Dale Institute LLC

4-14-2011

Engineering Test Results for RPM (Rust Prevention Magic**) -**E.C.S. Automotive Concepts

Validation Test Report

Subject: RPM (Rust Prevention Magic) Produced by E.C.S. Automotive Concepts

Initial Observation: RPM is easy to apply and does not significantly change color or appearance of the component. Application is quickly completed and cure time is minimal.

Test Parameters: Thermal Shock, 1000 Hour Salt Fog (60% Solution), Acid Exposure, Abrasive Testing, Salt Spray (92% Solution).

Test Subject: Steel Tie Rod End

Procedure: RPM applied to the Steel Tie Rod End via instructions included on the Product Label. Product applied exactly as indicated, adequate cure time observed followed by Validation/Durability test. RPM applied prior to the first test only, original application exposed to each test.

Test: Thermal Shock

Purpose: Expose component treated with RPM to temperature Extremes (-140F to +135F)

Duration: 10 Hours

Procedure: Component inspected prior to test, excellent coverage of RPM observed. Component placed in thermal chamber at room temperature, initial test heated component to 135F, temperature cycled to -140F at various intervals, ranging from 5 minutes to 1 hour. Cycle repeated for a total of 10 hours.

Thermal Shock Results: Completion of 10 hour thermal shock test revealed no measurable degree of deterioration or discoloration of the component.

Grade: 100% Durability

Test: 1000 Hour Salt Fog (60% Solution)

Purpose: Expose RPM treated component to 60% salt solution for 1000 hours using Salt Fog mode.

Duration: 1000 Hours

Procedure: Component inspected prior to salt fog test, Excellent Coverage of RPM on component observed. RPM treated component placed in salt fog chamber for 1000 hours and exposed to a 60% salt solution. After 1000 hour test completed the component was removed from the chamber for inspection. Inspection method included visual and magnified scope.

Salt Fog Test Results: Inspection revealed no measurable degree of deterioration, discoloring or degradation to the RPM coating or the steel component. The RPM coating provided remarkable protection and corrosion resistance.

Grade: 100% Protection/Durability

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Test: Acid Exposure

Purpose: Expose RPM Treated component to Hydrochloric acid solution.

Duration: .5 hour

Procedure: Component placed in sealed chamber and exposed to a diluted solution of 38% Hydrochloric acid. While Hydrochloric acid is often used to treat metal, the diluted solution of Hydrochloric acid will quickly rust mild steel components. The treated component was exposed to an intermittent spray of the acid solution for .5 hours. Upon completion of test, the component was removed for a complete inspection.

Acid Exposure Test Result: Inspection revealed no measurable degree of deterioration, discoloring or corrosion. Acid solution remained on surface of component with no measurable penetration of RPM Coating. ***Acid neutralized prior to the remaining test procedures.**

Grade: 100% Protection/Durability

Test: Abrasive (Impact)

Purpose: Expose RPM to simulated abrasive materials

Duration: 1 Hour

Procedure: Component placed in sealed chamber and exposed to a variety of materials for 1 hour. Materials included in the test: ground glass, sand and rock. Abrasive material applied to RPM Treated component at 30psi from a distance of 17mm.

Abrasive Test Result: RPM material was not removed or damaged during testing, no visible signs of damage or pitting in material or on the component.

Grade: 100% Durability

Test: Salt Spray Test (92% Solution)

Purpose: Expose RPM Treated component to a salt spray solution containing 92% Brine solution.

***Note:** This is an extremely high solution of salt saturation, 60% is the common test solution.

Duration: 60 hours @ 15 psi spray pressure @ 60% Humidity

Procedure: RPM treated component placed in salt spray chamber containing a 92% Brine solution. Component exposed to 92% salt solution for 60 hours with a 15 psi spray pressure during the test.

92% Salt Spray Test Results: Inspection revealed no measurable degree of deterioration, discoloring or corrosion. The 92% solution is a highly concentrated salt solution with properties to quickly corrode bare metal. Upon completion of 60 hours with the 92% salt spray test, the RPM treatment provided excellent protection from the solution.

Grade: 100% Protection/Durability

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Conclusion: The validation test for RPM (Rust Prevention Magic) was conducted independently from ECS Automotive. The above testing focused on the use of the product for the Classic Automotive and Motorcycle Restoration Market. RPM successfully passed each test conducted including Thermal Shock, Salt Fog, Acid Exposure and Salt Spray. The test component was treated prior to the first test conducted and did not receive any additional treatments during the remainder of the test. Upon completion of each group of test the component received a complete inspection for deterioration, discoloring and corrosion; the RPM Treated component passed each test providing remarkable protection for the steel component used in the test.

RPM has proven to be an excellent product and based on the test results, it is my opinion that RPM will provide and exceed the necessary protection required for the preservation of a restored or original classic car under normal conditions. The test parameters listed above exceed the conditions that most restored automobiles will be exposed to. Based on the test results, inspections and observations RPM would be an excellent product for several industries including Marine applications, Stainless Steel Protection and tool steel coatings, and several applications for long term storage of materials prone to corrosion.

Product Information:
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