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Evaluating Rust Inhibitors

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Sample Received: Carbon steel radiator fins
Orison 'Rust Bandit' Water Based Rust Inhibitor
Carwell Rust Inhibitor T32

Method: ASTM D-1748 Humidity (Modified)

Materials: Carbon steel radiator fins
Rust Bandit
Carwell rust inhibitor
VpCI-377
BioCorr

Procedure: The following procedure was used:

- 1) Five carbon steel radiator fins were cleaned with methanol prior to testing.
- 2) After cleaning, fins were prepared as follows:
 - a. No treatment (control)
 - b. Dipped in Rust Bandit (10% solution in deionized water)
 - c. Coated with Carwell rust inhibitor
 - i. There was not enough product available to fully immerse the fin, so coating was performed with a foam paint brush.
 - d. Dipped in BioCorr
 - e. Dipped in VpCI-377 (7% solution in deionized water)
- 3) All fins were then hung to air dry overnight.
- 4) All fins were then placed in ASTM D-1748 humidity cabinet.
- 5) All fins were visually inspected periodically.
- 6) After 672 hours, all fins were removed from ASTM D-1748 humidity cabinet.
- 7) All fins were visually inspected and photographed.

Results: The following results were found:

Rust Preventive Used	Time to Corrosion (Hours)
None (Control)	<24
Rust Bandit (10%)	24
Carwell	DNF*
BioCorr	576
VpCI-377 (7%)	384

DNF – Did not fail during 672 hours of ASTM D-1748 testing.

Photos:





Interpretations: Accelerated corrosion testing showed that VpCI-377 and BioCorr both provide excellent protection on carbon steel radiator fins from customer. Both products provided superior protection when compared to Rust Bandit. Additionally, BioCorr (water based) provided comparable protection to Carwell T32, which is petroleum based.