



Standard Specification for Cumene (Isopropylbenzene) Manufactured Via a Zeolite Process¹

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1. Scope*

1.1 This specification covers cumene (isopropylbenzene) manufactured using a zeolite catalyst process.

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

¹ This specification is under the jurisdiction of Committee D16 on Aromatic Hydrocarbons and Related Chemicals and is the direct responsibility of Sub committee 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.

(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)

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) manufactured via a catalytic zeolite process shall conform to the following requirements:

Property	Specifications	ASTM Test Method ^A
Purity, weight %, min	99.93	D3760 or D7057
Alpha-Methylstyrene, mg/kg, max	50	D3760 or D7057
Benzene, mg/kg, max	10	D3760 or D7057
Cumene hydroperoxide, at loading, mg/kg, max	100	E298 or E299
Diisopropylbenzenes, Individual Isomer, mg/kg, max	5	D3760 or D7057
Diisopropylbenzenes, Total, mg/kg, max	10	D3760 or D7057
Ethylbenzene, mg/kg, max	50	D3760 or D7057
<i>i</i> -Butylbenzene, mg/kg, max	10	D3760 or D7057
<i>n</i> -Butylbenzene, mg/kg, max	10	D3760 or D7057
<i>s</i> -Butylbenzene, mg/kg, max	20	D3760 or D7057
<i>t</i> -Butylbenzene, mg/kg, max	25	D3760 or D7057
Phenols, mg/kg, max	5	D3760 or D7057
<i>n</i> -Propylbenzene, mg/kg, max	300	D3760, D3160 or D7057
Sulfur, mg/kg, max	0.1	D7183 or D7359
Toluene, mg/kg, max	10	D3760 or D7057
Total Butylbenzenes, mg/kg, max	65	D3760 or D7057

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.