

STEAM EMULSIFICATION TEST ON OILS**Application**

This method is used to determine the resistance to emulsification with water of turbine, hydraulic and quenching oils.

Apparatus and Materials Required (See Sketch)**Graduated Measuring Cylinder**

250 mL, approx 40 mm dia, heat resistant, tall form, with round bottom (A).

Delivery Tube

Glass, 7 mm inner dia (B) 60° angle on the immersed end (H).

Distillation Flask

1000 mL, copper/pyrex (C) or equivalent.

Column

7 mm inner dia, approx 1 m in length (D).

Retort Stands and Clamps (F)**Bunsen Burner (G)****Demineralised Water****Chromic Acid****Acetone****Stop Watch****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.

Date	Action	Revisions
2001 07 23	Revised	Editorial – no technical change A. Cockman
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Procedure

1. Clean the measuring cylinder and glass tubing first with acetone and then with chromic acid and rinse free of acid with demineralised water.
2. Pour 50 mL of demineralised water and 100 mL of the oil under test into the measuring cylinder and heat in a water bath at a temperature of 100 °C for 10 minutes.
3. After removing, clamp the measuring cylinder on the retort stand and immerse the glass tubing (B) into the water and pass steam for a period of 10 minutes.
4. Remove the glass tubing and again heat the measuring cylinder in the water bath at a temperature of 100 °C for another 10 minutes.

Evaluation

Immediately after removal from the water bath, examine and record as follows:

No emulsification	A clear separation line between non-emulsified oil and water.
Light emulsification	A fine foamy oil emulsion layer of maximum 2 mm thickness between oil and water.
Heavy emulsification	The oil emulsion layer exceeds the thickness of 2 mm, or the total oil is emulsified with water.

Note: A coarse foamy layer is not considered to be an emulsification of the oil with water and as such is not reported.

Chemicals, materials, parts, and equipment referenced in this document must be used and handled properly. Each party is responsible for determining proper use and handling in its facilities.