

ACCELERATED AGING OF PETROLEUM DISTILLATE FUEL

1. OUTLINE OF METHOD

1.01 A measured quantity of the fuel is filtered, heated, cooled, and filtered again. The final filter is compared to a set of standards to obtain a numerical rating.

1.02 When this Appendix is reissued, the reason for reissue will be listed in this paragraph.

2. APPLICABILITY

2.01 This method is applicable to all petroleum distillate fuels.

3. APPARATUS

3.01 *List of Apparatus:*

(1) **Vacuum Filtration Apparatus:** Use a No. 1 Whatman 42.5 millimeter diameter filter paper disc in either a Buchner funnel or Millipore filter holder. The Millipore filter holder is available from Millipore Corporation, Bedford, Massachusetts 01730 under the name Pyrex Filter Holder, catalog number XX10 047 00.

(2) **Oil Bath:** The oil bath shall be filled with silicone oil and have temperature controls capable of one degree C precision. The silicone oil is available as DC550 from Dow Corning Corporation, Midland, Michigan 48640.

(3) **Standard Reference Chart:** This chart is a part of DuPont Method No. F21-61 available from Petroleum Chemicals Division, The DuPont Company, Wilmington, Delaware 19898.

4. PROCEDURE

4.01 The entire procedure must be carried out in a fume hood. Set up for filtration. Filter 50 cubic centimeters of the well-shaken sample fuel using a vacuum level of approximately 16 inches of mercury. Pour filtrate into a 2.5 by 20 centimeter test tube and place the tube in the oil bath for 90 plus or minus 2 minutes. The temperature of the oil bath must be maintained at $149 \pm 2.8^{\circ}\text{C}$ ($300 \pm 5^{\circ}\text{F}$).

4.02 Remove the tube and allow it to cool to room temperature. Filter the specimen as above. Wash the residue on the filter with petroleum ether and allow to dry in air. Compare the dry filter with the standard chart.

4.03 A sample having a filter disc matching standard disc No. 7 or lower is generally considered as passing the test. The oxidation rating is from No. 1 through No. 20. (See Table B.)

4.04 Do not flush sample fuel, washings, or filtrate into the sewer system; retain in a safety can for noncontaminating disposal.

NOTICE

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