Designation: ~~B561 – 94 (Reapproved 2018)~~ B561 – 23

Standard Specification for Refined Platinum[1]

This standard is issued under the fixed designation B561; 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 platinum as sponge, cast bar, and wrought forms (Note 1) in two grades as follows:

1.1.1 *Grade 99.95 (UNS PO4995)*—Platinum having a purity of 99.95 %, min, and

1.1.2 *Grade 99.99*—Platinum having a purity of 99.99 % min.

NOTE 1—Other forms of unfabricated platinum of commerce are not to be excluded under this specification.

NOTE 2—For the purposes of determining conformance with this specification, an observed value obtained from 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 off method of Practice E29.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

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 Safety Data Sheet (SDS) for this product/material as provided by the manufacturer, to establish appropriate safety, health, and environmental practices, and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

E29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications
B542 Terminology Relating to Electrical Contacts and Their Use
B899 Terminology Relating to Non-ferrous Metals and Alloys

3. Terminology

3.1 For definitions of the terms pertaining to this standard, reference shall be made to Terminology B542 and B899.

[1] This specification is under the jurisdiction of ASTM Committee B02 on Nonferrous Metals and Alloys and is the direct responsibility of Subcommittee B02.05 on Precious Metals and Electrical Contact Materials and Test Methods.

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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.

4. Materials and Manufacture

4.1 The metal may be produced by any refining process that yields a product capable of meeting the chemical requirements of this specification. The purchaser, upon request, shall be informed of the refining process used.

4.2 The surfaces of bars and wrought forms shall exhibit quality generally acceptable to the trade.

5. Chemical Composition

5.1 The refined platinum shall conform to the chemical composition prescribed in Table 1.

6. Sampling

6.1 The value of this material is such that special attention must be paid to sampling procedures. The purchaser and manufacturer shall agree upon the sampling procedures used.

6.2 *Lot Size*—Sampling lots shall consist of the following:

6.2.1 *Sponge*—A single refining lot, and

6.2.2 *Other Forms*—A single melt or primary consolidation.

7. Methods of Analysis

7.1 Pending the development of standard ASTM methods of chemical or spectrographic analysis, or both, the methods to be used shall be a matter of agreement between the manufacturer and the purchaser.

TABLE 1 Chemical Requirements

Element[A]	Composition, %	
	Grade 99.95 (UNS PO4995)	Grade 99.99
Platinum, min (by difference)	99.95	99.99
Rhodium, max	0.03	0.005
Palladium, max	0.02	0.005
Ruthenium, max	0.01	0.002
Iridium, max	0.015	0.005
Gold, max	0.01	0.005
Silver, max	0.005	0.003
Lead, max	0.005	0.001
Tin, max	0.005	0.002
Zinc, max	0.005	0.002
Iron, max	0.01	0.005
Manganese, max	0.005	0.001
Copper, max	0.01	0.004
Silicon, max	0.01	0.005
Calcium, max	0.005	0.003
Magnesium, max	0.005	0.003
Aluminum, max	0.005	0.004
Nickel, max	0.005	0.001
Chromium, max	0.005	0.001
Antimony, max	0.005	0.002
Arsenic, max	0.005	0.002
Bismuth, max	0.005	0.002
Tellurium, max	0.005	0.004
Cadmium, max	0.005	...
Molybdenum, max	0.01	0.004

[A] By agreement between the manufacturer and purchaser, analyses may be required and limits established for elements or compounds, including ignition loss, not specified in this table.