



## COMPONENT CORROSION TEST

## Application

This test procedure is used to evaluate the corrosion performance of coatings applied to components. It is designed to simulate the corrosive conditions of the Arizona Proving Ground (APG) Vehicle Accelerated Corrosion Test (CETP 00.00-R-311).

## Apparatus Required

## Automatic Method:

## Humidity Cabinet

Thermotron Industries  
291 Hollen Park Drive  
Holland, MI 49423  
(616) 392-1491

Automated Cyclic Corrosion Test Chamber, model ACT-30-CHM-1, or equivalent, with forced air circulation, temperature control of  $\pm 2^{\circ}\text{C}$  to  $65^{\circ}\text{C}$  and relative humidity control of  $\pm 2\%$  up to 90%.

## Manual Method:

## Humidity Cabinet

Thermotron Industries  
291 Hollen Park Drive  
Holland, MI 49423  
(616) 392-1491

Model No. SE-600, or equivalent with forced air circulation, temperature control of  $\pm 2^{\circ}\text{C}$  to  $65^{\circ}\text{C}$  and relative humidity control of  $\pm 2\%$  up to 90%.

## Materials Required

## Tank

Polyethylene or plastic-lined tank, with cover, of sufficient size and capacity to permit the test samples to be sprayed with the salt solution. For 100 x 300 mm test panels a 42 L Nalgene polyethylene tank (VWR Catalog No. 60463 - 040) is adequate.

## Brush

Camel hair brush, flat style (VWR Catalog No. 17215-067, or equivalent).

## Towels

Paper or cloth.

| Date       | Action    | Revisions                               |
|------------|-----------|-----------------------------------------|
| 2005 03 08 | Revised   | Automatic/Manual Cabinet test procedure |
| 2004 07 02 | Activated |                                         |



**Sodium Chloride**

Reagent grade.

**Hydrochloric Acid**

Reagent grade.

**Sodium Hydroxide**

Reagent grade.

**Distilled or Deionized Water**

10-ppm max dissolved solids per ASTM D 1888.

**Kaolin**

Powder, N.F. grade.

**Stop-off Lacquer**

Microshield Stop-off Lacquer, or equivalent.

Source: Pyramid Plastic  
Tolber Division  
P.O. Box 704  
Hope, Arkansas 71802-0704  
Telephone: (501) 777-3251 or 5759

**Components:**

The components should be positioned as close to vehicle orientation as possible.

**Sample Preparation:**

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 °C and 50 +/- 5% relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

In order to simulate dust contamination, load a camel hair brush with a small amount of dry kaolin powder and lightly brush it on the painted surfaces to obtain a uniform, thin, dry coating. (Remove kaolin from any masked areas.) The application of kaolin shall occur only once (prior to testing).

(Optional) In instances of extended testing or for paint-coating systems that do not resist corrosive attack at the edges, it may be necessary to mask the edges and holes of the sample parts and the holes, edges and backs of panels with an air-dry stop-off lacquer. The requesting Engineering Activity shall denote such masking on the Laboratory Test Request. Allow drying for twenty-four hours.

