



Designation: D 5871 – 06

Standard Specification for Benzene for Cyclohexane Feedstock¹

This standard is issued under the fixed designation D 5871; 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 approval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers benzene for cyclohexane feedstock.

1.2 The following applies to all specified limits in this standard: for purposes of determining conformance with this standard, 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 supplier’s Material Safety Data Sheets for all materials used in this specification.

2. Referenced Documents

2.1 ASTM Standards:²

D 848 Test Method for Acid Wash Color of Industrial Aromatic Hydrocarbons

D 852 Test Method for Solidification Point of Benzene

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

D 1685 Test Method for Traces of Thiophene in Benzene by Spectrophotometry

D 3437 Practice for Sampling and Handling Liquid Cyclic Products

D 4017 Test Method for Water in Paints and Paint Materials by Karl Fischer Method

D 4492 Test Method for Analysis of Benzene by Gas Chromatography

D 4735 Test Method for Determination of Trace Thiophene in Refined Benzene by Gas Chromatography

D 5386 Test Method for Color of Liquids Using Tristimulus Colorimetry

D 5453 Test Method for Determination of Total Sulfur in Light Hydrocarbons, Spark Ignition Engine Fuel, Diesel Engine Fuel, and Engine Oil by Ultraviolet Fluorescence

D 5713 Test Method for Analysis of High Purity Benzene for Cyclohexane Feedstock by Capillary Gas Chromatography

D 6875 Test Method for Solidification Point of Industrial Organic Chemicals by Thermistor

D 7011 Test Method for Determination of Trace Thiophene in Refined Benzene by Gas Chromatography and Sulfur Selective Detection

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

2.2 Other Document:

OSHA Regulations, 29 CFR, paragraphs 1910.1000 and 1910.1200³

3. Properties

3.1 Benzene for Cyclohexane Feedstock shall conform to the following requirements:

Property	Specification	ASTM Test Method ⁴
Benzene, min, weight %	99.90	D 5713 or D 4492
Sulfur, max, mg/kg	1.0	D 5453
Thiophene, max, mg/kg	0.6	D 1685, D 4735 or D 7011
Toluene plus methylcyclohexane max, mg/kg	150	D 5713
Methylcyclopentane, max mg/kg	100	D 5713
N-hexane, max, mg/kg	80	D 5713
Acid wash color, max Appearance	pass with 1 _B	D 848
Color, max, Pt-Co scale	10	...
Water (if needed)	(if needed)	D 1209 or D 5386
Solidification point, anhydrous basis, min, °C	5.45	D 4017
		D 852 or D 6875

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

^B Clear liquid free of sediment and haze when observed at 18.3 to 25.6°C (65 to 78°F).

4. Sampling

4.1 Sample the material in accordance with Practice D 3437.

5. Keywords

5.1 benzene; cyclohexane feedstock; purity

³ Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401.

¹ This specification is under the jurisdiction of ASTM Committee D16 on Aromatic Hydrocarbons and Related Chemicals and is the direct responsibility of Subcommittee D16.01 on Benzene, Toluene, Xylenes, Cyclohexane, and Their Derivatives.

Current edition approved Oct. 1, 2006. Published November 2006. Originally approved in 1996. Last previous edition approved in 2004 as D 5871 – 04.

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.