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Evaluating Rust Preventatives for Metal Parts from Customer

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Background: Customer sent two metal pieces to Cortec for testing. They need to protect the steel between processes as well as after welding. VpCI-377 will be compared to the DuBois product they currently use.

Sample Received: Two metal pieces
DuBois 103 SW liquid concentrate

Method: ASTM D-1748 Humidity Cabinet

Materials: 2 metal pieces, supplied by Customer
DuBois 103 SW, supplied by Customer
VpCI-377

Procedure: The following procedure was used:

- 1) Prior to testing, the metal pieces from Customer were thoroughly cleaned with methanol.
- 2) After cleaning, two test solutions were prepared:
 - a. DuBois 103SW was diluted to 10% with deionized water, as per customer's instructions.
 - b. VpCI-377 was also diluted to 10% with deionized water.
- 3) One piece was dipped in the DuBois solution, the other was dipped in VpCI-377 solution.
- 4) Both pieces were allowed to air dry overnight.
- 5) Both pieces were then hung in ASTM D-1748 humidity cabinet.
- 6) Both pieces were visually inspected periodically.
- 7) After 500 hours, both pieces were removed from ASTM D-1748 humidity cabinet.
- 8) Both pieces were visually inspected and photographed.

Results: The following results were found:

Rust Preventive	Time to Failure (Hours)
DuBois 103SW (10%)	168
VpCI-377 (10%)	456*

DNF – Did not fail during 500 hours of ASTM D-1748 testing.

Photos:



Figure 1: Customer piece coated with DuBois 103SW, after 500 hours of ASTM D-1748 humidity testing.



Figure 2: Customer piece coated with VpCI-377, after 500 hours of ASTM D-1748 humidity testing.

Interpretations:

VpCI-377 provided greater than twice the corrosion protection of DuBois 103SW.