Designation: D 2606 – 94 (Reapproved 2000)

Standard Test Method for Solubility of Pentachlorophenol in Heavy Hydrocarbon Solvents[1,2]

This standard is issued under the fixed designation D 2606; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This test method covers the determination of the solubility of pentachlorophenol wood preservative in heavy hydrocarbon solvent.

1.2 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*

D 86 Test Method for Distillation of Petroleum Products[3]

D 2085 Test Method for Determining Chloride Used in Calculating Pentachlorophenol in Solutions or Wood (Lime Ignition Method)[4]

2.2 *AWPA Standards:*[5]

P8 – 77 Standards for Oil-Borne Preservatives

P9 – 77 Standard for Solvents for Organic Preservative Systems

3. Summary of Test Method

3.1 A weighed amount of hydrocarbon solvent, or a residual fraction thereof, at a specified temperature, is observed for undissolved pentachlorophenol.

4. Significance and Use

4.1 This is a test to determine that the solvent has sufficient solubility for pentachlorophenol to ensure it will remain in solution during treating process and in the treated wood.

5. Procedure

5.1 Add 10 g (±0.1 g) of pentachlorophenol to 90 g (±1.0 g) of hydrocarbon and maintain the mixture at 150°F (65.5°C) with constant stirring for 30 min. If there is visual evidence of undissolved pentachlorophenol remaining at the end of the heating period, regard the petroleum as nonconforming.

5.2 If there is no evidence of undissolved pentachlorophenol and in cases of doubt, cool the solution to 75°F (24°C) and maintain it at this temperature for 4 h. During the first 2 h, stir the solution at intervals of 15 min. During the last 2 h, permit it to stand undisturbed to allow any undissolved pentachlorophenol to settle to the bottom. If a centrifuge is available, the solution may be centrifuged for 10 min as an alternative for the final 2-h period. In either case, a sample of the solution shall be removed from the supernatant liquid and analyzed by Test Method D 2085.

5.3 Add 6 g (±0.1 g) of technical pentachlorophenol (AWPA P8) to the Hydrocarbon Solvent Type A (AWPA P9) fraction undistilled above 500°F from a 100-mL Method D 86 distillation, and maintain the mixture at 150°F with constant stirring for 30 min. After mixing, continue with the test procedure as in 5.1.

5.4 When it is desired to test the maximum solvency of a Hydrocarbon Solvent Type A, prepare a gradient series of penta solutions in 1 % concentration intervals spanning the range of anticipated solvency. When the approximate solvency is estimated using the method in 5.1, if desired, prepare another series to determine the solvency to the nearest 0.1 % by preparing solutions in 0.1 % concentration intervals and proceed as in 5.1.

6. Keywords

6.1 hyrdrocarbon solvent; pentachlorophenol

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[1] This test method is under the jurisdiction of ASTM Committee D-7 on Wood and is the direct responsibility of Subcommittee D07.06 on Treatments for Wood Products.

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[2] This test method is essentially the same as Paragraph 4, "Determination of Pentachlorophenol Solvency in Petroleum" of the American Wood-Preservers' Association Standard A 5 – 91," Standard Methods for Analysis of Oil Preservatives."

[3] *Annual Book of ASTM Standards*, Vol 05.01.

[4] *Annual Book of ASTM Standards*, Vol 04.10.

[5] Available from the American Wood-Preservers' Assn., P.O. Box 286, Woodstock, MD 21163-0286.