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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:*

¹ This specification is under the jurisdiction of ASTM Committee D-16 on Aromatic Hydrocarbons and Related Chemicals and is the direct responsibility of Subcommittee D16.04 on Benzene, Toluene, Xylenes, Cyclohexane, and Their Derivatives.

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- 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 Methods for ~~Purity and Benzene Content~~ Purity and Benzene Content Analysis 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
- D 6212 Test Method for Total Sulfur in Aromatic Compounds by Hydrogenolysis and Rateometric Colorimetry²
- D 6313 Test Method for Total Sulfur in Aromatic Compounds by Hydrogenolysis and Sulfur Specific Difference Photometry²
- D 6428 Test Method for Total Sulfur in Liquid Aromatic Hydrocarbons and Their Derivatives by Oxidative Combustion and Electrochemical Detection²
- 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 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	4	D 4045
<u>Sulfur, max, mg/kg^A</u>	<u>1</u>	<u>D 4045</u> <u>or D 6212</u> <u>or D 6313</u> <u>or D 6428</u>
Appearance	<u>A</u>	—
Appearance	<u>B</u>	—
Color, max, Platinum/Cobalt scale	<u>10</u>	D 1209 or D 5386
Distillation range, including the temperature 80.7°C, at 101.3 KPa (760 mmHg) pressure, max, ° C	<u>1.0</u>	D 850

^A If more than one method is listed for a property and there is a dispute, the referee method will be agreed upon between the buyer and the seller.

^B 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

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.

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