



AEROSPACE MATERIAL SPECIFICATION

AMS4740™**REV. E**

Issued 1966-09
Reaffirmed 2017-11
Revised 2023-10

Superseding AMS4740D

Copper Powder
99.0 Cu, Minimum
As Fabricated

RATIONALE

AMS4740E results from a Five-Year Review and update of this specification with changes to update wording to prohibit unauthorized exceptions (see 3.5, 4.4.1, 5.1.3, and 8.3), update Applicable Documents (see Section 2, 3.1, and 3.3), Composition (see 3.1), Particle Size Distribution (see 3.3 and 4.3.2), Quality (see 3.4), and allow the use of the immediate prior specification revision (see 8.4).

1. SCOPE

1.1 Form

This specification covers elemental copper in the form of powder (see 8.5).

1.2 Application

This powder has been used typically as filler metal for brazing ferrous and high melting point nonferrous alloys or in powder metallurgy applications, 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.

AS7766 Terms Used in Aerospace Metals Specifications

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Documents

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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 Metal Powders

ASTM E478 Chemical Analysis of Copper Alloys

2.3 Definitions

Terms used in AMS are defined in AS7766.

3. TECHNICAL REQUIREMENTS

3.1 Composition

Shall conform to the percentages by weight shown in Table 1, determined in accordance with ASTM E478 or by other analytical methods acceptable to the purchaser.

Table 1 - Composition

Element	Min	Max
Copper (3.1.1)	99.0	--
Other Elements, total (3.1.1)	--	0.30

3.1.1 The balance is oxygen, present as cuprous oxide. Oxygen shall not be included in "Other Elements."

3.2 Condition

As fabricated.

3.3 Particle Size Distribution

Powder shall have the particle size distribution shown in Table 2 or Table 3 depending on the application (see 1.2, 3.3.1, and 3.3.2); sieve analysis shall be conducted in accordance with ASTM B214; subsieve (micron) analysis shall be in accordance with an optical method acceptable to the purchaser.

3.3.1 For Brazing Filler Metal Application

Shall be as shown in Table 2.

Table 2 - Particle size distribution

Mesh Designation	U.S. Standard Sieve Size	Distribution Percent
100	Through No. 60	100
	Through No. 100	95, min
140C	On No. 100	0.5, max
	On No. 140	10, max
140F	Through No. 325	20, max
	On No. 100	0.5, max
	On No. 140	10, max
	Through No. 325	55, max
325	On No. 200	0.5, max
	On No. 325	10, max
	Through No. 325	90, min

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



Documents

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