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Standard Specification for Ferrovanadium[1]

This standard is issued under the fixed designation A 102; 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 one grade of ferrovanadium.

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

2. Referenced Documents

2.1 *ASTM Standards:*

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications[2]

E 31 Methods for Chemical Analysis of Ferroalloys[3]

E 32 Practices for Sampling Ferroalloys and Steel Additives for Determination of Chemical Composition[3]

E 365 Test Methods for Chemical Analysis of Ferrovanadium and Vanadium Alloying Additives[4]

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 Size, and

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

3.2 Although ferrovanadium is ordered by total net weight, the customary basis of payment is per pound of contained vanadium.

4. Chemical Composition

4.1 The material shall conform to the requirements as to chemical composition specified in Table 1 and Table 2.

4.2 The manufacturer shall furnish an analysis of each shipment showing the elements specified in Table 1.

4.3 The values shown in Table 2 are expected maximums. Upon request of the purchaser, the manufacturer shall furnish an analysis for any of these elements on a cumulative basis over a period mutually agreed upon by the manufac-turer and the purchaser.

TABLE 1 Chemical Requirements[A]

Element	Composition, %
Vanadium,[B]	75-85
Carbon, max	0.75
Silicon, max	1.5
Aluminum	2.0 max
Sulfur, max	0.08
Phosphorus, max	0.08

[A] For the purposes of determining conformance with this specification, the reported analysis shall be rounded to the nearest unit in the last right-hand place of figures used in expressing the limiting value, in accordance with the rounding method of Practice E 29.

[B] For the purposes of determining the vanadium content of any shipment, vanadium shall be reported to the nearest 0.1 %, applying the same rounding procedure as prescribed in Footnote *A*.

5. Size

5.1 The material is typically 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. Ferrovanadium has a friability code number of "1". It is a tough material, susceptible to little, if any, breakage during shipment or handling.

6. Sampling

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

TABLE 2 Supplementary Chemical Requirements[A,B]

Element	Maximum Limits Allowable, %
Chromium	0.50
Copper	0.15
Nickel	0.10
Lead	0.020
Tin	0.050
Zinc	0.020
Molybdenum	0.75
Titanium	0.15
Nitrogen	0.20

[A] See Footnote *A* of Table 1.

[B] The composition of the ferrovanadium shall be within these limits; however, an analysis of each lot is not required. The manufacturer shall supply, upon request, the results of an analysis for these elements on a cumulative basis over a period mutually agreed upon by 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.