

**SUPERSEDED**

**SAE** The Engineering  
Resource For  
Advancing Mobility

400 COMMONWEALTH DRIVE WARRENDALE PA 15096

**AEROSPACE  
MATERIAL  
SPECIFICATION**

**AMS** 4840A

Issued 1-22-80

Revised 7-1-81

**LEADED BRONZE CASTINGS**  
70Cu - 24.5Pb - 5.5Sn

This specification has been declared "NONCURRENT" by the Aerospace Materials Division, SAE as of 10-6-58. It is recommended that this specification not be specified for new designs.

This cover sheet should be attached to the "A" revision of the subject specification.

This specification has been declared "CANCELLED" by the Aerospace Materials Division, SAE, as of 7-1-81. By this action, subject specification number and title will be deleted from the active specification index of Aerospace Material Specifications.

SAE Technical Board rules provide that: "All technical reports, including standards approved and practices recommended, are advisory only. Their use by anyone engaged in industry or trade or their use by governmental agencies is entirely voluntary. There is no agreement to adhere to any SAE standard or recommended practice, and no commitment to conform to or be guided by any technical report. In formulating and approving technical reports, the Board and its Committees will not investigate or consider patents which may apply to the subject matter. Prospective users of the report are responsible for protecting themselves against liability for infringement of patents."

SAENORM.COM. Click to view the full PDF of AMS4840A



# AEROSPACE MATERIAL SPECIFICATION

## AMS 4840A

Society of Automotive Engineers, Inc.  
400 COMMONWEALTH DRIVE WARRENDALE PA 15086

Issued 1-22-40

Revised 6-1-51

### LEADED BRONZE CASTINGS 70Cu - 24.5Pb - 5.5Sn

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.

2. APPLICATION: Primarily for bearings.

3. COMPOSITION:

Copper	67.5 - 72.5
Lead	23.0 - 26.0
Tin	4.5 - 6.0
Zinc	0.50 max
Iron	0.30 max
Phosphorus	0.01 max
Total Other Elements	0.25 max

4. CONDITION: As cast.

5. TECHNICAL REQUIREMENTS:

5.1 Casting:

5.1.1 A melt shall be the metal withdrawn from a batch furnace charge of 2000 pounds or less as melted for pouring castings.

5.1.2 Castings shall be cooled at a sufficiently rapid rate to produce a uniform, fine dispersion of lead throughout the matrix.

5.2 Hardness: Castings shall have hardness of Brinell 35 - 50, using 500 kg load, or equivalent hardness by other methods.

5.3 Fracture Test: When castings are broken for fracture test, the fracture shall have uniform color and be substantially free from oxides, blowholes, porosity and other defects. Castings shall be sufficiently ductile to show some bending before rupture.

5.4 Structure: The surface and fracture of a representative casting shall show uniform color and uniform distribution of lead in the copper-tin matrix. A polished section shall show uniform structure at magnifications of 10 and 50 diameters; at 50 diameters magnification, an average 1-inch square field shall show the lead particles so distributed that any area of concentration does not exceed the equivalent of 1/16 inch square; a network of elongated shapes is not desirable.

SAE Technical Board rules provide that: "All technical reports, including standards approved and practices recommended, are advisory only. Their use by members of the Society of Automotive Engineers, Inc. is entirely voluntary. There is no agreement to adhere to any SAE standard or recommended practice, and no commitment to contribute to the development of any SAE standard or recommended practice. The Board and its Committees will not investigate or consider patents which may apply to the subject matter. Prospective users of technical reports are responsible for protecting themselves against infringement of patents."