



Designation: D 2827 – 04

Standard Specification for Styrene Monomer¹

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1. Scope*

1.1 This specification covers styrene monomer.

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*:²

D 1016 Test Method for Purity of Hydrocarbons from Freezing Points

D 1209 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)

D 2119 Test Method for Aldehydes in Styrene Monomer

D 2121 Test Methods for Polymer Content of Styrene Monomer and AMS (α -Methylstyrene)

D 2340 Test Method for Peroxides in Styrene Monomer

D 3437 Practice for Sampling and Handling Liquid Cyclic Products

D 4590 Test Method for Colorimetric Determination of *p*-tert-Butylcatechol in Styrene Monomer or AMS (α -Methylstyrene) by Spectrophotometry

D 5135 Test Method for Analysis of Styrene by Capillary Gas Chromatography

D 5386 Test Method for Color of Liquids Using Tristimulus Colorimetry

D 6229 Test Method for Trace Benzene in Hydrocarbon

solvents by Capillary Gas Chromatography

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

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 Styrene monomer shall conform to the following requirements:

Property	Specification	ASTM Test Method
Purity, min, weight %	99.8 ^A	D 5135
Aldehydes, max, weight % as benzaldehyde	0.0100	D 2119
Peroxides, max, mg/kg as H ₂ O ₂	50	D 2340
Polymer, max, mg/kg	10	D 2121, Test Method A
Inhibitor, mg/kg	10 to 15 (or as required)	D 4590
Ethylbenzene, max, mg/kg	500	D 5135
Benzene, max, mg/kg	1	D 6229
Water	If needed	D 6304 or E 1064
Color, max, Pt/Co scale	10	D 1209
or		
Color, max, Pt/Co scale	15	D 5386

^A The most common impurities can be determined by Test Method D 5135.

NOTE 1—Note that weight percent purity of this specification is equivalent to mole percent purity as determined by Test Method D 1016.

4. Sampling

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

5. Keywords

5.1 specification; styrene; styrene monomer

³ Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401.

¹ This specification is under the jurisdiction of ASTM Committee D16 on Aromatic Hydrocarbons and Related Chemicals and is the direct responsibility of Subcommittee D16.07 on Styrene, Ethylbenzene, and C₉ and C₁₀ Aromatic Hydrocarbons.

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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.