Designation: D 2226 – 93 (Reapproved 2002)

Standard Classification for Various Types of Petroleum Oils for Rubber Compounding Use[1]

This standard is issued under the fixed designation D 2226; 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 classification is intended to establish classification and test methods for certain types of oil used in extending and processing styrene-butadiene rubbers (SBR) and butadiene rubbers (BR). Its purpose is for classification only and not for specification.

1.2 *This standard may involve hazardous materials, operations, and equipment. 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 88 Test Method for Saybolt Viscosity[2]

D 92 Test Method for Flash and Fire Points by Cleveland Open Cup Tester[3]

D 97 Test Method for Pour Point of Petroleum Products[3]

D 445 Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (the Calculation of Dynamic Viscosity)[3]

D 611 Test Methods for Aniline Point and Mixed Aniline Point of Petroleum Products and Hydrocarbon Solvents[3]

D 972 Test Method for Evaporation Loss of Lubricating Greases and Oils[3]

D 974 Test Method for Acid and Base Number By Color-Indicator Titration[3]

D 1298 Test Method for Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method[3]

D 1500 Test Method for ASTM Color of Petroleum Products (ASTM Color Scale)[3]

D 2007 Test Method for Characteristic Groups in Rubber Extender and Processing Oils and Other Petroleum-Derived Oils by the Clay-Gel Absorption Chromatographic Method[3]

D 2008 Test Method for Ultraviolet Absorbance and Absorptivity of Petroleum Products[3]

D 2501 Test Method for Calculation of Viscosity-Gravity Constant (VGC) of Petroleum Oils[3]

D 2887 Test Method for Boiling Range Distribution of Petroleum Fractions By Gas Chromatography[3]

2.2 *International Institute of Synthetic Rubber Producers:*

The Synthetic Rubber Manual, 12th Ed., 1992[4]

3. Significance and Use

3.1 The composition of the oil in rubber compounds has a large effect on the characteristics and use of the compounds. This classification divides the oils into broad categories for descriptive purposes.

4. Numbering System

4.1 The description and numbers of polymers and latices including oil extended polymers outlined are in a brochure issued and updated by the International Institute of Synthetic Rubber Producers, Inc. Notes of explanation to cover differences in nomenclature or variations in classifications from ASTM practices are incorporated as necessary.

5. Basis of Classification

5.1 Classification of petroleum oils as used for extending and processing styrene-butadiene rubbers (SBR) and butadiene rubbers (BR) is given in Table 1. Classification is based on results obtained in accordance with Test Method D 2007 and Method D 2501.

6. Test Methods

6.1 The types of petroleum oils listed in Table 1 may be further characterized by testing in accordance with Test Methods D 88, D 92, D 97, D 445, D 611, D 972, D 974, D 1298, D 1500, D 2008, and D 2887.

7. Keywords

7.1 extending oils; petroleum oils; processing oils

[1] This classification is under the jurisdiction of ASTM Committee D11 on Rubber and is the direct responsibility of Subcommittee D11.20 on Compounding Materials and Procedures.

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[2] *Annual Book of ASTM Standards*, Vol 04.04.

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

[4] Available from International Institute of Synthetic Rubber Producers, Inc., 2077 S. Gessner Rd., Suite 133, Houston, TX 77063.

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