



Standard Specification for Refined Benzene-535¹

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1. Scope

1.1 This specification covers a grade of benzene known as refined benzene-535.

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 848 Test Method for Acid Wash Color of Industrial Aromatic Hydrocarbons²
- D 850 Test Method for Distillation of Industrial Aromatic Hydrocarbons and Related Materials²
- D 852 Test Method for Solidification Point of Benzene²
- D 1209 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)²
- D 1685 Test Method for Traces of Thiophene in Benzene by Spectrophotometry²
- 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 4492 Test Method for Analysis of Benzene by Gas Chromatography²
- D 4629 Test Method for Trace Nitrogen in Liquid Petroleum Hydrocarbons by Syringe/Inlet Oxidative Combustion and Chemiluminescence Detection³

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 D16.0A on BTX, 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.

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 Document:

OSHA Regulations, 29 CFR, paragraphs 1910.1000 and 1910.1200⁵

3. Properties

3.1 Refined benzene-535 shall conform to the following requirements:

Property	Specification	ASTM Test Method
Purity, min, weight %	99.80	D 4492
Toluene, max, weight %	0.10	D 4492
Sulfur	(if needed)	D 4045
Thiophene, max, mg/kg	1	D 1685
Nonaromatic hydrocarbons, max, weight %	0.15	D 4492
Nitrogen	(if needed)	D 4629
Acid wash color, max Appearance	pass with 1 ^A	D 848
Color, max, Pt–Co scale	20	...
1,4 Dioxane	(if needed)	D 1209 or D 5386
Distillation range including the temperature 80.1 °C at 101.3 kPa (760 mm Hg) pressure, max, °C	1.0 ^B	D 4492
Solidification point, anhydrous basis, min, °C	5.35	D 850
		D 852

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

^BRefer to Method D 850, Sample Section if drying is required.

4. Sampling

4.1 The material shall be sampled in accordance with Practice D 3437.

5. Keywords

5.1 benzene; benzene-535

⁴ Annual Book of ASTM Standards, Vol 14.02.

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

 **D 2359**

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