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Comparing Chemetall Protexo 1125 to VpCI-325 on Connecting Rods

To: Matt Richey

For: Customer

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Project #: 16-226-1825.bis

Results reported by:

A handwritten signature in black ink that reads "Eric Uutala".

Eric Uutala
Technical Service Manager



Background:

The customer is a world leader in the design, manufacture, and supply of metal-formed components and assemblies for powertrain applications. The customer manufactures connecting rods, and utilizes Chemetall Protexo 1125 as a rust preventive liquid. The efficacy of this product will be evaluated and compared to VpCI-325.

Sample Received:

Nine sintered metal connecting rods
Chemetall Protexo 1125 liquid

Method:

Large Environmental Chamber

Materials:

Sintered metal connecting rods
Chemetall Protexo 1125
VpCI-325 (batch #192116)

Procedure:

- 1) Nine connecting rods were visually inspected prior to testing.
- 2) After inspection, the connecting rods were prepared as follows:
 - a. Three connecting rods were not treated, and were used as controls.
 - b. Three connecting rods were coated with Chemetall Protexo 1125.
 - c. Three connecting rods were coated with VpCI-325.
 - i. The six treated connecting rods were hung to dry overnight.
 - d. All nine connecting rods were then hung in the large environmental chamber.
- 3) Connecting rods were visually inspected periodically.
- 4) After 744 hours, all connecting rods were removed from the large environmental chamber.
- 5) Connecting rods were visually inspected and photographed.

Results:

Treatment	Time to Failure (Hours)
None (Control)	72*
Chemetall Protexo 1125	336
VpCI-325	720*

*First sign of corrosion was observed on a Monday morning.

Photos: See below.



Photo 1: Control connecting rods, after 744 hours in accelerated corrosion testing.



Photo 2: Protexo 1125 treated connecting rods, after 744 hours in accelerated corrosion testing.



Photo 3: VpCI-325 treated connecting rods, after 744 hours in accelerated corrosion testing.

Interpretations:

After 744 hours of accelerated corrosion testing, VpCI-325 provided superior rust protection, compared to Chemetall Protexo 1125. The initial onset of corrosion for connecting rods protected with Protexo 1125 was 336 hours. Conversely, VpCI-325 lasted more than twice as long before the initial onset of corrosion.