



Designation: D 2359 – 06

Standard Specification for Refined Benzene-535¹

This standard is issued under the fixed designation D 2359; 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 reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

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 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.4 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:*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 4492 Test Method for Analysis of 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 6069 Test Method for Trace Nitrogen in Aromatic Hydrocarbons by Oxidative Combustion and Reduced Pressure Chemiluminescence Detection

D 6304 Test Method for Determination of Water in Petroleum Products, Lubricating Oils, and Additives by Coulometric Karl Fischer Titration

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

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

E 1064 Test Method for Water in Organic Liquids by Coulometric Karl Fischer Titration

2.2 *Other Document:*

OSHA Regulations, 29 CFR, paragraphs 1910.1000 and 1910.1200³

3. Properties

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

Property	Specification	ASTM Test Method ^A
Purity, min, weight %	99.80	D 4492
Toluene, max, weight %	0.10	D 4492
Sulfur, max, mg/kg	(if needed)	D 5453
Thiophene, max, mg/kg	1	D 1685
Nonaromatic hydrocarbons, max, weight %	0.15	D 4492
Nitrogen, max, mg/kg	(if needed)	D 6069
Water	(if needed)	D 6304 or E 1064
Acid wash color, max	pass with 1	D 848
Appearance	^B	...
Color, max, Pt–Co scale	20	D 1209 or D 5386
1,4 Dioxane	(if needed)	D 4492
Solidification point, anhydrous basis, min, °C	5.35	D 852 or D 6875

^A If more than one method is listed, 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 The material shall be sampled in accordance with Practice D 3437.

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

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 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.

*A Summary of Changes section appears at the end of this standard.