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Standard Method of Test for

STEAM EMULSION OF ELECTRICAL INSULATING OILS OF PETROLEUM ORIGIN¹



ASTM Designation: D 1935 - 65

ADOPTED, 1965.

This Standard of the American Society for Testing and Materials is issued under the fixed designation D 1935; the final number indicates the year of original adoption as standard or, in the case of revision, the year of last revision.

Scope

1. (a) This method covers a procedure for the approximate evaluation of the ability of insulating oils of petroleum origin to separate from water.

(b) The test may be used to indicate the presence of contaminants such as metallic soaps, asphaltic material, etc., in insulating oils.

Summary of Method

2. Steam is passed into 20 ml of oil at such a rate that the steam condenses and agitation is sufficient to emulsify the oil-condensate mixture.

Definition

3. *ASTM Steam Emulsion Number* (S.E. No.) is the number of seconds for 19 ml of the oil to separate under definitely prescribed conditions.

¹ Under the standardization procedure of the Society, this method is under the jurisdiction of the ASTM Committee D-27 on Electrical Insulating Liquids and Gases.

Apparatus²

4. (a) *Steam Generator*.—The steam generator, *A*, (Fig. 1) shall be a glass flask having a capacity of not less than 1 liter, and shall be capable of withstanding the heat necessary for continued use in the production of steam. It shall be fitted with a cork stopper having two close-fitting holes for tubes *C* and *D*.

(b) *Baths*.—The emulsifying bath, *E*, and separating bath, *F*, shall be heavy-walled beakers or jars having a capacity of 3 to 3.5 liters and a depth of 19 to 23 cm (7.5 to 9 in.). Wooden or metal supports, *K* and *L*, shall be provided to hold the oil container and thermometers suspended in a vertical position in the bath.

(c) *Oil Container*.—The oil container, *H*, shall be a test tube 200 mm in length and approximately 23 mm in internal diameter, with a wall thickness of 0.8 to

² The apparatus described can be secured from most laboratory supply companies either as a unit or as individual components.