



Standard Specification for Cumene (Isopropylbenzene)¹

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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 *Units*—The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

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

2. Referenced Documents

2.1 ASTM Standards:²

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 Ultra-violet 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)

D8005 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)

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 1910.1200³

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-Methylstyrene, 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
<i>n</i> -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	D5386 or D8005
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.

^B Clear liquid, free of sediment and haze from 18.3 to 25.6°C.

4. Sampling

4.1 Sample the material in accordance with Practice D3437.

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

4.2 If cumene has been exposed to air, cumene hydroperoxide may be in the sample. Suitable precautions should be exercised for handling cumene that may contain cumene hydroperoxide.

5. Keywords

5.1 cumene (isopropylbenzene); 2-phenylpropane

SUMMARY OF CHANGES

Committee D16 has identified the location of selected changes to this standard since the last issue (D4077-11) that may impact the use of this standard. (Approved June 1, 2016.)

(1) Section 2.1—D1209 removed and D8005 added.

(2) Section 3.1—D1209 removed and D8005 added.

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