



4119 White Bear Parkway, St. Paul, MN 55110 USA
Phone: (651) 429-1100, Fax: (651) 429-1122
Toll Free: (800) 4-CORTEC, E-mail: info@cortecvci.com
cortecvci.com • corteclaboratories.com

Evaluating Corrosion Preventive Packaging Systems for GA Manufacturing

To: Bob Dessauer
For: Customer
From: Cortec Corporation Laboratories
4119 White Bear Parkway
St. Paul, MN 55110
cc: Boris Miksic
Cliff Cracauer
Andrew Wroblewski

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Reported by: 

Eric Uutala
Technical Service Manager

Approved by: 

Margarita Kharshan
Vice President of R&D

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Background: Customer has been using a packaging system utilizing Zerust film and paper. This system will be tested and compared to VpCI-126 Blue film.

Sample Received: Two sets of machined metal rings, one wrapped in VpCI-126 blue film, the other wrapped in Zerust Film, with Zerust paper inside.

*Three swashplates were also sent, but corrosion was seen on one. Therefore, these parts were not tested.

Method: ASTM D-1735 Water Fog Cabinet

Materials: Two sets of machined metal rings
VpCI-126 Blue Film
Zerust Film
Zerust Paper

Procedure: The following procedure was used:

- 1) All parts were packed by customer prior to testing.
 - a. The parts were arranged as follows:
 - i. Two rows of six parts in one Zerust film bag, with a sheet of Zerust paper between the parts. This is GA's current rust preventive system.
 - ii. One row of six parts in VpCI-126 Blue film.
- 2) Both bags of parts were placed in ASTM D-1735 Water Fog Cabinet.
- 3) All parts were visually inspected periodically.
- 4) After 432 hours, both bags of parts were removed from ASTM D-1735 Water Fog cabinet.
- 5) All parts were unpacked, visually inspected, and photographed.

Results: The following results were found:

Packaging System	Corroded Parts After 432 Hours
Zerust Film and Paper	12/12
VpCI-126 Blue Film	1/6

Photos: See below.



Figure 1: Zerust packaged parts, after 432 hours in ASTM D-1735 testing.



Figure 2: VpCI-126 packed parts, after 432 hours in ASTM D-1735 testing.

Interpretations:

Customer has been using a packaging system with Zerust film and paper, wrapped around two rows of parts. This packaging system failed on all 12 parts in ASTM D-1735 testing. Parts corroded at different times and to differing amounts throughout the test; the first part showed corrosion after 96 hours.

Conversely, VpCI-126 provided complete protection on 5 of 6 parts. The single part that corroded was in contact with the test chamber itself, and as such, was exposed to constant water contact.