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## *Evaluation of Yellow VCI Film*

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**Project #:** 11-120-1125(bis)

**Test conducted by:** *Liz Austin*

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**Approved by:** *M. Kharshan*  
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Laboratory Director

**Date:** June 17, 2011



**Background:** Yellow VCI film was submitted for testing. The producer is Custom Poly Products.

**Sample Received:** Yellow VCI Film, received 06/08/11, good condition

**Sample(s) labeled:** 11-120-1125A

**Method:**

- 1) VIA Test CC-027
- 2) Razor Blade Test CC-004
- 3) FTIR Test CC-006
- 4) Tensile Test, ASTM D882
- 5) Tear Propagation, ASTM D1922

**Materials:**

- 1) VpCI-126, sample GW0362516
- 2) VIA test kit
- 3) Razor Blade test kit
- 4) Oakland Tensile Tower
- 5) Thwing-Albert Tear Tester
- 6) Perkin Elmer Paragon 1000 Spectrophotometer

**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
Yellow VCI Film	Pass	Pass	Pass
VpCI-126	Pass	Pass	Pass
Control	Fail	-	-

**Razor Blade Test -Copper Panels**

Sample	Panel 1	Panel 2	Panel 3
Yellow VCI Film	Fail	Fail	Fail
VpCI-126	Pass	Pass	Pass
Control	Fail	-	-

**VIA Test**

Sample	Plug #1	Plug #2	Plug #3
Yellow VCI Film	Grade 1	Grade 2	Grade 2
VpCI-126	Grade 3	Grade 2	Grade 3
Control	Grade 0	-	-

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

## Mechanical Properties

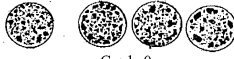

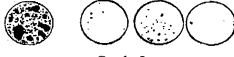

<u>Property</u>	<u>-</u>	<u>Test Method</u>	<u>Units</u>	<u>Yellow VCI Film</u>	<u>VpCI-126</u>
Thickness	-	-	-	2.10	2.00
Breaking Factor	MD	ASTM D882-02	lbs/in	7.77	8.07
	TD			6.97	8.03
Tensile Strength at Break	MD	ASTM D882-02	psi	3775.57	4586.96
	TD			3635.33	4171.95
Elongation at Break	MD	ASTM D882-02	%	465.05	592.03
	TD			752.45	671.18
Yield Strength	MD	ASTM D882-02	psi	1700.95	1545.34
	CD			1436.23	1517.03
Tear Strength	MD	ASTM D1922-06a	mN	1553.90	2644.78
	CD			7157.38	7267.25

\*Typical properties represent average laboratory values and are not intended as specifications but as guides only.

### Interpretations:

- 1) Based on the VIA test results, the submitted Yellow VCI Film does not provide sufficient vapor-phase corrosion inhibition.
- 2) The results of the razor blade testing determined that the Yellow VCI film doesn't provide multi-metal protection.
- 3) VpCI-126 provided sufficient vapor and contact-phase corrosion inhibition.
- 4) The results of the Mechanical Properties testing determined that the submitted yellow VCI film and VpCI-126 are comparable. VpCI-126 film has a slightly greater tensile strength.

### VIA Grading Chart: Grade 2 and higher are considered passing

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