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Evaluating unknown blue colored film and Corotex corrosion inhibiting paper

Background: Brian Coles/Lake Chemicals and Minerals, submitted an unknown blue colored film and Corotex paper to Cortec Corporation.

Purpose: Evaluate the corrosion inhibition performance of submitted film and paper

Method: Razor Blade Test
 VIA Test
 FT-IR Analysis
 Nitrite Test

Materials: Razor Blade Test Kit
 VIA Test Kit
 Perkin Elmer Paragon 1000 FT-IR Spectrometer
 Unknown blue colored film (4 mil)
 Cortec VpCI-126 film (4 mil)
 Cortec VpCI-144 paper
 Corotex corrosion inhibiting paper
 EM Quant Nitrite/Nitrate Test strips (Lot #OC555062, Exp 9/08)

Procedure: The above tests were performed according to standard procedures for each.

Results:

Razor Blade Test

Material	Panel #1	Panel #2	Panel #3
Submitted unknown blue colored film	Pass	Pass	Pass
Corotex Paper	Pass	Pass	Pass
Cortec VpCI-126 film	Pass	Pass	Pass
Cortec VpCI-144 paper	Pass	Pass	Pass
Control	Fail	Fail	Fail



Razor Blade Test (copper)

Material	Panel #1	Panel #2	Panel #3
Corotex Paper	Fail	Fail	Fail
Cortec VpCI-126 film	Pass	Pass	Pass
Cortec VpCI-144 paper	Pass	Pass	Pass
Control	Fail	Fail	Fail

VIA Test

Material	Plug #1	Plug #2	Plug #3
Submitted unknown blue colored film	Grade 1	Grade 1	Grade 1
Corotex Paper	Grade 3	Grade 3	Grade 3
Cortec VpCI-126 film	Grade 3	Grade 3	Grade 3
Cortec VpCI-144 paper	Grade 3	Grade 3	Grade 3
Control	Fail	Fail	Fail

Nitrite Test: Submitted unknown blue colored film and Corotex paper, are both heavily nitrite based. Cortec VpCI-126 and Cortec VpCI-144 are non nitrite based products.

Conclusion:

- (1) Submitted unknown blue colored film is heavily nitrite based and does not offer adequate vapor phase corrosion inhibition.
- (2) From FT-IR analysis, the spectrum of submitted unknown blue colored film has the appearance of containing a small amount of benzoates.
- (3) Submitted Corotex paper is heavily nitrite based and fails to provide protection to non ferrous copper.
- (4) Cortec VpCI-126 film and Cortec VpCI-144 paper provide excellent corrosion inhibition.

Project #: 07-021-1125

VIA Test Grades (Grade 2 or 3 are passing)

- 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



Grade 0



Grade 1



Grade 2



Grade 3

