



Designation: D7871 – 19

Standard Test Method for Analysis of Cyclohexane by Gas Chromatography (Effective Carbon Number)¹

This standard is issued under the fixed designation D7871; 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 the purity of cyclohexane by gas chromatography.

1.2 This test method has been found applicable to the measurement of impurities such as those found in [Table 1](#), which are impurities that may be found in cyclohexane. The impurities can be analyzed over a range of 1 to 400 mg/kg by this method, but may be applicable to a wider range.

1.3 The limit of detection is 1 mg/kg.

1.4 In 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](#).

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

1.6 *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 hazards statements, see Section [8](#).

1.7 *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 [D16.01](#) on Benzene, Toluene, Xylenes, Cyclohexane and Their Derivatives.

Current edition approved Nov. 1, 2019. Published November 2019. Originally approved in 2013. Last previous edition approved in 2018 as D7871 – 18. DOI: 10.1520/D7871-19.

2. Referenced Documents

2.1 *ASTM Standards*:²

[D3437 Practice for Sampling and Handling Liquid Cyclic Products](#)

[D4790 Terminology of Aromatic Hydrocarbons and Related Chemicals](#)

[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](#)

[E355 Practice for Gas Chromatography Terms and Relationships](#)

[E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method](#)

[E1510 Practice for Installing Fused Silica Open Tubular Capillary Columns in Gas Chromatographs](#)

2.2 *Other Standards*:³

[OSHA Regulations, 29 CFR paragraphs 1910.1000 and 1910.1200](#)

3. Terminology

3.1 See Terminology [D4790](#) for definitions of terms used in this test method.

4. Summary of Test Method

4.1 The specimen to be analyzed is injected into a gas chromatograph equipped with a flame ionization detector (FID) and a capillary column. The peak area of each component is

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

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