SAE Aerospace
An SAE International Group

AEROSPACE MATERIAL SPECIFICATION

SAE AMS4710 | REV. G

Issued 1942-12
Noncurrent 1997-03
Revised 2007-07
Reaffirmed 2012-09

Superseding AMS4710F

Brass Wire, Tinned
65Cu - 35Zn
Annealed (061)

(Composition similar to UNS C27000)

RATIONALE

AMS4710G has been reaffirmed to comply with the SAE five-year review policy.

1. SCOPE

1.1 Form

This specification covers one type of brass in the form of wire.

1.2 Application

These products are typically used for locking wire, 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 724-776-4970 (outside USA), www.sae.org.

AMS 2224	Tolerances, Copper and Copper Alloy Wire

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 B 250	General Requirements for Wrought Copper-Alloy Wire
ASTM B 250M	General Requirements for Wrought Copper-Alloy Wire (Metric)
ASTM E 112	Determining Average Grain Size
ASTM E 478	Chemical Analysis of Copper Alloys

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**

3. TECHNICAL REQUIREMENTS

3.1 Composition

3.1.1 Basis Wire

Shall conform to the following 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	63.0	68.5
Lead	--	0.10
Iron	--	0.07
Zinc + Sum of Named Elements (3.1.1.1)	99.7	--
Zinc (3.1.1.2)	remainder	

3.1.1.1 Applicable only when zinc is determined by direct analysis.

3.1.1.2 Applicable when zinc is not determined by analysis. The reported (certified) value is the difference between the sum of all other specified elements and 100%; and will therefore include unnamed elements. Limits for unnamed elements may be established by agreement between purchaser and manufacturer or supplier.

3.1.2 The basis wire shall be uniformly coated with pure tin.

3.2 Condition

Cold-drawn or cold-rolled, and annealed (061) (See 8.2).

3.3 Properties

Wire shall conform to the following requirements:

3.3.1 Grain Size

Average grain size shall be 0.035 to 0.070 mm, determined in accordance with ASTM E 112 on a longitudinal section.

3.3.2 Twist

Wire under 0.050 inch (1.27 mm) in diameter shall show no evidence of breakage after two strands of wire are twisted around each other ten times per inch (25 mm) of length.

3.4 Quality

Wire, as received by purchaser, shall be uniform in quality and condition, sound, and free from foreign materials and from imperfections detrimental to usage of the wire.

3.5 Tolerances

Shall conform to AMS 2224 as applicable to nonrefractory alloys.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for Inspection

The vendor of wire shall supply all samples for vendor'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 wire conforms to specified requirements.

4.2 Classification of Tests

Tests to determine conformance to all technical requirements of this specification are classified as acceptance tests and shall be performed on each lot.

4.3 Sampling

Shall be in accordance with ASTM B 250 or ASTM B 250M.

4.4 Reports

The vendor of wire shall furnish with each shipment a report showing the results of tests on each lot to determine conformance to the technical requirements of this specification. This report shall include the purchase order number, lot number, AMS 4710G, nominal size, and quantity.

4.5 Resampling and Retesting

If any specimen used in the above tests fails to meet the specified requirements, disposition of the wire may be based on the results of testing three additional specimens for each original nonconforming specimen. Failure of any retest specimen to meet the specified requirements shall be cause for rejection of the wire represented and no additional testing shall be permitted. Results of all tests shall be reported.

5. PREPARATION FOR DELIVERY

5.1 Wire shall be supplied on spools or in coils except when straight lengths are ordered.

5.2 Identification

5.2.1 Spools and Coils

Shall be marked with a durable tag or label showing not less than the manufacturer's identification, purchase order number, AMS 4710G, nominal size, and quantity; boxes or drums shall be marked with the same information.

5.2.2 Straight Lengths

Shall have attached to each bundle or enclosed in each box a durable tag or label marked with the information of 5.2.1; when boxed, the box shall be marked with the same information.

5.3 Packaging

5.3.1 Spools and Coils

Coils shall be individually wrapped with waterproof paper or packed in waterproof drums. Spools, when ordered, shall be boxed.

5.3.2 Straight Lengths

Shall be bundled or boxed.