

**FLUID RESISTANCE OF CHASSIS AND EXTERIOR MATERIALS
FOR INCIDENTAL EXPOSURE****Application**

This method is used to determine the resistance of parts and materials to incidental contact or occasional exposure to automotive fluids. It is not intended to test for the effects of prolonged contact. This method applies to painted steel, painted plastic, mold-in-color or natural color plastic parts, and elastomers. Referencing specifications will need to indicate evaluation Method A, Method B, or both.

Apparatus Required**Mechanical Convection Oven**

Capable of maintaining 50 +/- 2 °C.

Burette with Support or Disposable Syringe**Test Fluids**

For Chassis Parts use:	For Body and Exterior Trim use:
Gasoline: Any commercially available lead free product with 20% laboratory grade ethanol.	Gasoline: Any commercially available lead free product with 20% laboratory grade ethanol.
Diesel: Any commercially available low sulfur diesel, Grade 2 with 20% (by volume) biodiesel added.	Diesel: Any commercially available low sulfur diesel, Grade 2 with 20% (by volume) biodiesel added.
Coolant: Motorcraft full OAT 1:1 dilution (orange)	Coolant: Any commercially available full OAT coolant (diluted per instructions if purchased as concentrate).
Engine Oil: Any commercially available engine oil meeting the latest API-ILSAC requirements.	Engine Oil: Any commercially available engine oil meeting the latest API-ILSAC requirements.
	Deionized Water
	Multipurpose Cleaner (Example: Formula 409, Fantastic, Armor All)
Optional Fluids (Dependent on part location)	Windshield Washer Fluid: Methanol 1:1 with water Ethanol 1:1 with water
Transmission Fluid (Mercon or Motorcraft brand)	Bug and Tar Remover: Any commercially available product
Battery Acid (6% by weight H ₂ SO ₄)	Glass cleaner: Any commercially available product
Brake Fluid (DOT 3 or DOT 4)	Isopropyl alcohol 1:1 with water

Note: Referencing specifications may add additional fluids.

Date	Action	Revisions	Rev. 03
2018 04 18	Revised	Updated Fluids	C. Moghadam, NA & Grace Xu, APA
2017 02 16	Revised	Editorial to Step 4.	A. Beaume, NA
2006 11 17	Activated		A. Wedepohl



For Underhood Parts use:	
Gasoline: Any commercially available lead free product with 20% laboratory grade ethanol.	
Diesel: Any commercially available low sulfur diesel, grade 2 with 20% (by volume) biodiesel added. (any commercially available type)	
Coolant: Motorcraft full OAT 1:1 dilution (orange)	
Engine Oil: Any commercially available engine oil meeting the latest API-ILSAC requirements.	
Windshield Washer Fluid: Methanol 1:1 with water Ethanol 1:1 with water	
Transmission Fluid (Mercon or Ford brand)	
Battery Acid (6% by weight H ₂ SO ₄)	
Brake Fluid (DOT 3 or DOT 4)	
Deionized Water with 3% sodium chloride (w/w)	

Conditioning and Test Conditions

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.

Procedure

1. Place the test specimen to be tested into a mechanical convection oven for a minimum of 30 minutes at 50 +/- 2 °C.
2. Immediately after removing the specimen from the oven, place it on a 10° incline and drop 5 mL of test fluid onto the hot surface in short intervals within one minute. Wait 5 minutes before proceeding to Step 3.
3. Store the test specimen horizontally at 23 °C for the next 24 h.
4. Repeat steps 1-3 two more times after intervals of 24 h by dropping the test fluid onto exactly the same spot each time for a total of three applications of the test fluid.
5. Evaluate the specimen after 72 h from the conclusion of the third test cycle. The specimen can be washed with mild soap and water using a minimal amount of rubbing to remove any residual test fluid.

Note: For dynamic seals, CPSC 01.07.02 or other samples where the fluid will not pool on the sample due to size or shape considerations, the drop method in Step 2 may be replaced by a 5 second immersion followed by a 5 second run off period. Use an approximately 100 mm long sample and submerge 50 mm of the length in the test fluid for 5 seconds. Allow excess fluid to run off the sample for 5 seconds before starting Step 3.