Designation: D4077 – 11

StandardSpecification for Cumene (Isopropylbenzene)[1]

This standard is issued under the fixed designation D4077; 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 cumene (isopropylbenzene).

1.2 The following applies to all specified limits in this specification: for purposes of determining conformance with this specification, an observed value or a calculated value shall be rounded off "to the nearest unit" in the last right-hand digit used in expressing the specification limit, in accordance with the rounding-off method of Practice E29.

1.3 The values stated in SI units are to be regarded as standard. The values given in parentheses are for information only.

1.4 Consult current OSHA Regulations and Supplier's Material Safety Data Sheets, and local regulations for all materials used in this specification.

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D1209 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)

D1492 Test Method for Bromine Index of Aromatic Hydrocarbons by Coulometric Titration

D2710 Test Method for Bromine Index of Petroleum Hydrocarbons by Electrometric Titration

D3160 Test Method for Phenol Content of Cumene (Isopropylbenzene) or AMS (α–Methylstyrene)

D3437 Practice for Sampling and Handling Liquid Cyclic Products

D3760 Test Method for Analysis of Isopropylbenzene (Cumene) by Gas Chromatography

D5386 Test Method for Color of Liquids Using Tristimulus Colorimetry

D7057 Test Method for Analysis of Isopropylbenzene (Cumene) by Gas Chromatography (External Standard)

D7183 Test Method for Determination of Total Sulfur in Aromatic Hydrocarbons and Related Chemicals by Ultraviolet Fluorescence

D7359 Test Method for Total Fluorine, Chlorine and Sulfur in Aromatic Hydrocarbons and Their Mixtures by Oxidative Pyrohydrolytic Combustion followed by Ion Chromatography Detection (Combustion Ion Chromatography-CIC)

E29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications

E298 Test Methods for Assay of Organic Peroxides

E299 Test Method for Trace Amounts of Peroxides In Organic Solvents

2.2 *Other Documents:*

OSHA Regulations, 29 CFR paragraphs 1910.1000 and 1910.1200 [3]

3. Properties

3.1 Cumene (isopropylbenzene) shall conform to the following requirements:

Property	Specifications	ASTM Test Method[A]
Purity, weight %, min	99.92	D3760 or D7057
Alpha-Methylstrene, weight %, max	0.01	D3760 or D7057
Benzene, weight %, max	0.001	D3760 or D7057
Butylbenzenes, weight %, max	0.02	D3760 or D7057
Diisopropylbenzenes, weight %, max	0.002	D3760 or D7057
Ethylbenzene, weight %, max	0.01	D3760 or D7057
Phenols, mg/kg, max	5	D3160, D3760 or D7057
n-Propylbenzene, weight %, max	0.03	D3760 or D7057
Sulfur, mg/kg, max	1	D7183 or D7359
Bromine index, max	100	D1492 or D2710
Appearance	[B]	visual
Color, Pt/Co, max	15	D1209 or D5386
Cumene hydroperoxide, at loading, mg/kg, max	100	E298 or E299

[A] If more than one method is listed for a property, the producer and the user should agree on the referee test method.

[1] This specification is under the jurisdiction of ASTM Committee D16 on Aromatic Hydrocarbons and Related Chemicals and is the direct responsibility of Subcommittee D16.07 on Styrene, Ethylbenzene and C9 and C10 Aromatic Hydrocarbons.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401, http://www.access.gpo.gov.

***A Summary of Changes section appears at the end of this standard**