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Comparing Rust Preventive Liquids for a Driveshaft Company

Background: A driveshaft manufacturer sent 5 outer races to Cortec. They would like two rust preventive liquids evaluated and compared to similar Cortec products in humidity testing.

Purpose: To compare rust preventive coatings currently used by the driveshaft manufacturer to similar products offered by Cortec.

Method: ASTM D-1748 Humidity Cabinet (120°F, 95% relative humidity)

Materials: 5 outer races, provided by drive shaft manufacturer
 PSW50 liquid, provided by drive shaft manufacturer
 Anticorit P307 liquid, provided by drive shaft manufacturer
 BioCorr
 EcoLine 3690

Procedure: The following procedure was used:

- 1) All five of the outer races were cleaned with methanol prior to testing.
- 2) After cleaning, parts were dipped in one of the following solutions:
 - a. PSW50 (used as received)
 - b. Anticorit P307 (used as received)
 - c. BioCorr
 - d. EcoLine 3690
 - e. Control (no treatment)
- 3) After dipping, the parts were allowed to air dry overnight.
- 4) After drying, the parts were placed in ASTM D-1848 humidity cabinet.
- 5) All parts were visually inspected periodically.
- 6) After 500 hours, all the parts were removed from ASTM D-1748 humidity.
- 7) All parts were visually inspected and photographed.

Results: The following results were found:

Treatment	Time to Failure (Hours)
Control	<24
PSW50	144
Anticorit P307	216
BioCorr	DNF*
EcoLine 3690	DNF*

DNF – Did not fail during 500 hours of humidity testing.

Conclusion: Humidity testing showed that both EcoLine 3690 and BioCorr provide significantly better corrosion protection than the products currently used by the drive shaft manufacturer. These products provided between 6 and 9 days of corrosion protection, while the Cortec products provided greater than 21 days of protection. Furthermore, the Cortec products are both environmentally friendly and biobased: BioCorr is soybean oil based, while EcoLine 3690 is canola oil based.



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