

Date: 3/11/53 Material: Arcelors, Pyranols, Method No. 10,115-53
By: SE,NPA:SMK Inerteen P.O.P.O. W.G.K. Dept. No. 246
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Introduction:

The pour point of a product is the lowest temperature at which the material will flow (or pour) when it is chilled under definite prescribed conditions listed in 1949 Book of A.S.T.M. Standards, Part 5, p. 736-739, A.S.T.M. Designation D-97-47. A slightly modified procedure is employed for the W.G.K. Plant Laboratory tests.

Procedure:

1. Pour the product to be tested into a clean, dry 100-ml. Nessler tube to a height of 2 inches.
2. Insert a cork carrying a thermometer of suitable range and adjusted so that the thermometer is in the center of the tube and the capillary is 1/8 inch below the surface of the material.
3. Prepare the cooling bath in a 600-ml. beaker. Choose the cooling medium from the table at the end of this method.

NOTE: Keep the bath 8 - 10°C. below the expected pour point.

4. Place the sample tube and thermometer assembly (Step 2) in a glass container large enough to permit 1/4 inch air space around the

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Nessler tube. The Nessler tube must also be insulated from the bottom of this outer container by means of a cork or wad of cotton.

5. Adjust the sample tube in the outer container and place the assembly (Step 4) in the cooling bath (Step 3).

NOTE: Direct contact of the Nessler tube with the cooling medium must be avoided to prevent rapid cooling of the test sample - hence the outer container.

6. Allow the sample to cool. Then beginning at a point of 10°C. above the expected pour point, remove the sample tube at intervals of every 2 even degrees and tilt it just enough to ascertain whether there is a movement in the material. Do this operation quickly and return the sample to the bath at once.
7. Continue the examination until a point is reached at which the meniscus of the product under the test does not move in the tube when held in a horizontal position for 5 seconds. Record the temperature at this point.

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NOTE: Care should be taken to see that the products with exceptionally low pour points are not cooled too quickly. In this instance use a preliminary cooling bath to partially cool the sample and another bath to complete the solidification.

Report as the pour point the temperature 2°C. above the temperature recorded in Step 7.

The cooling mediums for the various Aroclors, Pyranols, and Inerteen P.O.P.O. is as follows:

<u>Material:</u>	<u>Approx. Four Point</u>	<u>Cooling Medium</u>	<u>(Range-°C.) Thermometer</u>
Aroclor 1262	37°C.	Water	0 - 110°
Aroclor 1260	30°C.	Ice and water	0 - 110°
Aroclor 1254	10°C.	Crushed ice and water	0 - 110°
Aroclor 1248	-6°C.	Crushed ice and waste HCl	-10 - +10°
Aroclor 1242	-20°C.	Alcohol and solid CO ₂	-60 - +40°
Pyranol 1467	-32°C.	Alcohol and solid CO ₂	-60 - +40°
Pyranol 1470	-44°C.	Alcohol and solid CO ₂	-60 - +40°
Pyranol 1481	-20°C.	Alcohol and solid CO ₂	-60 - +40°
Pyranol 1488	-32°C.	Alcohol and solid CO ₂	-60 - +40°
Inerteen P.O.P.O.	-32°C.	Alcohol and solid CO ₂	-60 - +40°

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