



Designation: A495 – 06

Standard Specification for Calcium-Silicon Alloys¹

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1. Scope*

1.1 This specification covers a standard grade of calcium-silicon, a standard grade of calcium-manganese-silicon, a standard grade of calcium-silicon-barium and a standard grade of ferro-calcium-silicon.

2. Referenced Documents

2.1 *ASTM Standards*:²

A1025 Specification for Ferroalloys and Other Alloying Materials, General Requirements

3. General Conditions for Delivery

3.1 Material furnished to this specification shall conform to the requirements of Specification A1025, including any supplementary requirements that are indicated in the purchase order. Failure to comply with the general requirements of Specification A1025 constitutes nonconformance with this specification. In case of conflict between the requirements of this specification and Specification A1025, this specification shall prevail.

4. Chemical Requirements

4.1 The material shall conform to the requirements as to chemical composition specified in Table 1 and Table 2. The manufacturer shall furnish an analysis of each shipment showing the percentage of each element specified in Table 1.

4.2 For the elements specified in Table 2 an analysis of each lot is not required. Upon request of the purchaser the manufacturer shall supply the results of an analysis for the elements

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

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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 Requirements

Element	Composition, %			
	CaSi	CaSiMn	CaSiBa	FeCaSi
Calcium	28.0 to 32.0	16.0 to 20.0	14.0 to 20.0	14.0 to 18.0
Silicon	60.0 to 65.0	53.0 to 59.0	55.0 to 60.0	53.0 to 59.0
Manganese	...	14.0 to 18.0	...	...
Barium	...	...	14.0 to 18.0	...
Iron	...	...	...	14.0 to 18.0
Aluminum	1.5 max	...	...	...

in Table 2 on a cumulative basis over a period mutually agreed upon by the manufacturer and the purchaser.

5. Size

5.1 Calcium-silicon alloys are available in sizes as listed in Table 3.

5.2 The sizes listed in Table 3 are typical as shipped from the manufacturer's plant. These alloys are friable and some attrition can be expected in transit, storage, and handling. The friability rating for these alloys is Code No. 6, the most friable rating on the scale.

6. Sampling

6.1 Methods of sampling may be agreed upon by the manufacturer and the purchaser.

TABLE 2 Supplemental Chemical Requirements

Element	Composition, Max %			
	CaSi	CaSiMn	CaSiBa	FeCaSi
Carbon	1.00	1.00	1.0	1.0
Sulfur	0.070	0.025	0.050	0.050
Phosphorus	0.050	0.035	0.050	0.050
Titanium	0.20	0.20	0.20	0.20
Aluminum	...	1.5	1.5	1.5
Iron	5.0 max	10.0 max	5.0 max	...

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