



Designation: D7124 – 24

Standard Specification for Benzene for Use with Zeolite Based Catalysts¹

This standard is issued under the fixed designation D7124; 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 benzene for use with zeolite based catalysts.

1.2 The following applies to all specified limits in this specification: for purposes of determining conformance with this specification, 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 E29.

1.3 Consult current OSHA regulations, supplier’s Safety Data Sheets, and local regulations for all materials used in this specification.

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

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

D848 Test Method for Acid Wash Color of Industrial Aromatic Hydrocarbons

D1492 Test Method for Bromine Index of Aromatic Hydrocarbons by Coulometric Titration

D3437 Practice for Sampling and Handling Liquid Cyclic Products

D4735 Test Method for Determination of Trace Thiophene in Refined Benzene by Gas Chromatography

D5194 Test Method for Trace Chloride in Liquid Aromatic Hydrocarbons

D5386 Test Method for Color of Liquids Using Tristimulus Colorimetry

D5776 Test Method for Bromine Index of Aromatic Hydrocarbons by Electrometric Titration

D5808 Test Method for Determining Chloride in Aromatic Hydrocarbons and Related Chemicals by Microcoulometry

D7011 Test Method for Determination of Trace Thiophene in Refined Benzene by Gas Chromatography and Sulfur Selective Detection

D7183 Test Method for Determination of Total Sulfur in Aromatic Hydrocarbons and Related Chemicals by Ultraviolet Fluorescence

D7184 Test Method for Ultra Low Nitrogen in Aromatic Hydrocarbons by Oxidative Combustion and Reduced Pressure Chemiluminescence Detection

D7359 Test Method for Total Fluorine, Chlorine and Sulfur in Aromatic Hydrocarbons and Their Mixtures by Oxidative Pyrohydrolytic Combustion followed by Ion Chromatography Detection (Combustion Ion Chromatography-CIC)

D7504 Test Method for Trace Impurities in Monocyclic Aromatic Hydrocarbons by Gas Chromatography and Effective Carbon Number

D7536 Test Method for Chlorine in Aromatics by Monochromatic Wavelength Dispersive X-ray Fluorescence Spectrometry

D8005 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)

E29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications

E1064 Test Method for Water in Organic Liquids by Coulometric Karl Fischer Titration

E2680 Test Method for Appearance of Clear, Transparent Liquids (Visual Inspection Procedure)

¹ This specification is under the jurisdiction of ASTM Committee D16 on Aromatic, Industrial, Specialty 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 www.astm.org/contact. For *Annual Book of ASTM Standards* volume information, refer to the standard’s Document Summary page on the ASTM website.

2.2 Other Document:

OSHA Regulations, 29 CFR paragraphs 1910.1000 and 1910.1200³

3. Properties

3.1 Benzene for use with zeolite based catalysts shall conform to this specification (See Table 1):

3.2 See S1 for non-mandatory supplementary requirements.

4. Sampling

4.1 The material shall be sampled in accordance with Practice D3437.

³ Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401, <http://www.access.gpo.gov>.

TABLE 1 Properties of Benzene for Use with Zeolite Based Catalysts

Property	Specification	ASTM International Standard ^A
Benzene, min, mass %	99.8	D7504
Sulfur, max, mg/kg	1.0	D7183
Thiophene, max, mg/kg	0.6	D4735 or D7011
Toluene, max, mass %	0.05	D7504
Nonaromatic hydrocarbons, max, mass %	0.15	D7504
Nitrogen, max, mg/kg	0.5	D7184
Chlorides, max, mg/kg	1	D5194 or D5808 or D7359 or D7536
Appearance, free of haze, particulates or suspended matter particles	pass	E2680
Color, max, Pt–Co scale	15	D5386 or D8005

^A If more than one method is listed for a property the producer and user should agree on the referee method.

5. Keywords

5.1 benzene; purity; zeolite

SUPPLEMENTARY REQUIREMENTS

S1. The following supplementary requirements shall apply only when agreed to by the seller and purchaser in the purchase order or contract.

Property	ASTM International Standard ^A
1,4 Dioxane	D7504
Acid wash color, max	D848
Bromine index, max	D1492 or D5776
Water	E1064

^A If more than one method is listed, the producer and user should agree on the referee method.

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