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Comparing Salt Spray Protection of LPS 3 to VpCI-368 and VpCI-369 for Caterpillar

Background: For over 80 years, Caterpillar has been the world's leading manufacturer of construction and mining equipment, diesel and natural gas engines, and industrial gas turbines. Caterpillar's revenues were up 28% from 2005 to 2006, reaching over $41 billion last year. Caterpillar currently uses LPS 3 as a rust inhibitor, and they have asked Cortec to compare the corrosion protection to that of VpCI-368 and VpCI-369.

Purpose: Evaluate, in salt spray, the corrosion protection of LPS 3, and compare to VpCI-368 and VpCI-369.

Method: ASTM B 117 Salt Fog Cabinet

Materials: LPS 3 Inhibitor liquid
VpCI-368
VpCI-369
1010 Carbon Steel Panels

Procedure: The following procedure was used:

1) Three carbon steel panels were dipped in the following products:
   a. A1 – LPS 3
   b. B1 – VpCI-368
   c. C1 – VpCI-369
2) After coating, panels were hung to dry over the weekend.
3) Three panels, along with a control panel, were then placed in ASTM B 117 Salt Fog cabinet.
4) Panels were visually inspected periodically.
5) After 500 hours, all panels were removed.
6) Panels were visually inspected and photographed.

Results: The following results were found:

Panel	Time to Corrosion (Hours)
A1	<24
B1	DNF
C1	DNF

DNF – Did not fail during testing.

Conclusion: The viscosity and overall appearance of the LPS 3 is very similar to VpCI-369, but the protection of the LPS 3 was not good compared to the Cortec products. Panel A1 (dipped in LPS 3) began to corrode in less than 24 hours. VpCI-368 and VpCI-369 did not corrode after 500 hours of testing.

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