



Designation: **E1146–08 E1146 – 16**

## Standard Specification for Muriatic Acid (Technical Grade Hydrochloric Acid)<sup>1</sup>

This standard is issued under the fixed designation E1146; 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 reappraisal. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reappraisal.

*This standard has been approved for use by agencies of the U.S. Department of Defense.*

### 1. Scope\*

- 1.1 This specification covers muriatic acid, also known as technical grade hydrochloric acid.
- 1.2 This specification includes requirements for muriatic acid available commercially in 20° Baumé and 22° Baumé concentration grades.
- 1.3 The values stated in SI units are to be regarded as standard. The values given in parentheses are for information only.
- 1.4 Review the current Material Safety Data Sheets (MSDS)(SDS) for detailed information concerning toxicity, first aid procedures, handling and safety precautions.
- 1.5 The following safety hazards caveat pertains only to the test methods portion, Section 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 and health practices and determine the applicability of regulatory limitations prior to use.*

### 2. Referenced Documents

- 2.1 *ASTM Standards:*<sup>2</sup>
  - E224 Test Methods for Analysis of Hydrochloric Acid
  - E300 Practice for Sampling Industrial Chemicals

### 3. Requirements

- 3.1 Muriatic acid shall conform to the following chemical and physical requirements:

|   | 20° Baumé      | 22° Baumé      |
|---|----------------|----------------|
| Total acidity as HCl, % mass (m/m)<br>(% by weight) | 30.71 to 32.93 | 35.02 to 37.14 |
| Fe, $\mu\text{g/g}$ (ppm)                           | 5 max          | 5 max          |
| Baumé gravity at 15.5/15.5°C                        | 19.60 to 20.80 | 21.90 to 23.00 |

### 4. Sampling

- 4.1 Sample muriatic acid in accordance with the appropriate sections of Practice E300 for simple liquids.
- 4.2 Take composite sample of not less than 1 L.

### 5. Test Methods

- 5.1 Determine the requirements as specified in 3.1 using the test procedures described in Test Methods E224.

### 6. Keywords

- 6.1 muriatic acid; technical grade hydrochloric acid

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee D16 on Aromatic Hydrocarbons and Related Chemicals and is the direct responsibility of Subcommittee D16.16 on Industrial and Specialty Product Standards.

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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.

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