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Standard Specification for Refined Iridium¹

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^{ε1} NOTE—UNS number was added in June 1999.

1. Scope

1.1 This specification covers refined iridium as sponge and powder in two grades as follows:

1.1.1 *Grade 99.80 (UNS PO6100)*— Iridium having a purity of 99.80 %.

1.1.2 *Grade 99.90*— Iridium having a purity of 99.90 %.

NOTE 1—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 method of Practice E 29.

1.2 The values stated 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 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.

4. Chemical Composition

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

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 sampling procedures used.

5.2 Sampling lots shall consist of the following:

5.2.1 *Sponge*—A single refining lot.

¹ This 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.

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² *Annual Book of ASTM Standards*, Vol 14.02.

TABLE 1 Chemical Requirements

Element ^A	Composition, %	
	Grade 99.80 (UNS PO6100)	Grade 99.90
Iridium, min (by difference)	99.80	99.90
Rhodium, max	0.15	0.05
Platinum, max	0.10	0.05
Palladium, max	0.05	0.05
Ruthenium, max	0.05	0.05
Lead, max	0.02	0.015
Silicon, max	0.02	0.01
Tin, max	0.01	0.01
Zinc, max	0.01	0.01
Arsenic, max	0.01	0.005
Bismuth, max	0.01	0.005
Cadmium, max	0.01	0.005
Iron, max	0.01	0.01
Silver, max	—	0.02
Gold, max	—	0.02
Copper, max	—	0.02
Nickel, max	—	0.02
Chromium, max	—	0.02

^A By agreement between manufacturer and purchaser, analyses may be required and limits established for elements or compounds not specified in this table.

5.2.2 *Powder*—A single refining lot.

6. Method 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 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 iridium satisfies the requirements of this specification, it shall not be condemned 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,