



# AEROSPACE MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.  
TWO PENNSYLVANIA PLAZA, NEW YORK, N.Y. 1000

## AMS 4784

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Revised

### BRAZING FILLER METAL, HIGH TEMPERATURE 50Au - 25Pd - 25Ni

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. FORM: Wire, rod, sheet, strip, pig, powder, shot, chips, or as ordered.
3. APPLICATION: Primarily for joining corrosion and heat resistant alloys where corrosion and oxidation resistant joints with good strength at high temperatures are required. Following is the approximate brazing temperature range of the alloy:

|          |                 |
|----------|-----------------|
| Solidus  | 2015 F (1102 C) |
| Liquidus | 2050 F (1121 C) |

4. COMPOSITION:

|                       | min  | max  |
|-----------------------|------|------|
| Gold                  | 49.5 | 50.5 |
| Palladium             | 24.5 | 25.5 |
| Nickel                | 24.5 | 25.5 |
| Other Elements, total | --   | 0.15 |

5. CONDITION: Unless otherwise ordered, the product shall be supplied in the following condition:
  - 5.1 Wire and Rod: Cold drawn or rolled or extruded, as ordered; annealed; and pickled.
  - 5.2 Sheet and Strip: Cold rolled and annealed.
  - 5.3 Pig, Powder, Shot, and Chips: As fabricated.
6. TECHNICAL REQUIREMENTS:
  - 6.1 Color: Shall be yellow-white.
  - 6.2 Flatness: When unrolled, strip shall lie flat with no undue tendency to recoil.
7. QUALITY: Material shall be uniform in color, quality, and condition and free from foreign materials and from imperfections detrimental to its working qualities. Wire, rod, sheet, and strip shall be clean, sound, bright, and free from slivers, splitting, ragged edges, damaged ends, and other injurious imperfections.
8. SIZES AND TOLERANCES: Unless otherwise specified, material shall be supplied in the following standard sizes and to the tolerances shown:
  - 8.1 Wire and Rod:
    - 8.1.1 Nominal Diameters, Inch: 0.005, 0.007, 0.010, 0.015, 0.025, 1/32, 0.040, 3/64, 1/16, 3/32, 1/8, 0.175, 3/16, 0.225, and 1/4.

8.1.2 Diameter Tolerance; Drawn Wire and Rod: The latest issue of AMS 2224 as applicable to refractory alloys.

8.1.3 Diameter Tolerance; Rolled or Extruded Wire and Rod:

| Nominal Diameter or<br>Distance Between Parallel Sides<br>Inch | Tolerance, Inch<br>plus and minus |        |
|----------------------------------------------------------------|-----------------------------------|--------|
|                                                                | Round                             | Square |
| 1/32 to 1/16, incl                                             | 0.005                             | --     |
| Over 1/16 to 1/8, incl                                         | 0.006                             | --     |
| Over 1/8 to 3/16, incl                                         | 0.007                             | 0.009  |
| Over 3/16 to 1/4, incl                                         | 0.008                             | 0.010  |

8.2 Sheet and Strip:

8.2.1 Nominal Thickness Inch: 0.001, 0.0015, 0.002, 0.003, 0.004, 0.005, 0.006, 0.008, 0.010, 0.014, 0.020, and 0.030.

8.2.2 Tolerances: Unless otherwise specified, thicknesses less than 0.002 in. shall have a tolerance of  $\pm 0.0002$  in.; thicknesses 0.002 in. and over shall have tolerances conforming to the latest issue of AMS 2222 as applicable to refractory alloys. Width of individual rolls of strip shall not vary more than  $\pm 0.010$  in. from nominal. The length of strip in a roll is not limited except that no roll shall weigh more than 75 pounds.

8.3 Powder:

8.3.1 Nominal Sizes: -60, -100, -200, and -325 mesh.

8.3.2 Tolerances: Unless otherwise agreed upon by purchaser and vendor, the nominal mesh sizes shown in 8.3.1 shall be supplied in accordance with the following tolerances on particle size distribution:

| Nominal<br>Mesh Size | 100% Through U.S.<br>Sieve Series Number | No More than 10%<br>Through U.S. Sieve<br>Series Number |
|----------------------|------------------------------------------|---------------------------------------------------------|
| -60                  | 60                                       | 100                                                     |
| -100                 | 100                                      | 200                                                     |
| -200                 | 200                                      | 325                                                     |
| -325                 | 325                                      | *                                                       |

\* No more than 10% finer than a 10 micron particle size.

## 9. REPORTS:

9.1 Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report stating that the product conforms to the requirements of this specification. This report shall include the purchase order number, material specification number, heat number, form, size, and quantity from each heat.

9.2 When parts made of this brazing filler metal or assemblies requiring the use of this filler metal are supplied, the vendor of finished or semi-finished parts shall, unless otherwise specified, furnish with each shipment three copies of a report showing the purchase order number, material specification number, contractor or other direct supplier of filler metal, part number, and quantity. When filler metal for making parts is produced or purchased by the parts vendor, that vendor shall inspect each lot of filler metal to determine conformance to the requirements of this specification, and shall include in the report a statement that the filler metal conforms or shall include copies of laboratory reports showing the results of tests to determine conformance.