



Standard Specification for Muriatic Acid (Technical Grade Hydrochloric Acid)¹

This standard is issued under the fixed designation E 1146; 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.

This standard has been approved for use by agencies of the 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) 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:*²

E 224 Test Methods for Analysis of Hydrochloric Acid

E 300 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) (% by weight)	30.71 to 32.93	35.02 to 37.14
Fe, µg/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 E 300 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 E 224.

6. Keywords

6.1 muriatic acid; technical grade hydrochloric acid

¹ This specification is under the jurisdiction of ASTM Committee E15 on Industrial and Specialty Chemicals and is the direct responsibility of Subcommittee E15.02 on Product Standards.

Current edition approved April 1, 2008. Published May 2008. Originally approved in 1987. Last previous edition approved in 2002 as E 1146–97(2002).

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.

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



SUMMARY OF CHANGES

Committee E15 has identified the location of selected changes to this standard since the last issue (E 1146–97(2002)) that may impact the use of this standard.

- (1) Updated units of measure to comply with the International System of Units (SI). (3) Added Summary of Changes section.
- (2) Added subsection to Scope stating that the SI units are considered standard.

ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.

This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.

This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (www.astm.org).