



Standard Specification for Sulfuric Acid¹

This standard is issued under the fixed designation E 1011; 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.

^{ε1} NOTE—Editorial changes were made in October 2000.

1. Scope

1.1 This specification covers sulfuric acid suitable for a wide variety of industrial applications.

1.2 The values stated in SI units are to be regarded as the standard.

1.3 *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.*

1.4 Review the current sulfuric acid Material Safety Data Sheet (MSDS) for detailed information concerning toxicity, first-aid procedures, handling, and safety precautions.

2. Referenced Documents

2.1 ASTM Standards:

E 223 Test Methods for Analysis of Sulfuric Acid²

E 300 Practice for Sampling Industrial Chemicals²

2.2 Other Documents:

49 CFR 100 to 199 Department of Transportation Hazard-

ous Materials Regulations³

3. Classification

3.1 60° Baumé (78 %)

3.2 66° Baumé (93 %)

3.3 96 %

3.4 98 %

4. Requirements

4.1 Sulfuric acid shall conform to the requirements in Table 1.

5. Sampling

5.1 Sulfuric acid should be sampled in accordance with Practice E 300.

6. Test Methods

6.1 The material is to be analyzed in accordance with the methods designated in Test Methods E 223.

7. Packaging and Package Marking

7.1 Industrial or commercial quantities shall be packaged and labeled in accordance with DOT Hazardous Materials Regulations 49 CFR 100 to 199 and state and local regulations.

8. Keywords

8.1 sulfuric 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 Oct. 10, 1996. Published February 1997. Originally published as E 1011 – 86. Last previous edition E 1011 – 91.

² *Annual Book of ASTM Standards*, Vol 15.05.

³ *Code of Federal Regulations* available from the Superintendent of Documents, US Government Printing Office, Washington, DC 20402.

TABLE 1 Sulfuric Acid Requirements^A

	60° Baumé (78 %)	66° Baumé (93 %)	96 %	98 %
Total acidity (as H ₂ SO ₄), weight %	77.5 to 80.0	92.5 to 95.0	95.5 to 97.0	97.5 to 100.0
Baumé gravity at 15.5/15.5°C (60/60°F)	59.60 to 61.10	65.88 to 66.23
Specific gravity at 15.5/15.5°C (60/60°F) ^B	1.6979 to 1.7282	1.8326 to 1.8408
Iron (Fe), ppm (µg/g), as shipped	150 max	150 max	40 max	40 max
Arsenic (As), ppm (µg/g)	3 max	3 max	3 max	3 max
Nonvolatile matter, weight %	0.05 max	0.05 max	0.05 max	0.05 max

^A*Appearance*—Sulfuric acid shall be a slightly viscous, colorless to light yellow, clear to slightly turbid liquid, by visual examination.

^BThe specific gravity at 15.5/15.5°C (60/60°F) is calculated from the Baumé value determined in accordance with Test Methods E 223, by the formula: $\frac{145}{145 - B\acute{e}}$.

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