



Designation: A 922 – 93 (Reapproved 2000)

Standard Specification for Silicon Metal¹

This standard is issued under the fixed designation A 922; 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 approval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers three regular grades of silicon metal designated as Grades A, B, and C.

1.2 The values stated in inch-pound units are to be regarded as the standard. The SI equivalents of inch-pound units given may be approximate.

2. Referenced Documents

2.1 ASTM Standards:

E 11 Specification for Wire-Cloth Sieves for Testing Purposes²

E 29 Practices for Using Significant Digits in Test Data to Determine Conformance with Specifications²

E 32 Practices for Sampling Ferrous Alloys and Steel Additives for Determination of Chemical Composition³

E 50 Practices for Apparatus, Reagents, and Safety Precautions for Chemical Analysis of Metals³

E 60 Practice for Photometric and Spectrophotometric Methods for Chemical Analysis of Metals³

E 360 Test Methods for Chemical Analysis of Silicon and Ferrosilicon⁴

3. Ordering Information

3.1 Orders for material under this specification shall include the following information:

3.1.1 Quantity,

3.1.2 Name of material,

3.1.3 ASTM designation and year of issue,

3.1.4 Grade,

3.1.5 Size, and

3.1.6 Requirements for packaging, analysis reports, etc. as appropriate.

3.2 Although silicon metal is purchased by total net weight, the customary basis of payment is per pound of contained silicon.

4. Chemical Composition

4.1 The grades shall conform to the requirements as to the chemical composition prescribed in Table 1.

4.2 The manufacturer shall furnish an analysis of each shipment showing the silicon content and any other required element.

4.3 Upon request of the purchaser, the manufacturer shall furnish an analysis of any trace elements on a schedule mutually agreed upon between the manufacturer (including their agents) and the purchaser.

5. Size

5.1 The grades of silicon metal are available in sizes listed in Table 2.

5.2 The sizes listed in Table 2 are typical as shipped from the manufacturer's plant. The various grades can exhibit different degrees of friability; therefore some attrition may be expected in transit, storage, and handling. A quantitative test is not available for rating relative friability of silicon metal. A code system has been developed, therefore, for this purpose, and a number rating for each product type is shown in Table 3. Definitions applicable to these code numbers are given in Table 3.

6. Sampling

6.1 The material shall be sampled in accordance with Practices E 32.

6.2 Other methods of sampling mutually agreed upon between the manufacturer and the purchaser may be used; however, in case of discrepancy, Practices E 32 shall be used for referee.

7. Chemical Analysis

7.1 The chemical analysis of the material shall be made in accordance with the procedure for silicon metal as described in Methods E 360 or alternative methods that will yield equivalent results.

7.2 If alternative methods of analysis are used, in case of discrepancy, Methods E 360 shall be used for referee.

7.3 Where no method is given in Methods E 360 for the analysis for a particular element, the analysis shall be made in accordance with a procedure agreed upon between the manufacturer and the purchaser.

¹ This specification is under the jurisdiction of ASTM Committee A-1 on Steel, Stainless Steel, and Related Alloys and is the direct responsibility of Subcommittee A01.18 on Castings.

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² *Annual Book of ASTM Standards*, Vol 14.02.

³ *Annual Book of ASTM Standards*, Vol 03.05.

⁴ *Annual Book of ASTM Standards*, Vol 03.06.