Designation: A 481 – 94 (Reapproved 2004)

Standard Specification for Chromium Metal[1]

This standard is issued under the fixed designation A 481; 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.

This standard has been approved for use by agencies of the Department of Defense. This specification replaces Federal Specification QQ-F-145.

1. Scope

1.1 This specification covers two grades of chromium metal designated as A and B.

1.2 The values stated in inch-pound units are to be regarded as the standard.

2. Referenced Documents

2.1 *ASTM Standards:* [2]

E 11 Specification for Wire Cloth and Sieves for Testing Purposes

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

E 31 Methods for Chemical Analysis of Ferroalloys[3]

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

E 363 Test Methods for Chemical Analysis of Chromium and Ferrochromium

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 The customary basis of payments for chromium metal is per pound of alloy.

4. Chemical Composition

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

TABLE 1 Chemical Requirements[A]

Element	Composition, %	
	Grade A	Grade B
Chromium, min	99.0	99.4
Carbon, max	0.050	0.050
Silicon, max	0.15	0.10
Sulfur, max	0.030	0.010
Phosphorus, max	0.010	0.010

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

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 between the manufacturer and the purchaser.

TABLE 2 Supplementary Chemical Requirements[A]

Element	Composition, %	
	Grade A	Grade B
Nitrogen, max	0.050	0.020
Iron, max	0.35	0.35
Manganese, max	0.01	0.01
Hydrogen, max	0.01	0.003
Oxygen, max	0.50	0.10
Vanadium, max	0.050	0.050
Copper, max	0.01	0.01
Molybdenum, max	0.050	0.01
Columbium, max	0.050	0.050
Tantalum, max	0.050	0.003
Cobalt, max	0.003	0.001
Aluminum, max	0.30	0.10
Titanium, max	0.050	0.003
Zirconium, max	0.050	0.003
Arsenic, max	0.005	0.003
Lead, max	0.003	0.001
Tin, max	0.001	0.001
Zinc, max	0.005	0.003
Boron, max	0.005	0.003
Antimony, max	0.005	0.003
Silver, max	0.003	0.001
Bismuth, max	0.003	0.001

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

[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.

[3] Withdrawn.