Designation: B 731 – 96 (Reapproved 2001)

Standard Specification for 60 % Palladium-40 % Silver Electrical Contact Material [1]

This standard is issued under the fixed designation B 731; 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.

1. Scope

1.1 This specification covers 60 % palladium-40 % silver rod, wire, strip, and sheet material for electrical contacts.

2. Referenced Documents

2.1 *ASTM Standards:*

B 476 Specification for General Requirements forWrought Precious Metal Electrical Contact Materials [2]

3. Manufacture

3.1 Raw materials shall be of such quality and purity that the finished product will have the properties and characteristics prescribed in this specification.

3.2 The material shall be finished by such operations (cold working, heat treating, annealing, turning, grinding, or pickling) as are required to produce the prescribed properties.

4. Chemical Requirements

4.1 Material produced under this specification shall meet the requirements for chemical composition prescribed in Table 1, in accordance with the practices prescribed in Specification B 476.

4.2 Uniformity of composition shall be assured by the use of good commercial preparation practices.

5. Mechanical Requirements

5.1 The contract or order may specify ultimate tensile strength, elongation, microhardness (Knoop or Vickers), or a combination of these mechanical properties (as listed in Table 2 or Table 3) as temper criterion. If the contract or order does not specify a temper criterion, then the criterion for temper designation will be ultimate tensile strength.

5.2 All test specimens shall be full thickness or diameter when practical.

5.3 All tests are to be conducted at room temperature, about 68°F (20°C).

TABLE 1 Chemical Composition

Element	Weight
Pd (by difference)	59.5 % min.
Ag	39.1 to 40.5 %
Cu	0.1 max
Total other noble metals [A]	0.2 max
Other Impurities:	
Individual elements [B]	0.01 max
Collective total	0.10 max

[A] Other noble metals are Au, Pt, Rh, Ir, Ru, and Os.

[B] Typical metals are as indicated: Pb, Sn, Zn, Fe, Si, Mg, Ca, Al, Ni, Cr, Mn, Sb, B, Co, Mo, and Te, Cd, and In.

6. Inspection and Testing

6.1 Material furnished under this specification shall be inspected by the manufacturer in accordance with Specification B 476.

7. Keywords

7.1 clad materials; contact material; palladium alloy; precious metal; silver alloy

[1] This specification is under the jurisdiction of ASTM Committee B02 on Nonferrous Metals and Alloys and is the direct responsibility of Subcommittee B2.05 on Precious Metals and Electrical Contact Materials.

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[2] *Annual Book of ASTM Standards,* Vol 02.04.

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