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Evaluation of Daubert Films

From: Cortec Corporation Laboratories
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Background: Customer submitted two Daubert films and requested that the corrosion inhibiting properties of the films be evaluated.

Sample Received:

1. White Daubert film, unlabeled, received 11-01-11, good condition
2. Blue Daubert film (Premium Metal Guard), unlabeled, received 11-01-11, good condition

Method:

- 1) VIA Test CC-027
- 2) Razor Blade Test CC-004
- 3) FTIR Test CC-006
- 4) Nitrite Test

Materials:

- 1) Razor Blade test kit
- 2) VIA Test Kit
- 3) Perkin Elmer Paragon 1000 Spectrophotometer
- 4) Nitrite/Nitrate test strips

Procedure: The tests were conducted according to standard procedures for each test.

Results:

Razor Blade Test-Carbon Steel Panels

Sample	Panel 1	Panel 2	Panel 3
Blue Daubert Film	Pass	Fail	Fail
White Daubert Film	Pass	Fail	Fail
Control	Fail	-	-

Razor Blade Test -Copper Panels

Sample	Panel 1	Panel 2	Panel 3
Blue Daubert Film	Pass	Fail	Fail
White Daubert Film	Pass	Fail	Fail
Control	Fail	-	-

VIA Test Results

Sample	Plug #1	Plug #2	Plug #3
Blue Daubert Film	Grade 0	Grade 1	Grade 1
White Daubert Film	Grade 2	Grade 2	Grade 2
Control	Grade 0	-	-

Note: The VIA grading system is attached to the end of the report.

Nitrite Test





Sample	Result
Blue Daubert Film	Contains Nitrite, both sides

White Daubert Film	Contains Nitrite, both sides
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Interpretations:

1. Based on the test results, the blue Daubert film did not provide contact or vapor-phase corrosion protection.
2. The Razor Blade test results determined that the white Daubert film did not provide contact-phase corrosion protection for copper and carbon steel. The VIA test results determined that the white Daubert film provided moderate vapor-phase corrosion protection.
3. Based on FTIR both films have the same chemical composition (nitrite + salt of carboxylic acid, probably sodium benzoate). The difference in VIA test results are probably due to non-uniform dispersion of corrosion inhibitor in polyethylene.

VIA Test Grades (Grade 2 or 3 are passing)

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

