



Designation: D 3548 – 04

## Standard Specification for Ethyl Acrylate<sup>1</sup>

This standard is issued under the fixed designation D 3548; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope\*

1.1 This specification covers ethyl acrylate (99 % grade) for use in paint, varnish, lacquer, and related products.

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

1.3 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.

1.4 For specification hazard information and guidance, see the Supplier’s Material Safety Data Sheet for materials listed in this specification.

1.5 *This standard may involve hazardous materials, operations, and equipment. This standard does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.* Specific hazard statements are given in 4.1.

### 2. Referenced Documents

#### 2.1 ASTM Standards:<sup>2</sup>

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

D 1364 Test Method for Water in Volatile Solvents (Karl Fischer Reagent Titration Method)

D 1613 Test Method for Acidity in Volatile Solvents and Chemical Intermediates Used in Paint, Varnish, Lacquer, and Related Products

D 3125 Test Method for Monomethyl Ether of Hydroquinone in Colorless Monomeric Acrylate Esters and Acrylic Acid

<sup>1</sup> 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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<sup>2</sup> 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.

D 3362 Test Method for Purity of Acrylate Esters by Gas Chromatography

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications

E 300 Practice for Sampling Industrial Chemicals

#### 2.2 U.S. Federal Specification:

PPP-C-2020 Packaging of Chemicals, Liquid, Dry, and Paste<sup>3</sup>

### 3. Properties

3.1 Ethyl acrylate shall conform to the following requirements:

Purity wt % as ethyl acrylate, min	99.5
Water wt %, max	0.08
Color, Pt-Co scale, max	10 in bulk shipments, 20 in drum shipments
Acidity (free acid as acrylic acid) wt %, max	0.008
Methyl ether of hydroquinone	wppm, min 10 <sup>4</sup>

<sup>4</sup>or as agreed upon between the purchaser and the manufacturer. Lower levels are not recommended for safety reasons.

### 4. Precaution

4.1 Ethyl acrylate samples should be stored in amber bottles or protected from light by other means to aid in preventing polymerization. Keep samples away from heat sources and chemicals that can cause free radical polymerization. Ethyl acrylate can polymerize violently evolving considerable heat. Refer to supplier’s Material Safety Data Sheet.

### 5. Sampling

5.1 The material shall be sampled in accordance with Practice E 300. (See Precaution Section 4.)

### 6. Test Methods

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

6.1.1 *Purity*—Test Method D 3362.

6.1.2 *Water*—Test Method D 1364.

6.1.3 *Color*—Test Method D 1209.

6.1.4 *Acidity*—Determine the acidity in accordance with Test Method D 1613, except multiply the results obtained “as

<sup>3</sup> Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098.

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