

AEROSPACE MATERIAL SPECIFICATION

SAE

AMS 4740B

Issued 30 SEP 1966

Revised 1 OCT 1991

Superseding AMS 4740A

Submitted for recognition as an American National Standard

COPPER POWDER
99.0 Cu, minimum
As Fabricated

1. SCOPE:

1.1 Form:

This specification covers elemental copper in the form of powder.

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 following publications form a part of this specification to the extent specified herein. The applicable issue of referenced publications shall be the issue in effect on the date of the purchase order.

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REAFFIRMED
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2.1 ASTM Publications:

Available from ASTM, 1916 Race Street, Philadelphia, PA 19103-1187.

ASTM B 214 Sieve Analysis of Granular Metal Powders

ASTM E 20 Particle Size Analysis of Particulate Substances in the Range of
0.2 to 15 μm by Optical Microscopy

ASTM E 478 Chemical Analysis of Copper Alloys

2.2 U.S. Government Publications:

Available from Standardization Documents Order Desk, Building 4D, 700
Robbins Avenue, Philadelphia, PA 19111-5094.

MIL-C-3993 Copper and Copper-Base Alloy Mill Products, Packaging of

3. TECHNICAL REQUIREMENTS:

3.1 Composition:

(R)

Shall conform to the percentages by weight shown in Table 1, determined by
wet chemical methods in accordance with ASTM E 478, by spectrochemical
methods, or by other analytical methods acceptable to 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
(R) included in "Other Elements".

3.2 Condition:

As fabricated.

3.3 Particle Size Distribution:

(R)

Powder shall have the particle size distribution shown in Table 2 or Table
3; sieve analysis shall be conducted in accordance with ASTM B 214; subsieve
(micron) analysis shall be in accordance with ASTM E 20 or by an optical
method acceptable to purchaser.

3.3.1 For Brazing Filler Metal Applications:
(R)

TABLE 2 - Particle Size Distribution

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

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

3.3.2 For Powder Metallurgy Applications:
(R)

TABLE 3 - Particle Size Distribution

Mesh Designation	Through U.S. Series Sieve Number 100%	Through U.S. Series Sieve Number 99%, min	Through U.S. Series Sieve Number 10%, max
40	30	40	60
80	60	80	120
120	80	120	200
200	140	200	325

3.4 Quality:

Powder, as received by purchaser, shall be uniform in color, quality, and condition and free from foreign materials and from imperfections detrimental to its brazing qualities. Powder shall have a metallic luster.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection:

(R)

The vendor of powder shall supply all samples for vendor's tests and shall be responsible for performing all required tests. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the powder conforms to the requirements of this specification.

4.2 Classification of Tests:

Tests for all technical requirements are acceptance tests and shall be performed on each lot.

4.3 Sampling and Testing:

(R)

Shall be in accordance with the following; a lot shall be a uniform blend of powder produced from one or more furnace charges and presented for vendor's inspection at one time:

4.3.1 Composition: One sample from each lot.

4.3.2 Other Technical Requirements: As agreed upon by purchaser and vendor.

4.4 Reports:

(R)

The vendor of powder shall furnish with each shipment a report showing the results of tests on each lot to determine conformance to the composition requirements and stating that the product conforms to the other technical requirements. This report shall include the purchase order number, lot numbers, AMS 4740B, mesh designation, and quantity.

5. PREPARATION FOR DELIVERY:

5.1 Packaging and Identification:

5.1.1 The powder shall be wrapped, sealed, and boxed or otherwise packaged for protection against injury and contamination during shipment and under normal dry storage conditions.