



• 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

Comparing Films to VpCI-126

To: Jessica Carpenter

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

cc: Boris Miksic
Rita Kharshan
Joe Louisell
Cliff Cracauer
Andrew Wroblewski

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Results reported by:

Liz Austin
Senior Lab Technician

Approved by:

Eric Uutala
Technical Service Manager

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Background: It was requested that the submitted green 4 mil and blue 8 mil films have their corrosion protection tested and compared to VpCI-126 4mil and VpCI-126 6 mil.

Sample Received:

- 1) Green 4 mil film, manufactured by MetPro, ok condition, received 03-06-14
- 2) Blue 8 mil film, manufactured by MetPro, ok condition, received 03-06-14

Method:

- 1) VIA Test Method, CC-027
- 2) Razor Blade Test Method, CC-004*
- 3) Paragon 1000 FTIR, Method CC-006
- 4) Nitrite Test*

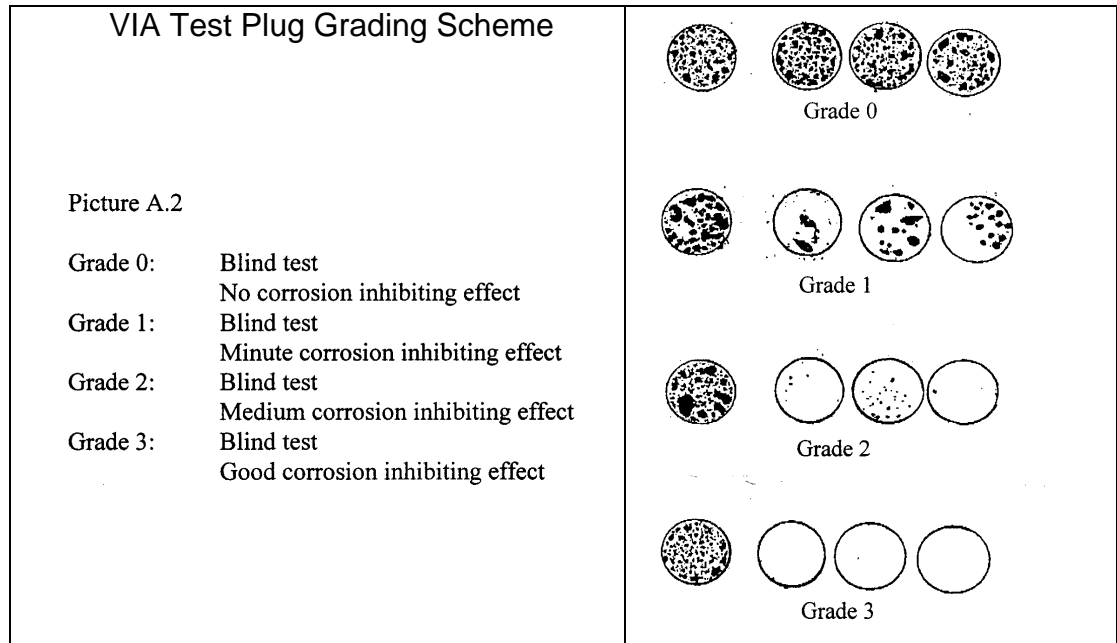
*Cortec Laboratory is not accredited for the test marked

Materials:

- 1) VIA Test Kit
- 2) Razor Blade test kit
- 3) Methanol, lab grade
- 4) Nitrite Test Strips, from VWR, part number EMD-10020-1
- 5) Deionized Water
- 6) Paragon 1000 FTIR
- 7) Plain polyethylene, control film
- 8) VpCI-126 Lot# 33659-4 mil
- 9) VpCI-126 Lot#35120 - 6 mil

Procedure:

- 1) The tests were performed according to standard procedure. The blue and green films were tested as a monolayer film, with 1"x6" strips. The VpCI-126 6mil was tested by CAFD.
- 2) The VIA test was graded according to the following system:



Results:

Razor Blade Test – Carbon Steel

Sample	Panel 1	Panel 2	Panel 3	Overall
Green Film-4 mil	Pass	Pass	Fail	Pass
VpCI-126-4 mil	Pass	Pass	Pass	Pass
Blue Film-8 mil	Pass	Pass	Pass	Pass
VpCI-126-6 mil	Pass	Pass	Fail	Pass
Control	Fail	-	-	N/A

Razor Blade Test – Copper

Sample	Panel 1	Panel 2	Panel 3	Overall
Green Film-4 mil	Fail	Fail	Fail	Fail
VpCI-126-4 mil	Pass	Pass	Pass	Pass
Blue Film-8 mil	Pass	Pass	Pass	Pass
VpCI-126-6 mil	Pass	Pass	Pass	Pass
Control	Fail	-	-	N/A

VIA Test

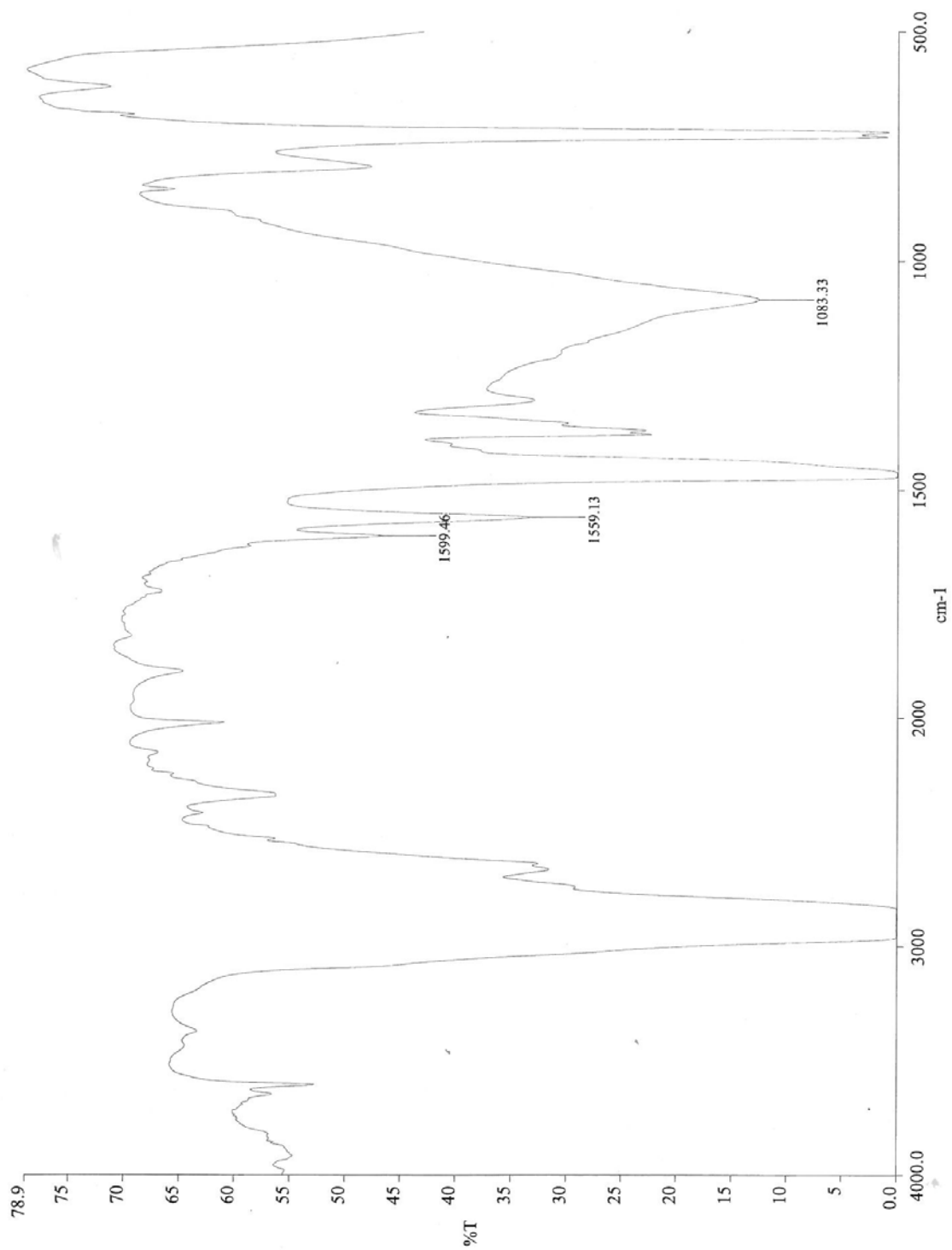
Sample	Plug # 1	Plug # 2	Plug # 3	Pass / Fail
Green Film-4 mil	Grade 1	Grade 1	Grade 1	Fail
VpCI-126-4 mil	Grade 3	Grade 3	Grade 3	Pass
Blue Film-8 mil	Grade 2	Grade 2	Grade 1	Fail
VpCI-126-6 mil	Grade 2	Grade 3	Grade 3	Pass
Control	Grade 0	Grade 0	N/A	N/A

Note: Grades 0 and 1 are considered failing. See below for grading scale example.

Results relate only to the items tested

Interpretations:

- 1) The results of the razor blade test determined that the submitted green film did not provide sufficient copper razor blade protection, but it did protect carbon steel. The VpCI-126 6 mil and 4 mil films, and the submitted blue film all passed the razor blade test and provided sufficient contact-phase corrosion protection.
- 2) Based on the VIA test results, the submitted green film and blue films do not provide vapor-phase corrosion protection.
- 3) The results for the VIA test determined that the VpCI-126 6 mil and 4 mil provided good vapor-phase corrosion protection.
- 4) Analysis of the FTIR determined that the blue and green films that were submitted contain a desiccant. The blue and green films do not contain nitrite.



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