Designation: B671 – 81 (Reapproved 2005)

Standard Specification for Refined Iridium[1]

This standard is issued under the fixed designation B671; 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 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 E29.

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.

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

2. Referenced Documents

2.1 *ASTM Standards:*[2]

E29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications

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.

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. 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.

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

[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.

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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.