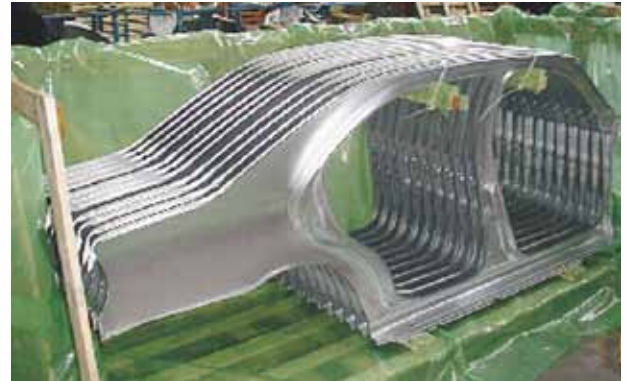
Zerust Paper and Film Products		Metal Protection Types*			
Product Name	Description	Ferrous	Non Ferrous	Multi Metal	Anti Tarnish
Zerust ICT420-35	VCI Kraft Paper			X	
Zerust ICT420-35P	Poly-Coated VCI Kraft Paper	X			
Zerust VCI Corrugate	VCI Saturated Acid-Free Corrugate			X	
Zerust ICT510-C	Stock Classic VCI Film	X	X	X	X
Zerust ICT510-CLHD	High-Density Classic VCI Film	X	X	X	X
Zerust ICT510-SM	Machine-Grade Stretch VCI Film	X		X	
Zerust ICT510-SRK	Heat-Shrink VCI Film	X	X	X	X
Zerust ICT510-M22019	MIL-PRF-22019 Qualified VCI Film	X			
Zerust ICT520-HS	High-Strength VCI Film	X	X	X	X
Zerust ICT520-XF	High-Strength Woven VCI Film	X	X	X	X
Zerust ICT520-SRA	Woven Scrim Polyethylene VCI Fabric	X	X	X	
Zerust ICT520-CSL	Cold-Seal Adhesive VCI Film	X	X	X	X
Zerust ICT530-DP	Multilayer VCI System	X	X	X	X
Zerust ICT504-LM	Moisture Limiting VCI Film	X	X	X	X
Zerust ICT520-CB1	Acid-Gas Scavenger Anti-Tarnish Film				X
Zerust ICT570-CC	Closed Cell VCI Foam Sheeting	X			
Zerust ICT570-OC	Open Cell VCI Foam Sheeting			X	
Zerust Profile Board	Rigid VCI Plastic Profile Board	X	X	X	
Zerust VCI Film Converted Products					
Zerust Tubing	VCI Film in Convenient Tube Form	X	X	X	
Zerust Tote Covers	Transparent VCI Film with Elasticized Edges for Covering Work-in-Progress Totes	X	X	X	X
Zerust VCI Bags	VCI Bags in a Range of Metal Protection Types, Sizes, Construction. Gusset, Flat, Zipper	X	X	X	X
Zerust Weapon Protection Kits	VCI Bags Designed to Protect Weapons and Accessories	X		X	

*Includes stock and non-stock options. Affordable custom options available.

Zerust® at Work: Application Photos



Large machinery shrink-wrapped for long-term outdoor protection.



Stamped steel components are packed in Zerust Multimetal Film for overseas shipping.



Small parts are securely held to Zerust treated cardboard by Zerust Skin Film.



Large assemblies contained in Zerust Gusseted VCI Bags are ready for use, shipment or storage.

More Corrosion Solutions from Zerust

ICT®600 Series:
Rust Removers and Cleaners



Zerust Rust Removers are safe, easy-to-use and protect treated metals from flash corrosion. Photo shows a part before and after Axxaclean.

ICT700 Series:
Liquids and VCI Oil Coatings



Zerust Liquid Additives and Rust Preventative Coatings provide corrosion protection for metals in process, shipping and storage.

ICT800 Series:
VCI Vapor Diffusers



Zerust Vapor Diffusers provide corrosion protection inside enclosures such as control boxes and storage containers.



Zerust® ICT® Types and Tips

Zerust Technology is Easy to Apply

Simply place metal parts into Zerust packaging and seal it. Within a few hours, the interior of the package will be saturated with Zerust vapor molecules, and a powerful corrosion inhibiting molecular layer will form on all exposed metal surfaces.

Later, when the parts are removed from the packaging, the Zerust corrosion inhibiting molecules will vaporize into the atmosphere. Parts will be clean, dry and corrosion-free—and ready for immediate use.

Types of Zerust Films and Papers

Ferrous

Protect iron, steel and cast iron metals using the trademark yellow Zerust Ferrous Packaging. Clear and custom colors and printing are available.

Non-Ferrous

Protect aluminum, copper, brass, bronze and galvanized steel with clear Zerust Non-Ferrous Packaging. Custom colors and printing are available.

Multimetal

Protect combinations of ferrous and non-ferrous metals with green Zerust Multimetal Packaging. Custom colors and printing are available.

Anti-Tarnish

Protect silver, copper and related alloys from tarnishing with clear Zerust Anti-Tarnish and other special acid-gas scavenging packaging films.

Integrated Corrosion Technologies®

Zerust wrapping products can be integrated with additional corrosion inhibiting technologies for application-specific protection such as anti-static, rip-stop, water vapor barriers, acid-gas scavengers (AGS), UV block, custom sizes, reusable covers and more.

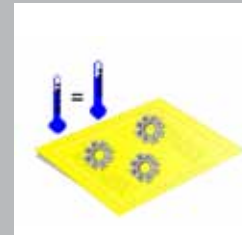
Instructions For Use



Pack only clean and dry parts.



Wear gloves to avoid leaving acidic, corrosion-causing fingerprints.



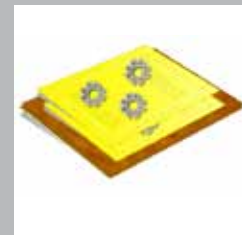
When packing, the ambient temperature and part temperature should be similar to prevent condensation.



Seal packs with zip ties, by heat sealing or by folding and applying waterproof tape.



Insert additional Zerust packaging materials between layers of packed parts to ensure protection throughout.



Avoid contact between metal parts and wood, paper or cardboard, as these materials contain corrosion-causing acids. 7



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Global Support

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Visit www.zerust.com for more information!

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Warranty and Disclaimer Information:

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