Designation: D 2916 – 88 (Reapproved 1996)

AMERICAN SOCIETY FOR TESTING AND MATERIALS
100 Barr Harbor Dr., West Conshohocken, PA 19428
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Standard Specification for Isophorone[1]

This standard is issued under the fixed designation D 2916; 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 specification covers isophorone[2] (98 % grade) for use in paint, varnish, lacquer, and related products.

1.2 For specific hazard information and guidance, see the supplier's Material Safety Data Sheet for materials listed in this specification.

2. Referenced Documents

2.1 *ASTM Standards:*

D 268 Guide for Sampling and Testing Volatile Solvents and Chemical Intermediates for Use in Paint and Related Coatings and Materials[3]

D 1078 Test Method for Distillation Range of Volatile Organic Liquids[3]

D 1209 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)[3]

D 1364 Test Method for Water in Volatile Solvents (Karl Fischer Reagent Titration Method)[3]

D 1613 Test Method for Acidity in Volatile Solvents and Chemical Intermediates Used In Paint, Varnish, Lacquer, and Related Products[3]

D 2192 Test Method for Purity of Aldehydes and Ketones[3]

D 4052 Test Method for Density and Relative Density of Liquids by Digital Density Meter[4]

E 1 Specification for ASTM Thermometers[5]

E 300 Practice for Sampling Industrial Chemicals[6]

2.2 *U.S. Federal Specification:*

PPP-C-2020 Chemicals, Liquid, Dry, and Paste: Packaging of[7]

3. Properties

3.1 Isophorone shall conform to the following requirements:

Apparent specific gravity:	
20/20°C	0.921 to 0.923
25/25°C	0.918 to 0.920
Color, Pt-Co scale, max	100
Distillation, °C	
Initial boiling point, min	210
95 % point, max	218
Purity, weight % min	98
Acidity as acetic acid, weight %, max	0.02
Water, weight %, max	0.1

4. Sampling

4.1 Sample the material in accordance with Practice E 300.

5. Test Methods

5.1 The properties enumerated in this specification shall be determined in accordance with the following ASTM test methods:

5.1.1 *Apparent Specific Gravity*—Determine the apparent specific gravity by any method that is accurate to the third decimal place, the temperature of both specimen and water being 20 or 25°C. See either the Specific Gravity section of Guide D 268 or Test Method D 4052.

5.1.2 *Color*—Test Method D 1209.

5.1.3 *Distillation Range*—Test Method D 1078, using an ASTM Solvents Distillation Thermometer 105C having a range from 198 to 252°C and conforming to the requirements in Specification E 1.

5.1.4 *Purity*—Test Method D 2192.

5.1.5 *Acidity*—Test Method D 1613.

5.1.6 *Water*—Test Method D 1364.

6. Packaging and Package Marking

6.1 Package size shall be agreed upon between the purchaser and the supplier.

6.2 Packaging shall conform to applicable carrier rules and regulations or when specified shall conform to Fed. Spec. PPP-C-2020.

7. Keywords

7.1 isophorone; ketones; solvents

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[1] This specification is under the jurisdiction of ASTM Committee D-1 on Paint and Related Coatings and Materials and is the direct responsibility of Subcommittee D 01.35 on Solvents, Plasticizers, and Chemical Intermediates.

Current edition approved March 25, 1988. Published May 1988. Originally published as D 2916 – 70. Last previous edition D 2916 – 84.

[2] This compound is also known under the name 3,5,5-trimethyl-2-cyclohexene-1-one.

[3] *Annual Book of ASTM Standards*, Vol 06.04.

[4] *Annual Book of ASTM Standards*, Vol. 05.02.

[5] *Annual Book of ASTM Standards*, Vol 14.03.

[6] *Annual Book of ASTM Standards*, Vol 15.05.

[7] Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094.