



• 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

Evaluation of Stretch Films

To: Tim Rayburn

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

cc: Boris Miksic
Anna Vignetti
Mike Morin
Cliff Cracauer

Project #: 11-246-1125(bis)

Test conducted by: *Liz Austin*

Liz Austin
Sr. Lab Technician

Approved by: *M. Kharshan*

Margarita Kharshan
Laboratory Director



Background: Customer submitted 3 samples of stretch film and requested that the contact-phase corrosion inhibition be tested. Film is manufactured by ITW.

Sample Received:

1. 9.5"x 5' blue protective film, unlabeled, submitted 11-11-11, good condition
2. 15"x 5' blue protective film, unlabeled, submitted 11-11-11, good condition
3. Light blue stretch film, unlabeled, submitted 11-11-11, good condition

Method:

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

Materials:

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

Procedure: The tests were conducted according to standard procedures for each test. Razor blade testing was performed on film that was pre-stretched, and film that had not been stretched.

Results:

Razor Blade Test-Carbon Steel Panels

| Sample | Panel 1 | Panel 2 | Panel 3 |
|---------------------------------------|---------|---------|---------|
| 9.5"x 5' blue film-not stretched | Fail | Fail | Fail |
| 9.5"x 5' blue film-stretched | Fail | Fail | Fail |
| 15"x 5' blue film-not stretched | Fail | Fail | Fail |
| 15"x 5' blue film- stretched | Fail | Fail | Fail |
| Light blue stretch film-not stretched | Fail | Fail | Fail |
| Light blue stretch film-stretched | Fail | Fail | Fail |
| Control | Fail | - | - |

Razor Blade Test -Copper Panels

| Sample | Panel 1 | Panel 2 | Panel 3 |
|---------------------------------------|---------|---------|---------|
| 9.5"x 5' blue film-not stretched | Fail | Fail | Fail |
| 9.5"x 5' blue film-stretched | Fail | Pass | Pass |
| 15"x 5' blue film-not stretched | Fail | Fail | Pass |
| 15"x 5' blue film- stretched | Pass | Pass | Pass |
| Light blue stretch film-not stretched | Pass | Pass | Pass |
| Light blue stretch film-stretched | Pass | Pass | Pass |
| Control | Fail | - | - |

Nitrite Test

| Sample | Result |
|-------------------------|------------|
| 9.5''x 5' blue film | No nitrite |
| 15''x 5' blue film | No nitrite |
| Light Blue stretch film | No nitrite |

Interpretations:

1. Based on the razor blade test results, all of the submitted films failed to provide contact-phase corrosion protection for carbon steel. When the films were stretched before testing, all of the films provided protection for copper. The light blue film was the only film that provided contact-phase corrosion protection for copper when not stretched before testing.
2. The FTIR spectra for the films determined that the light blue film contained characteristics of a carboxylate, which is most likely sodium benzoate. Nitrite test results determined that the film does not contain nitrite.





