



Designation: D 2359 – 02

## Standard Specification for Refined Benzene-535<sup>1</sup>

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 approval. A superscript epsilon ( $\epsilon$ ) 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 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 Hydrocarbons<sup>2</sup>

D 852 Test Method for Solidification Point of Benzene<sup>2</sup>

D 1209 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)<sup>2</sup>

D 1685 Test Method for Traces of Thiophene in Benzene by Spectrophotometry<sup>2</sup>

D 3437 Practice for Sampling and Handling Liquid Cyclic Products<sup>2</sup>

D 4045 Test Method for Sulfur in Petroleum Products by Hydrogenolysis and Ratemetric Colorimetry<sup>3</sup>

D 4492 Test Method for Analysis of Benzene by Gas Chromatography<sup>2</sup>

D 4629 Test Method for Trace Nitrogen in Liquid Petroleum Hydrocarbons by Syringe/Inlet Oxidative Combustion and Chemiluminescence Detection<sup>3</sup>

D 5386 Test Method for Color of Liquids Using Tristimulus Colorimetry<sup>2</sup>

D 6304 Test Method for Determination of Water in Petroleum Products, Lubricating Oils, and Additives by Coulometric Karl Fisher Titration<sup>4</sup>

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications<sup>5</sup>

E 1064 Test Method for Water in Organic Liquids by Coulometric Karl Fisher Titration<sup>4</sup>

#### 2.2 Other Document:

OSHA Regulations, 29 CFR, paragraphs 1910.1000 and 1910.1200<sup>6</sup>

### 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
Water	(if needed)	D 6304 or E 1064 <sup>A</sup>
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

<sup>A</sup>Test Method E 1064 is the referee test method in case of dispute.

<sup>B</sup>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.

### 5. Keywords

5.1 benzene; benzene–535

<sup>1</sup>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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<sup>2</sup>Annual Book of ASTM Standards, Vol 06.04.

<sup>3</sup>Annual Book of ASTM Standards, Vol 05.02.

<sup>4</sup>Annual Book of ASTM Standards, Vol 05.04.

<sup>5</sup>Annual Book of ASTM Standards, Vol 14.02.

<sup>6</sup>Available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC. 20402.

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