AERONAUTICAL MATERIAL SPECIFICATION

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BEARINGS, SINTERED, METAL POWDER
89Cu - 10Sn Oil Impregnated

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

2. APPLICATION: Primarily bearings requiring self-lubrication, low coefficient of ϕ friction and accurate dimensions.

3. COMPOSITION (Oil-free Basis):

ϕ

Copper	87.50 - 90.50
Tin	9.50 - 10.50
Tin and Copper	98.50 min
Other Metals	0.10 max

3.1 Lubricant: Bearings shall be impregnated with a high grade non-gumming petroleum base oil.

4. TECHNICAL REQUIREMENTS:

4.1 Porosity: The porosity of bearings, as supplied impregnated with oil, shall be ϕ such that specific gravity is 6.4 to 6.8 at 68 F, and that the oil will sweat out of the surfaces when the bearing is heated to 300 F.

4.2 Axial Crushing Strength: Bearings with outside diameter not over 4 inches shall conform to the following requirements when a cylindrical section having a length equal to the outside diameter is compressed axially:

Nominal Wall Thickness inch	Compressive Strength, psi, min	Reduction of Length at max load, %, min
0.030 - 0.049, incl	12,000	10
Over 0.049 - 0.099, incl	15,000	15
Over 0.099	25,000	20

4.2.1 Bearings too short to test in accordance with 4.2, or sections of such bearings, ϕ shall take a permanent deformation, without fracturing, when compressed axially under a gradually applied load or bent by suitable means.

5. QUALITY:

5.1 Bearings shall be uniform in quality and condition, clean, sound, smooth, and free ϕ from foreign materials and from internal and external defects detrimental to performance of parts.

5.2 When bearings are broken for fracture test, the fracture shall have uniform color ϕ and be substantially free from oxides and other defects.