



Designation: D 5309 – 97

Standard Specification for Cyclohexane 999¹

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1. Scope

1.1 This specification covers a grade of cyclohexane identified as “cyclohexane 999.”

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, and local regulations for all materials used in this specification.

2. Referenced Documents

2.1 ASTM Standards:

- D 850 Test Method for Distillation of Industrial Aromatic Hydrocarbons and Related Materials²
- D 1209 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)²
- D 3054 Test Method for Purity and Benzene Content of Cyclohexane by Gas Chromatography²
- D 3437 Practice for Sampling and Handling Liquid Cyclic Products²
- D 4045 Test Method for Sulfur in Petroleum Products by

- Hydrogenolysis and Rateometric Colorimetry³
- D 5386 Test Method for Color of Liquids Using Tristimulus Colorimetry²
- E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications⁴
- 2.2 *Other Documents:*
 - OSHA Regulations, 29CFR, Paragraphs 1910.1000 and 1910.1200⁵

3. Properties

3.1 Cyclohexane 999 shall conform to the following requirements:

Property	Specification	ASTM Test Method
Purity, min, weight %	99.90	D 3054
Benzene, max, mg/kg	50	D 3054
n-Hexane, max, mg/kg	200	D 3054
Methylcyclohexane, max, mg/kg	200	D 3054
Methylcyclopentane, max, mg/kg	150	D 3054
Sulfur, max, mg/kg	1	D 4045
Appearance	^A	—
Color, max, Platinum/Cobalt scale	10	D 1209 or D 5386
Distillation range, including the temperature 80.7°C, at 101.3 KPa (760 mmHg) pressure, max, °C	1.0	D 850

^A Clear liquid free of sediment and haze 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 cyclohexane 999

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.

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² *Annual Book of ASTM Standards*, Vol 06.04.

³ *Annual Book of ASTM Standards*, Vol 05.02.

⁴ *Annual Book of ASTM Standards*, Vol 14.02.

⁵ Available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.