AEROSPACE MATERIAL SPECIFICATION

AMS4762™	REV. C

Issued 1992-04
Reaffirmed 2009-06
Revised 2021-09

Superseding AMS4762B

Silver Alloy, Brazing Filler Metal
40Ag - 30Cu - 30Zn
1245 to 1340 °F (674 to 727 °C) Solidus-Liquidus Range
(Composition similar to UNS P07402)

RATIONALE

AMS4762C results from a Five-Year Review and update of this specification. Changes have been made to prohibit unauthorized exceptions (3.6, 8.6), update references (2.1), reports (4.4.1), and identification (5.1.1.1), and allow use of the immediate prior revision of this specification (8.5).

1. SCOPE

1.1 Form

This specification covers a silver alloy in the form of wire, rod, sheet, strip, foil, pig, powder, shot, and chips, and a viscous mixture (paste) of powder in a suitable binder.

1.2 Application

This material has been used typically for joining ferrous metals and alloys, requiring good joint strength up to 600 °F (316 °C) for short-time service or up to 400 °F (204 °C) for long-time service, and for joining nonferrous metals except those having a base of titanium, aluminum, or magnesium, but usage is not limited to such applications.

2. APPLICABLE DOCUMENTS

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

AMS2222 Tolerances, Copper and Copper Alloy Sheet, Strip, and Plate

AMS2224 Tolerances, Copper and Copper Alloy Wire

ARP1917 Clarification of Terms Used in Aerospace Metals Specifications

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
SAE WEB ADDRESS: **http://www.sae.org**

For more information on this standard, visit
https://www.sae.org/standards/content/AMS4762C

2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM B214 Sieve Analysis of Granular Metal Powders

3. TECHNICAL REQUIREMENTS

3.1 Composition

Shall conform to the percentages by weight shown in Table 1. Methods for analysis shall be by spectrochemical methods or other analytical methods acceptable to purchaser.

Table 1 - Composition

Element	Min	Max
Silver	39.0	41.0
Copper	29.0	31.0
Zinc	28.0	32.0
Other Elements, total (3.1.1)	-	0.15

3.1.1 Determination not required for routine acceptance.

3.1.2 The requirements of 3.1 apply to paste after removal of the binder.

3.2 Condition

As fabricated unless otherwise specified.

3.2.1 Paste

Paste not containing flux (3.2.1.1) shall be supplied unless paste containing flux (3.2.1.2) is specified.

3.2.1.1 Paste Without Flux

Shall consist of 84 to 90% by weight powder in a suitable binder, unless otherwise specified by purchaser.

3.2.1.2 Paste Containing Flux

Shall consist of 55 to 80% by weight powder in a suitable binder and flux combination, unless otherwise specified by purchaser.

3.3 Properties

Filler metal shall conform to the following requirements:

3.3.1 Color

Shall be yellow.

3.3.2 Flatness

When unrolled, strip and foil shall lie flat with no undue tendency to recoil.

3.3.3 Paste

3.3.3.1 Paste shall have a shelf life of not less than 6 months from date of manufacture; not more than thorough mixing shall be required to restore paste for use during that time.

3.3.3.2 Paste without flux shall leave no adherent residue when heated in a protective atmosphere to 1000 °F (538 °C) or higher.

3.4 Quality

The product, as received by purchaser, shall be uniform in color, quality, condition, and free from foreign materials and imperfections detrimental to usage of the filler metal. Wire, rod, sheet, strip, and foil shall be clean, sound, bright, and free from slivers, splitting, ragged edges, damaged ends, and other injurious imperfections. Pig, powder, shot, and chips shall have a metallic luster.

3.5 Sizes and Tolerances

The product shall be supplied in the following standard sizes and to the tolerances shown in Tables 2, 3, and 4:

3.5.1 Wire and Rod

3.5.1.1 Nominal Diameters

Table 2 - Standard diameter sizes

Inches		Millimeters	
0.005	0.062	0.13	1.57
0.007	0.094	0.18	2.39
0.010	0.125	0.25	3.18
0.015	0.175	0.38	4.44
0.025	0.188	0.64	4.78
0.031	0.225	0.79	5.72
0.040	0.250	1.02	6.35
0.047		1.19	

3.5.1.2 Diameter Tolerances for Drawn Wire and Rod

AMS2224 as applicable to refractory alloys.

3.5.1.3 Diameter Tolerance for Rolled or Extruded Wire and Rod

Table 3A - Diameter tolerances, inch/pound units

Nominal Diameter or Distance Between Parallel Sides Inches	Tolerance, Inches Plus and Minus Rounds	Tolerance, Inches Plus and Minus Squares
0.031 to 0.062, incl	0.005	0.008
Over 0.062 to 0.125, incl	0.006	0.009
Over 0.125 to 0.188, incl	0.007	0.009
Over 0.188 to 0.250, incl	0.008	0.010

Table 3B - Diameter tolerances, SI units

Nominal Diameter or Distance Between Parallel Sides Millimeters	Tolerance, Millimeters Plus and Minus Rounds	Tolerance, Millimeters Plus and Minus Squares
0.79 to 1.57, incl	0.13	0.20
Over 1.57 to 3.18, incl	0.15	0.23
Over 3.18 to 4.78, incl	0.18	0.23
Over 4.78 to 6.35, incl	0.20	0.25

3.5.2 Sheet, Strip, and Foil

3.5.2.1 Nominal Thicknesses

Table 4 - Standard thicknesses

Inches		Millimeters	
0.001	0.006	0.025	0.15
0.0015	0.008	0.038	0.20
0.002	0.010	0.05	0.25
0.003	0.014	0.08	0.36
0.004	0.020	0.10	0.51
0.005	0.030	0.13	0.76

3.5.2.2 Tolerances

3.5.2.2.1 Thickness

Nominal thicknesses under 0.002 inch (0.05 mm) shall have a tolerance of ±0.0002 inch (±5 µm); nominal thicknesses 0.002 inch (0.05 mm) and over shall have tolerances conforming to AMS2222 as applicable to refractory alloys.

3.5.2.2.2 Width of Individual Rolls

Nominal widths under 6 inches (152 mm) shall vary not more than ±0.010 inch (±0.25 mm) from the width ordered. Nominal widths 6 inches (152 mm) and over shall vary not more than ±0.015 inch (±0.38 mm) from the width ordered.

3.5.2.2.3 Length in Individual Roll

Shall not be limited, except that no roll shall weigh more than 75 pounds (34 kg).

3.5.3 Powder

3.5.3.1 Mesh Designations

60, 100, 140, 200, and 325.

3.5.3.2 Powder shall be supplied in accordance with the limits on particle size distribution shown in Table 5 unless some other distribution is specified. Tests shall be in accordance with ASTM B214.

Table 5 - Particle size distribution

Mesh Designation	U.S. Standard Sieve	
60	Through a No. 40 sieve -	100%
	Through a No. 60 sieve -	95% minimum
	Through a No. 325 sieve -	10% maximum
100	Through a No. 60 sieve -	100%
	Through a No. 100 sieve -	95% minimum
	Through a No. 325 sieve -	15% maximum
140C	On a No. 100 sieve -	0.5% maximum
	On a No. 140 sieve -	10% maximum
	Through a No. 325 sieve -	20% maximum
140F	On a No. 100 sieve -	0.5% maximum
	On a No. 140 sieve -	10% maximum
	Through a No. 325 sieve -	55% maximum
200	On a No. 140 sieve -	0.5% maximum
	On a No. 200 sieve -	10% maximum
	Through a No. 325 sieve -	65% maximum
325	On a No. 200 sieve -	0.5% maximum
	On a No. 325 sieve -	10% maximum
	Through a No. 325 sieve -	90% minimum

3.5.3.2.1 When mesh designation is not specified, 140F mesh shall be supplied.

3.6 Exceptions

Any exceptions shall be authorized by the purchaser and reported as in 4.4.1.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for Inspection

The producer of the product shall supply all samples for producer's tests and shall be responsible for the performance of all required tests. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the product conforms to the specified requirements.

4.2 Classification of Tests

4.2.1 Acceptance Tests

All technical requirements other than properties (3.3) are acceptance tests and shall be performed on each lot.

4.2.2 Periodic Tests

Properties (3.3) are periodic tests and shall be performed at a frequency selected by the producer unless frequency of testing is specified by purchaser.

4.3 Sampling and Testing

Shall be in accordance with the following:

4.3.1 Composition

For all product except powder, one sample from each lot; for powder, one sample from each furnace charge.