National Institute of Standards & Technology

Certificate of Analysis

Standard Reference Material® 1617a

Sulfur in Kerosine

This Standard Reference Material (SRM) is intended for use in the determination of total sulfur in fuel oils or materials of similar matrix. SRM 1617a consists of 100 mL of a regular grade kerosine suitable for use in flue-connected burner appliances and for use in wick-fed illuminating lamps, as described in ASTM D 3699-92 Specification for Kerosine. The certified value, reported as a mass fraction [1], for the sulfur content in SRM 1617a is as follows:

Sulfur Mass Fraction . . . . 0.17307 % ± 0.00034 %

The sulfur content in SRM 1617a was certified using isotope dilution thermal ionization mass spectrometry. Homogeneity testing was performed using x-ray fluorescence spectrometry.

The stated uncertainty is a 95 % confidence interval for the certified value and includes all known sources of random and systematic errors as evaluated according to the ISO Guide [2].

Expiration of Certification: This SRM is valid for three years from the date of shipment from NIST. Should the certified value change before expiration of certification, purchasers will be notified by NIST.

Analyses for certification were performed by W.R. Kelly, R.D. Vocke, A.F. Marlow, and P.A. Pella of the NIST Analytical Chemistry Division.

The statistical analysis was performed by S.B. Schiller of the NIST Statistical Engineering Division.

The supplemental information reported on page two was obtained from physical tests and measurements using ASTM methods and was performed by a commercial firm under contract to the National Institute of Standards and Technology.

The overall direction and coordination of the technical measurements leading to the certification of this SRM was coordinated through the Standard Reference Materials Program by J.S. Kane and B.S. MacDonald.

Gaithersburg, MD 20899
July 17, 1995

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Standard Reference Materials Program

SUPPLEMENTAL INFORMATION

The physical property values given below are not certified but are provided as additional information on the kerosine matrix.

Table 1. SRM 1617a Physical Properties

Test	ASTM Method	Value
Specific Gravity @ 15 °C	D 1298	0.7625 g/cm^3
Flash Point	D 56	55 °C
Pour Point	D 97	< -21 °C
Refractive Index	D 1218	1.4263
Viscosity Kinematic @ 38 °C	D 445	1.47 x 10^{-6} m^2/s (1.47 cSt)
Viscosity Kinematic @ -20 °C	D 445	5.68 x 10^{-6} m^2/s (5.68 cSt)

ASTM Methods Used for Physical Tests:

D 1298-85 (1990)$^{\epsilon 1}$ Practice for Density, Relative Density (Specific Gravity) or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method

D 56-93 Test Method for Flash Point by Tag Closed Tester

D 97-93 Test Method for Pour Point of Petroleum Products

D 445-88 Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)

D 1218-92 Test Method for Refractive Index and Refractive Dispersion of Hydrocarbon Liquids

REFERENCES

[1] Taylor, B.N., Guide for the Use of the International System of Units (SI), NIST Special Publication 811, 1995 Ed., (April 1995).

[2] *"Guide to the Expression of Uncertainty in Measurement"*, ISBN 92-67-10188-9, 1st Ed. ISO, Geneva, Switzerland, (1993).