



Standard Specification for Refined Antimony¹

This standard is issued under the fixed designation B 237; 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 refined antimony in ingot, pig, or cake form.

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

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 become familiar with all hazards including those identified in the appropriate Material Safety Data Sheet (MSDS) for this product/material as provided by the manufacturer, to establish appropriate safety and health practices, and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 The following documents of the issue in effect on the date of material purchase form a part of this specification to the extent referenced herein.

2.2 *ASTM Standards:*²

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

E 88 Practice for Sampling Nonferrous Metals and Alloys in Cast Form for Determination of Chemical Composition

3. Terminology

3.1 *Definition of Term Specific to This Standard:*

3.1.1 *cake, n*—the term *cake* as used in this specification is defined as a coalesced mass of antimony powder.

4. Ordering Information

4.1 Orders for refined antimony under this specification shall include the following information:

4.1.1 ASTM designation and year of issue,

4.1.2 Quantity (weight),

4.1.3 Name of material (Refined Antimony),

4.1.4 Size and shape (Section 7),

4.1.5 Grade (Table 1), and

4.1.6 Certification or test report, if specified (Section 14).

5. Materials and Manufacture

5.1 Refined antimony shall be supplied in commercial standard forms (for example, ingots, pigs, or cakes) in the following grades:

5.1.1 Grade A.

5.1.2 Grade B.

5.2 The grades of refined antimony shall be produced by any smelting and refining process from ore or recycled materials to meet the chemical requirements of this specification.

6. Composition

6.1 The refined antimony shall conform to the chemical composition requirements prescribed in Table 1.

7. Sizes and Shapes

7.1 Ingots, cakes, or pigs shall weigh up to a nominal 100 lb (45 kg).

8. Physical Appearance

8.1 The antimony shall be reasonably free from surface corrosion or adherent foreign material.

9. Marking

9.1 A brand by which the manufacturer can be identified shall be cast into each ingot.

10. Sampling for Chemical Analysis

10.1 *Samples*—Ten ingots shall constitute a representative sample of any shipment lot up to 50 000 lb (18 700 kg) or fraction thereof. When a shipment exceeds 50 000 lb, an additional ingot shall be added for each additional 5000 lb (1870 kg) or fraction thereof. In the case of shipment lots of ten ingots or less, each ingot shall be drilled once to provide a sufficient sample for analysis.

10.2 *Drilling*—The ingots shall be sampled by drilling through with a drill ½ in. (2.7 mm) in diameter, in accordance with Practice E 88. The drill shall be cleaned thoroughly before use, and no lubricant shall be used in drilling. Each sample

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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.

TABLE 1 Chemical Composition Requirements^A

Element	Composition, weight, %	
	Grade A	Grade B
	UNS M00998	UNS M00995
Arsenic, max	0.05	0.10
Sulfur, max	0.10	0.10
Lead, max	0.15	0.20
Other elements (for example, iron, copper, tin, silver, nickel) each, max	0.05	0.10
Antimony (by difference), min	99.80	99.50

^A For purposes of acceptance and rejection, the observed value or calculated value obtained from analysis should be rounded to the nearest unit in the last right-hand place of figures, used in expressing the specified limit, in accordance with the rounding procedure prescribed in Practice E 29.

ingot shall be drilled through once from top to bottom. One of three ingots shall be drilled centrally, while the other two shall be drilled midway between the center and a corner of the bottom. The drillings shall be made fine, and stray large chips or chunks created in starting a hole shall be discarded. The drillings shall be gone over with a powerful magnet to remove any iron introduced by sampling. The drilling shall be mixed thoroughly.

11. Methods of Chemical Analysis

11.1 The chemical composition enumerated in Table 1 of this specification shall, in case of disagreement, be determined by wet chemical or spectrographic methods mutually agreed upon between the supplier and the purchaser.

11.2 By agreement between the purchaser and the supplier, analyses may be required and limits established for elements or compounds not specified in Table 1.

12. Inspection

12.1 Inspection of the material shall be agreed upon between the purchaser and the supplier as part of the purchase contract.

13. Rejection and Rehearing

13.1 Material that fails to conform to the requirements of this specification shall be rejected. Rejection should be reported to the supplier promptly and in writing. In case of dissatisfaction with the results of the test, the supplier may make claim for a rehearing.

13.2 Rejection shall be considered as follows:

13.2.1 Variation of weight, quantity, or workmanship, or

13.2.2 Chemical composition.

13.2.2.1 In case of dispute, the material shall be sampled in the presence of both parties in accordance with Section 10.

13.2.2.2 The resulting sample shall be mixed and separated into three equal parts, each of which shall be placed in a sealed package, one for the supplier, one for the purchaser, and one for an umpire, if necessary. The manufacturer and the purchaser each shall make an analysis, and if the results do not establish or dismiss the claim to the satisfaction of both parties, the sample shall be submitted to a mutually agreed-upon umpire. The umpire shall determine the question of fact using an analytical method agreed upon by both parties; the umpire's determination shall be final.

13.3 Where the antimony meets the requirements of these specifications as to chemical composition, it shall not be condemned for defects in manufacturing or for defects in the products or alloys in which it is used.

14. Certification

14.1 When specified in the purchase order or contract, the purchaser shall be furnished certification that samples representing each lot have been tested as directed in this specification and the requirements have been met. When specified in the purchase order or contract, a certified report of the test results shall be furnished.

15. Marking and Special Requirements

15.1 A brand by which the supplier can be identified shall be cast or marked legibly on each ingot. In addition, other markings shall identify the material by grade and lot number.

15.2 Special markings, color code, and other quality requirements not covered by this specification shall be agreed upon between the supplier and the purchaser.

15.3 A Material Safety Data Sheet shall be supplied to the purchaser by the producer or supplier.

16. Keywords

16.1 antimony; cake; chemical analysis; grades; ingot; pig; sampling

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