

BOILING POINT OF BRAKE FLUID**Application**

This procedure defines laboratory equipment and techniques for determining the boiling point of brake fluid. The extreme hygroscopic nature of this fluid requires that precautions be taken in tank car or assembly plant drum stock sampling.

Apparatus Required (See Drawing)**Liebig Condenser**

200 mm jacket length, equipped with drip tip male ground glass joint.

Flask

Pyrex Distilling, according to ASTM D 1120-65.

Precision Full Control Electric Heater

Capable of ensuring that boiling point is reached in the specified time.

Rubber Cooling Hose**Boiling Stones****Support Stand**

With rectangular base and clamp holder and clamps.

Wire Gauze Squares

Chromel with asbestos centers, size 125 x 125 mm.

Thermometer

ASTM-3C, general type, 8 cm immersion, range - 5 to + 400 °C (see evaluation).

Graduated Measuring Cylinders

Cone shaped, single metric scale, capacity 60 mL.

Solvent Required

Acetone - to clean and dry flasks and condenser. (This is flammable.)

Date	Action	Revisions
2001 01 29	Revised	Editorial – no technical change A. Cockman
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Sampling and Cleaning of Test Equipment

1. Clean and rinse the sampling container and cap with acetone. Dry with compressed air.

To clean and dry sampling containers and test equipment, use acetone M-1021- B-CP and clean, dry, oil-free compressed air that has passed through a laboratory type chemical drying agent only. (Do not use water, alcohols or other type solvents. Do not use compressed air from a source that has an oiler in the line). Used acetone is to be discarded to avoid reuse.
2. At the dispensing point, remove the cap and rinse the sampling container and cap with brake fluid taken from the sampling point. Discard the rinsed brake fluid. Fill the sampling container and allow it to overflow slightly. Cap the container and keep it capped until ready for testing.
3. Clean the flask and boiling stones, thermometer and the interior of the condenser chimney with acetone and dry with compressed air. Then clean and dry the graduated cylinder.
4. With brake fluid from the sample container, flush the flask, thermometer bulb end and the graduated cylinder. (Do not flush the condenser with brake fluid as the film may absorb atmospheric moisture during the assembly and heat-up period). Discard the used brake fluid.

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. Insert the thermometer through the side tube. Bulb tip should be positioned centrally 6.5 mm from the bottom. Ensure that there is a good seal between the thermometer and the flask. Do not allow the thermometer to touch the side walls of the flask.
2. Place a 60 mL sample of brake fluid with dry boiling stones in the flask.
3. Mount the flask on an asbestos centered wire gauze and hold the whole assembly in place with a clamp. The wire gauze is not required if the heater top is so designed as to prevent the flask from touching the electric coils.
4. Turn on the condenser water prior to heating.