



Designation: D3160 – 20

Standard Test Method for Phenol Content of Cumene (Isopropylbenzene) or AMS (α -Methylstyrene)¹

This standard is issued under the fixed designation D3160; 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 test method covers the determination of phenol in refined cumene (isopropylbenzene) or AMS (α -methylstyrene).

1.2 This test method has been found applicable in the range from 5 to 50 mg/kg of phenol in refined cumene (isopropylbenzene) or AMS (α -methylstyrene). The limit of detection (LOD) is 0.9 mg/kg and the limit of quantitation (LOQ) is 2.9 mg/kg.

NOTE 1—LOD and LOQ were calculated using intermediate precision for the lowest level in the ILS.

1.3 The following applies for the purposes of determining the conformance of the test results using this test method to applicable specifications, results shall be rounded off in accordance with the rounding-off method of Practice E29.

1.4 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

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. For specific hazard statements, see Section 7.*

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.*

¹ This test method is under the jurisdiction of ASTM Committee D16 on Aromatic, Industrial, Specialty 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. Referenced Documents

2.1 *ASTM Standards:*²

D1193 Specification for Reagent Water

D3437 Practice for Sampling and Handling Liquid Cyclic Products

D6809 Guide for Quality Control and Quality Assurance Procedures for Aromatic Hydrocarbons and Related Materials

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

E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method

2.2 *Other Document:*

OSHA Regulations, 29 CFR paragraphs 1910.000 and 1910.1200³

3. Summary of Test Method

3.1 The phenol content of cumene or AMS is determined by the color development of phenol with 4-aminoantipyrine. The sample absorbance is compared to phenol standards at 472 nm on a spectrophotometer.

4. Significance and Use

4.1 This test method is useful in determining phenol in the range from 5 to 50 mg/kg in commercially available cumene or AMS.

4.2 Phenol will inhibit certain reactions involving cumene or AMS.

5. Apparatus

5.1 *Balance*—Any balance capable of measuring weights to the nearest 0.001 g.

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.

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