

# ZERUST® HS VCI Film

## Technical Data Sheet

ZERUST®/EXCOR® HS VCI Film is a high-strength, lightweight, and durable packaging solution for cost-effective and versatile corrosion protection of metals during work-in-progress, shipping, and storage. HS VCI Film diffuses invisible, odorless, and non-toxic ZERUST® Vapor Corrosion Inhibitors (VCI) that settle onto exposed metal surfaces inside the packaging or enclosure. Upon removal from the packaging, the VCI will dissipate from the metal surface, allowing immediate painting, welding, or further processing. The film's high-strength properties make -HS less susceptible to punctures and tears compared to standard polyethylene films, making it an ideal choice for parts that are heavy or have rough edges.

Use ZERUST® VCI Film to protect metal components, machined and cast parts, engines, molds, and more from rust and corrosion for years†. For additional protection in challenging environments, ZERUST® VCI Film may be used with ZERUST® rust inhibitors, preventatives, coatings, or VCI diffuser products. Engineered for a broad range of applications, HS Film is available in ferrous, non-ferrous, and multimetal formulations and packaging types, including rolls, sheets, tubing, and bags, ensuring an ideal packaging solution. Custom options such as flame-retardant, UV stabilizers, acid-gas blockers, anti-block, slip, and anti-static additives are available to meet specific protection requirements. Whether in storage or transit, ZERUST® HS VCI Film delivers unparalleled performance.

ZERUST® is the inventor of poly VCI technology, and ZERUST® VCI film has proven its performance and safety with thousands of customers worldwide for over 50 years. It is used to protect valuable metal items for manufacturers in industries such as automotive, agricultural, aerospace, and mining. ZERUST®/EXCOR® offers on-site support and service in more than 70 countries via a network of 21 joint venture partnerships. Check with your ZERUST®/EXCOR® representative for a comprehensive corrosion management solution that is most effective for your metal assets.

## Typical Properties

Appearance Typical colors are clear, yellow, or green. Additional colors are available upon request. Subject to order minimums.  
Substrates Available in ferrous, multimetal, and non-ferrous protection formulations.

| Property                       | Direction<br>(Machine or Transverse) | HS VCI Film*                                              |                                                          |                                                           | ASTM Test Method |
|--------------------------------|--------------------------------------|-----------------------------------------------------------|----------------------------------------------------------|-----------------------------------------------------------|------------------|
| Film Thickness                 | -                                    | 4.5 mil (114 µm)                                          | 4 mil (102 µm)                                           | 3.5 mil (89 µm)                                           | D-6988           |
| Dart Impact Resistance         | -                                    | 500 g                                                     | 450 g                                                    | 390 g                                                     | D-1709           |
| Elmendorf Tear Strength        | MD                                   | 898 gf                                                    | 799 gf                                                   | 698 gf                                                    | D-1922           |
|                                | TD                                   | 2030 gf                                                   | 1804 gf                                                  | 1579 gf                                                   |                  |
| Tensile Strength at Break      | MD                                   | 36.1 MPa (5236 psi)                                       | 36.1 MPa (5236 psi)                                      | 36.1 MPa (5236 psi)                                       | D-882            |
|                                | TD                                   | 37.0 MPa (5366 psi)                                       | 37.0 MPa (5366 psi)                                      | 37.0 MPa (5366 psi)                                       |                  |
| Elongation at Break            | MD                                   | 775 %                                                     | 775 %                                                    | 775 %                                                     | D-882            |
|                                | TD                                   | 800 %                                                     | 800 %                                                    | 800 %                                                     |                  |
| Water Vapor Transmission Rate  | -                                    | 0.036 (g/100 in <sup>2</sup> day)<br>@73°F (23°C), 90% RH | 0.04 (g/100 in <sup>2</sup> day)<br>@73°F (23°C), 90% RH | 0.046 (g/100 in <sup>2</sup> day)<br>@73°F (23°C), 90% RH | F-1249           |
| Vapor Inhibiting Ability (VIA) | -                                    | Pass                                                      | Pass                                                     | Pass                                                      | NACE<br>TM0208   |

\* Typical values, not meant to be a specification.

***This data sheet provides general guidelines for operation, application, and removal. Please contact your ZERUST®/EXCOR® account representative for more specific recommendations on your particular operation and conditions.***

## Operating Summary

- Pack only clean and dry parts.
- Always wear clean and dry gloves when handling the metal parts to protect them from corrosion-causing fingerprints.
- When packing, the temperature of the metal parts should be about the same as the room temperature to avoid condensed moisture. (See reverse side for further Operating Summary details).

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product information  
and photos

- Tightly close packages with tape, heat seal, zip ties, or fold over.
- Insert additional ZERUST® materials (such as VCI Kraft Paper) as interleave for added protection in larger and tightly packed or layered packages.
- Avoid placing metal surfaces in direct contact with wood or cardboard (sources of moisture and acid).

## Availability

ZERUST®/EXCOR® -HS VCI Film is a made-to-order product available upon request with options such as flame-retardant, UV stabilizers, acid-gas blockers, anti-block, slip, and anti-static additives, subject to minimum order quantities. ZERUST® HS VCI Films are manufactured with at least 10% recycled plastic, helping support environmental compliance requirements and meet global sustainability expectations. Contact your ZERUST®/EXCOR® representative for ordering information.

### Size ranges (width):

Bags & Tubing:

3" - 125" (flat)

3" - 150" (gusset)

Sheeting:

3" - 26'

## Protection Info†

|          |                                                       |
|----------|-------------------------------------------------------|
| Indoor†  | Protects clean metals for years† when used correctly. |
| Outdoor† | Not recommended                                       |

## Storage

- Store in a cool, dry place and away from sunlight in the original packaging for up to 2 years from the date of shipment.

## Disposal

- Check on options for recycling and incineration.
- Dispose of in accordance with local, national, and international regulations.

## Precautions

- Do not use for outdoor protection.
- Safe for people. This product does not pose a health hazard to users due to its classification as an article according to EU REACH, UN GHS, US OSHA HazCom, CLP, and CA WHMIS regulations.
- Refer to the Safety Data Sheet (SDS) for safety information.

### ‡ DECLARATION

Corrosion protection claims are based on Northern Technologies International Corporation (NTIC) internal laboratory testing performed under controlled parameters on contaminate-free substrates. Real-world application corrosion protection duration on different substrates will vary and depends on factors such as, but not limited to, the application or use, environmental / storage conditions, surface cleanliness, type of substrates, and coating thickness (where applicable). The use of the term "Up to" in reference to time is defined as any time duration from zero up to a specified time frame, but in no event beyond the specified time frame. The use of the term "for years" is based on NTIC's experience with its products but is in no way guaranteed. The use of the term "Up to" in reference to volume is defined as any volume from zero up to a specified volume but in no event beyond the specified volume of protection. It is the customer's / user's obligation to evaluate product performance, corrosion protection duration, safety, and suitability for intended use within the scope advised in the data sheet and to comply with all applicable laws and regulations. **LIMITED WARRANTY/DISCLAIMER** Warranty is limited to the replacement of a product that fails to meet specifications. For full warranty and disclaimer information, visit [www.zerust.com/warranty](http://www.zerust.com/warranty).

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