



Designation: D3620 – 04 (Reapproved 2023)

Standard Specification for Glacial Acetic Acid¹

This standard is issued under the fixed designation D3620; 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 glacial (99.8 %) acetic acid for use in paint, varnish, lacquer, and related products.

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 [E29](#).

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

1.4 *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.*

1.5 For specific hazard information and guidance, see the supplier’s Safety Data Sheet for materials listed in this specification.

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

[D2191](#) Test Method for Acetaldehyde Content of Vinyl Acetate

[D3546](#) Test Method for Formic Acid in Glacial Acetic Acid

¹ This specification is under the jurisdiction of ASTM Committee [D01](#) on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee [D01.35](#) on Solvents, Plasticizers, and Chemical Intermediates.

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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.

[E29](#) Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications

[E180](#) Practice for Determining the Precision of ASTM Methods for Analysis and Testing of Industrial and Specialty Chemicals (Withdrawn 2009)³

[E300](#) Practice for Sampling Industrial Chemicals

[E302](#) Test Methods for Monobasic Organic Acids (Withdrawn 2001)³

[E394](#) Test Method for Iron in Trace Quantities Using the 1,10-Phenanthroline Method

2.2 *U.S. Federal Specification:*

[PPP-C-2020](#) Chemicals, Liquid, Dry, and Paste: Packaging of⁴

3. Properties

3.1 Glacial acetic acid shall conform to the following requirements:

Acetic acid, weight %, min	99.8
Freezing point, °C, min	16.2
Color, Pt-Co scale, max	10
Water content, weight %, max	0.16
Iron, ppm (mg/kg), max	0.40
Acetaldehyde, weight %, max	0.05
Formic acid, weight %, max	0.09

4. Sampling

4.1 The material shall be sampled in accordance with Practice [E300](#).

5. Test Methods

5.1 The properties enumerated in this specification shall be determined in accordance with the following ASTM test methods:

5.1.1 *Purity*—Test Methods [E302](#) estimates the purity from the freezing point.

5.1.2 *Freezing Point*—Test Methods [E302](#).

5.1.3 *Color*—Test Methods [E302](#).

5.1.4 *Water*—Test Methods [E302](#).

5.1.5 *Iron*—Test Method [E394](#), using a 20 mL specimen diluted to 80 mL with water.

³ The last approved version of this historical standard is referenced on www.astm.org.

⁴ Available from DLA Document Services, Building 4/D, 700 Robbins Ave., Philadelphia, PA 19111-5094, <http://quicksearch.dla.mil>.