



- 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

Evaluation of Zerust Film

To: Customer

From: Cortec Laboratories, Inc.
4119 White Bear Parkway
St. Paul, MN 55110

cc: Boris Miksic
Cliff Cracauer
Robert Kean
Jay Zhang
Ivana Borsic

Project #: 17-088-1125.bis

Results reported by:

A handwritten signature in black ink that reads "Brian Benduha".

Brian Benduha
Lab Technician

Approved by:

A handwritten signature in black ink that reads "Eric Uutala".

Eric Uutala
Technical Service Manager



Background: Customer is currently using a green Zerust film in their packaging process. It has been submitted to Cortec Labs for evaluation of its corrosion inhibiting properties.

Sample Received: Green Zerust film/bag, (measured at 112.5-125 microns), received on 4/6/17 in good condition

Method: VIA Test, CC-027
Razor Blade Test, CC-004*
Nitrite/Nitrate Test*
*Cortec Laboratories, Inc. is not accredited for the test(s) marked.

Materials: VIA test kit
Razor blade test kit
Glycerol (lot #Q10A018)
Methanol, ACS grade (lot #032916C)
Oven set for 40°C (oven #10)
Nitrite/Nitrate Test Strips (lot #HC553793)
Plain polyethylene film (control film)

Procedure: The tests were conducted according to standard procedures for each test.
(Note- VIA test was conducted using 12 square inches of film/foil per quart size jar)

Results:

Razor Blade Test- Carbon Steel Panels

Sample	Panel #1	Panel #2	Panel #3	End Result
Zerust Film	Pass	Pass	Pass	Pass
Control	Fail	-	-	Fail

Razor Blade Test- Copper Panels

Sample	Panel #1	Panel #2	Panel #3	End Result
Zerust Film	Fail	Fail	Fail	Fail
Control	Fail	-	-	Fail

VIA Test

Sample	Plug #1	Plug #2	Plug #3	End Result
Zerust Film	Grade 3	Grade 3	Grade 2	Pass
Control	Grade 0	-	-	Fail

Nitrite/Nitrate Test Strips

Sample	Results
Zerust Film	Tested positive for both nitrite and nitrate

Photos from VIA Testing:

Zerust Film



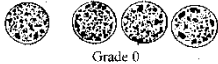
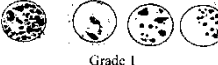

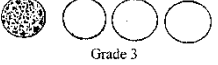
Control

Plug #1

Plug #2

Plug #3

VIA Test Grades (Grade 2 or 3 are passing)
 All three plugs must be grade 2 or better to pass the test

Grade 0:	Blind test No corrosion inhibiting effect	
Grade 1:	Blind test Minute corrosion inhibiting effect	
Grade 2:	Blind test Medium corrosion inhibiting effect	
Grade 3:	Blind test Good corrosion inhibiting effect	

Interpretations:

The submitted Zerust film provides sufficient vapor phase corrosion protection to pass the VIA test. For contact corrosion protection, the Zerust film passes the razor blade test for steel, but not for copper.