DIRECTIONS FOR TEST NO. 14-23-41

SUBJECT: Pour Point of Liquid Aroclors

METHOD: A.S.T.M. D 97-39

Apparatus

Apparatus consists of test jar, thermometer, cork, jacket, disk, gasket, and bath as described under D97-39. The thermometer is the A.S.T.M. Cloud and Pour Test, range -38 to 50°C. Present apparatus is the Emil Greiner Co. #GR 2234 single unit with GR 2242 test jar.

Procedure for Aroclor 1254

Follow D97-39 in all respects except that the centigrade scale is substituted. Only an outline follows: Pour the Aroclor into the test jar to the mark. Adjust thermometer to center of jar with beginning of capillary 1/8 inch below surface of the Aroclor. Warm the Aroclor without stirring to 46°C. in a bath at 46-48°. Cool to 32°C. in air or water bath at 25°C. Transfer to the jacket of the cooling bath at 0 to 3°C.

Beginning at 18°C., at each interval of 2°C., remove the test jar from the jacket and tilt just enough to determine if there is movement of the Aroclor. This inspection should not require more than 3 seconds. When movement is not promptly apparent, the test jar should be held in a horizontal position for exactly 5 seconds as noted by a stop watch. If movement occurs, immediately return the test jar to the jacket.

Repeat test for flow at the next temperature 2°C. lower. Continue the test in steps of even degrees centigrade (14, 12, 10, etc.) until the Aroclor shows no movement when the test jar is held horizontally for exactly 5 seconds. This is the solid point.

The pour point is the previous temperature, 2°C. above the solid point. The pour point is thus the lowest temperature at which the liquid will flow or pour under the test conditions.

Technicians must familiarize themselves with D97-39 which gives complete details of apparatus and procedure, reproducibility of results, effects of thermal history, etc. The directions above are inadequate except as a working outline.

Procedure for Aroclor 1260 and others

Aroclor 1260 is tested as above except that the test jar at 46°C. is transferred directly to the jacket without the preliminary cooling to 32°C. Observations for flow are made at 2°C intervals beginning at 40°C.

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For determining the pour point of Aroclor 1248 or 1242, changes from bath to bath should be made as described in D97-39.

Cooling Bath

The usual bath at 0-3°C. is maintained by means of ice, sodium chloride, and water. Where baths at lower temperatures are required for the lighter Aroclors these should be prepared in steps of about 16-17°C., using freezing mixtures and temperature ranges shown in D97-39. A mixture of solid carbon dioxide and alcohol may also be used to attain the various bath temperatures. The solid CO^2 may be bought locally or obtained by inverting a cylinder of liquid carbon dioxide and drawing off the desired quantity into a chamois skin bag. The bath temperature is controlled at the desired temperature by adding small pieces of the dry ice, as required, after the test temperature has been obtained.

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