



Designation: D 7125 – 04

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 E 29.

1.3 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

- D 1209 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)
- D 1492 Test Method for Bromine Index of Aromatic Hydrocarbons by Coulometric Titration
- D 2710 Test Method for Bromine Index Petroleum Hydrocarbons by Electrometric Titration
- D 3160 Test Method for Phenol Content of Cumene (Isopropylbenzene) or AMS (α -Methylstyrene)
- D 3437 Practice for Sampling and Handling Liquid Cyclic Products
- D 3760 Test Method for Analysis of Isopropylbenzene (Cumene) by Gas Chromatography
- D 3961 Test Method for Trace Quantities of Sulfur in Liquid Aromatic Hydrocarbons by Oxidative Microcoulometry
- D 4045 Test Method for Sulfur in Petroleum Products by Hydrogenolysis and Rateometric Colorimetry
- D 5386 Test Method for Color of Liquids Using Tristimulus Colorimetry

D 7057 Test Method for Analysis of Isopropylbenzene (Cumene) by Gas Chromatography (External Standard)

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications

E 298 Test Methods for Assay of Organic Peroxides

E 299 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 ⁴
Purity, weight %, min	99.93	D 3760 or D 7057
Alpha-Methylstyrene, mg/kg, max	50	D 3760 or D 7057
Benzene, mg/kg, max	10	D 3760 or D 7057
Cumene hydroperoxide, at loading, mg/kg, max	100	E 298 or E 299
Diisopropylbenzenes, Individual Isomer, mg/kg, max	5	D 3760 or D 7057
Diisopropylbenzenes, Total, mg/kg, max	10	D 3760 or D 7057
Ethylbenzene, mg/kg, max	50	D 3760 or D 7057
<i>i</i> -Butylbenzene, mg/kg, max	10	D 3760 or D 7057
<i>n</i> -Butylbenzene, mg/kg, max	10	D 3760 or D 7057
<i>s</i> -Butylbenzene, mg/kg, max	20	D 3760 or D 7057
<i>t</i> -Butylbenzene, mg/kg, max	25	D 3760 or D 7057
Phenols, mg/kg, max	5	D 3760 or D 7057
<i>n</i> -Propylbenzene, mg/kg, max	300	D 3760, D 3160 or D 7057
Sulfur, mg/kg, max	0.1	D 3961 or D 4045
Toluene, mg/kg, max	10	D 3760 or D 7057
Total Butylbenzenes, mg/kg, max	65	D 3760 or D 7057
Total Cymenes, mg/kg, max	50	D 3760 or D 7057
Total Non-Aromatics, mg/kg, max	150 ^B	D 3760 or D 7057
Total GC Unknowns, mg/kg, max	50 ^C	D 3760 or D 7057
Bromine index, max	25	D 1492 or D 2710
Appearance	^D	visual
Color, Pt/Co, max	10	D 1209 or D 5386

⁴ If more than one method is listed for a property, the producer and the user should agree on the referee test method.

^B All components eluting between toluene and cumene in a non-polar (HP-1 or equivalent) GC analysis (See Test Method D 3760 or D 7057) excluding Ethylbenzene. May include Xylenes.

³ Available from Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.

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.