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- 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
- Internet http://www.cortecvci.com

## Evaluation of ITW VCI films

**Background:** Nucor Steel requested that the submitted films produced by ITW be evaluated to determine if they are good corrosion inhibitors.

**Purpose:** Evaluate anticorrosion properties of the submitted VCI ITW films.

Materials: 1. Submitted VCI ITW clear film, (3 mils), # VCIA7083020

- 2. Submitted VCI ITW clear with string film, (3 mils),
- # VCIA7083020 3. Uncoated polyethylene film, 3 mil
- 3. Uncoated polyethylene film, 3 mils (control film)
- 4. Carbon Steel Panels
- 5. Methanol-lab grade
- 8. Razor Blade test kit
- 9. VIA test kit
- 10. FT-IR test kit
- 11. Perkin Elmer FT-IR 1000 Spectrometer
- Method: 1. FT-IR test 2. Razor Blade test, CC-004 3. VIA test
- **Procedure:** The above tests were performed according to standard procedures for each.

## **Results:**

Razor Blade Test Performed on Carbon Steel Panels

Film	Panel 1	Panel 2	Panel 3
VCI ITW clear film	Fail	Fail	Fail
VCI ITW clear string film	Fail	Fail	Fail
Control	Fail	Fail	Fail



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Film	Plug #1	Plug #2	Plug #3
VCI ITW clear film	1	1	1
VCI ITW clear string film	0	2	1
Control	0	0	0

Note: VIA Grading system is attached below

## FT-IR Test

FT-IR results are attached at the end of the report.

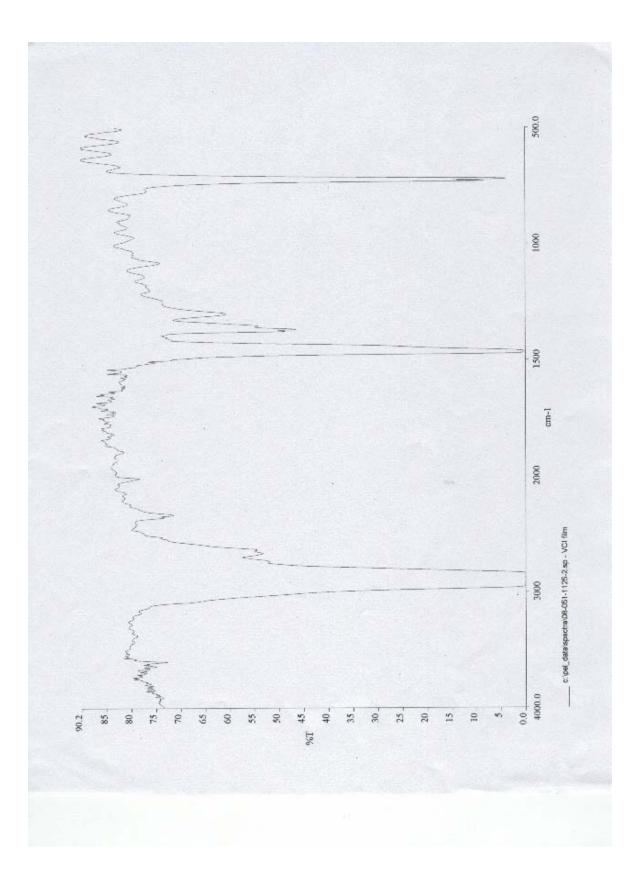
**Conclusion:** The results concluded that both the VCI ITW clear film and the VCI ITW clear string film failed to provide sufficient vapor phase or contact corrosion inhibition. Both of these films contain insufficient amounts of corrosion inhibitors, if any.

## VIA Test Grades (Grade 2 or 3 are passing)

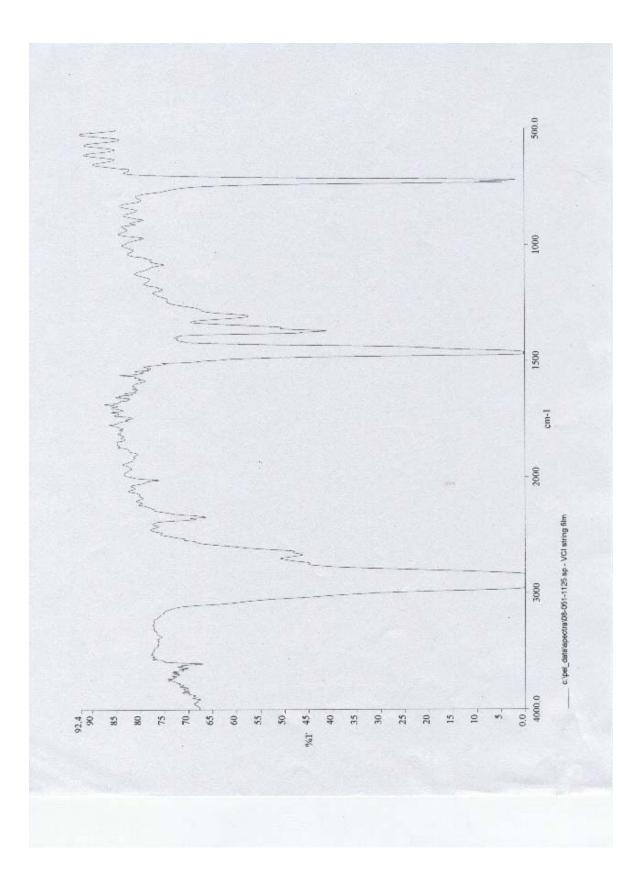
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Grade 0:	Blind test No corrosion inhibiting effect	
Grade 1:	Blind test	Grade 1
	Minute corrosion inhibiting effect	
Grade 2:	Blind test	
	Medium corrosion inhibiting effect	Grade 2
Grade 3:	Blind test	
	Good corrosion inhibiting effect	

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