

Standard Specification for Refined Platinum¹

This standard is issued under the fixed designation B 561; 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.

 ϵ^1 Note—UNS number was added in June 1999.

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 E 29.

1.2 The values stated in inch-pound units are to be regarded as the standard. SI units are provided for information only.

2. Referenced Documents

2.1 ASTM Standards:

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

3. Materials and Manufacture

3.1 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.

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

4. Chemical Composition

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

TABLE 1 Chemical	Requirements
------------------	--------------

Composition, %		, %
Element ^A	Grade 99.95	Grade
	(UNS PO4995)	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

^ABy 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.

5. Sampling

5.1 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.

5.2 Lot Size—Sampling lots shall consist of the following:

5.2.1 Sponge—A single refining lot, and

5.2.2 Other Forms— A single melt or primary consolidation.

Copyright © ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States.

¹This specification is under the jurisdiction of ASTM Committee B-2 on Nonferrous Metals and Alloys and is the direct responsibility of Subcommittee B02.05 on Precious Metals.

Current edition approved Feb. 15, 1994. Published April 1994. Originally published as B 561 - 72. Last previous edition B 561 - 86.

² Annual Book of ASTM Standards, Vol 14.02.

6. Methods of Analysis

6.1 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.

7. Rejection and Rehearing

7.1 Material that fails to conform to the requirements of this specification may be rejected. Rejection should be reported to the producer or supplier promptly and in writing. In case of dissatisfaction with the results of the test, the producer or supplier may make claim for rehearing.

7.1.1 If the platinum satisfies the requirements of this specification, it shall not be rejected for defects in the products in which it is used.

7.2 Investigation of Claims—In a question of chemical composition, a new sample shall be drawn by representatives of both parties in accordance with Section 5. The properly mixed and quartered sample shall be divided into three parts, each of which shall be placed in a sealed package, one for manufacturer, one for the purchaser, and one for an umpire, if necessary.

8. Product Marking

8.1 The material shall be legibly identified by mark, label, or tag with the following information: platinum (Pt), Grade______, lot or melt number, and weight to the nearest 0.001 troy oz (0.03 g).

9. Keywords

9.1 platinum; refined platinum; sponge

ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.

This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.

This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (www.astm.org).