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Evaluating Various Process Fluids from TI Automotive

Background: For almost 100 years, TI Automotive has been an industry leader in the production of innovative fluid storage and delivery systems and components. TI Automotive is the only global supplier of fully integrated fuel storage and delivery systems for car and trucks. TI would like Cortec to evaluate various fluids that are currently used in their process.

Purpose: Evaluate the corrosion inhibiting ability of Rust Veto 2725, and compare to similar Cortec products. Also, evaluate compatibility of two Yumate products currently used by TI Automotive.

Method: Standardized Compatibility Test
ASTM D-1748 Humidity Cabinet

Materials: 1010 carbon steel panels
VpCI-377
EcoLine Long Term Rust Preventative
Rust Veto 2725, provided by TI Automotive
Yumate EC-51, provided by TI Automotive
Yumate SC-25, provided by TI Automotive

Procedure: The following procedure was used:

Compatibility Testing:

1) A 5% solution of EC-51 was created, and mixed 1:1 with SC-25 for compatibility testing.
2) Compatibility testing was carried out according to its work instruction.

ASTM D-1748 Humidity

1) Four carbon steel panels were cleaned in preparation for humidity testing.
2) The panels were dipped in one of the following solutions:
    a. Rust Veto 2725
    b. EcoLine Long Term Rust Preventative
    c. VpCI-377 (10%)
    d. Control (no dip)
3) After dipping, panels were hung to dry overnight.
4) Panels were then hung in ASTM D-1748 humidity cabinet, where they were visually inspected periodically.
5) After 788 hours, all panels were removed from ASTM D-1748 humidity cabinet.
6) Panels were visually inspected and photographed.

Results: The following results were found:

Compatibility Testing:

1) After 3 cycles of compatibility testing, EC-51 (at 5%) and SC-25 were incompatible.

ASTM D-1748 Humidity:

Product	Time to Failure (Hours)
Control	<24
Rust Veto 2725	312
VpCI-377	672
EcoLine Long Term Rust Preventative	DNF*

DNF – Did not fail during 788 hours of testing.

Conclusion: Humidity testing showed that Cortec products vastly outperformed the Rust Veto product. VpCI-377 provided more than twice the protection of the Rust Veto product, and EcoLine Long Term Rust Preventative provided even greater protection than VpCI-377. Furthermore, the Rust Veto product is kerosene and solvent based, whereas VpCI-377 and EcoLine are water-based and soy-based, respectively.

The fluids submitted for compatibility testing were incompatible after each of the three test cycles. Solids formed in each stage of testing.

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