



• 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

Evaluating Rust Preventive Options for Customer

To: Jessica Carpenter

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

cc: Boris Miksic
Mike Gabor
Andrew Wroblewski

Project #: 14-058-1825.bis

Reported by:

Eric Uutala
Technical Service Manager

Date: April 2, 2014



Background: Customer would like Cortec to compare the corrosion preventive properties of their current process fluids to similar Cortec products.

Sample Received: Five drawn metal stampings
Rust Veto 4240, ~6 ounces in a plastic bottle
Milform 8050TM, ~6 ounces in a plastic bottle
*Milform sample was pre-diluted at 1:4 prior to shipment. The resulting emulsion was clearly separated and had to be mixed prior to use.

Method: ASTM D-1735 Water Fog Cabinet

Materials: Four drawn metal stampings
Rust Veto 4240
Milform 8050TM
EcoLine Metalworking Fluid (Batch #90913)
VpCI-414
Deionized water

Procedure: The following procedure was used:

- 1) Four drawn metal stampings were selected for this test.
- 2) Each stamping arrived with an unknown oily coating, which was cleaned first.
 - a. Each stamping was dipped in a 10% (by weight) solution of VpCI-414 in deionized water for cleaning.
- 3) After cleaning, each stamping was rinsed with deionized water, and hand dried.
- 4) Each stamping was then further treated as follows:
 - a. No treatment (control)
 - b. Dipped in Milform 8050TM
 - c. Dipped in Milform 8050TM, then immediately dipped in Rust Veto 4240.
 - d. Dipped in EcoLine Metalworking Fluid (used at 5% concentration, by weight, in deionized water).
- 5) After dipping, all stampings were allowed to air dry overnight.
- 6) All stampings were then placed in ASTM D-1735 cabinet.
- 7) All stampings were visually inspected periodically.
- 8) After 144 hours, all stampings were removed from ASTM D-1735 testing.
- 9) All stampings were visually inspected and photographed.

Results: The following results were found:

Rust Preventive Used	Time to Corrosion (Hours)
None (control)	<8
Milform 8050	48
Milform 8050 + Rust Veto 4240	120*
EcoLine Metalworking Fluid	No corrosion

*See note in Interpretations section.

Photos:



Figure 1: Customer's stampings after 144 hours in ASTM D-1735 testing.

Interpretations: After 144 hours in ASTM D-1735 water fog testing, the stamping treated with EcoLine Metalworking Fluid was corrosion free, while the other three stampings had moderate to severe corrosion.

*The stamping treated with Milform and Rust Veto corroded between 54 and 120 hours; failure occurred during a weekend.