AEROSPACE
MATERIAL SPECIFICATIONS
SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

AMS 4532B

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COPPER-BERYLLIUM ALLOY SHEET AND STRIP
98Cu - 1.9Be
Half Hard

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 parts requiring high strength with good electrical conductivity or lack of magnetic susceptibility. This material has higher strength and lower ductility than AMS 4530.

3. COMPOSITION:

	min	max
Beryllium	1.80	2.05
Nickel + Cobalt	0.20	--
Nickel + Cobalt + Iron	--	0.6
Copper + Total Named Elements	99.5	--

4. CONDITION: Solution heat treated and cold rolled to half hard temper, in a suitable condition for precipitation heat treatment.

5. TECHNICAL REQUIREMENTS:

5.1 Tensile Properties:

Tensile Strength, psi	85,000 - 100,000
Elongation, % in 2 in.	5 min

5.1.1 Elongation requirements apply only to material 0.004 in. and over in nominal thickness.

5.2 Hardness: Material should have hardness as follows, or equivalent, but shall not be rejected on the basis of hardness if the tensile property requirements are met:

Nominal Thickness Inch	Hardness, Rockwell
0.010 to 0.020, incl	15T 88 - 91
Over 0.020 to 0.045, incl	30T 74 - 79
Over 0.045 to 0.188, incl	B 88 - 96

5.3 Microstructure: Shall reveal a minimum of beta phase constituent. Any beta phase present shall be fine and well dispersed and shall not be in the form of stringers. Material may be precipitation heat treated as in 5.5 before examination.

5.4 Grain Count: The total number of grains in the thickness of material, reported as the average of 5 determinations one thickness of material apart, shall be as specified below; determinations shall be made on a plane perpendicular to the surface and parallel to the direction of rolling. Material may be precipitation heat treated as in 5.5 before examination.

Nominal Thickness Inch	Grain Count min
Over 0.004 to 0.006, incl	6
Over 0.006 to 0.008, incl	7
Over 0.008 to 0.010, incl	8

5.5 Properties After Precipitation Heat Treatment: Material shall conform to the following requirements after being precipitation heat treated by heating to 600 F ± 5 (315.6 C ± 2.8), holding at heat for 2 hr, and cooling in air.

5.5.1 Tensile Properties:

Nominal Thickness Inch	Tensile Strength psi		Yield Strength at 0.2% Offset or at Extension Indicated (E = 18,500,000)		Elongation % in 2 in.
	min	max	psi, min	Extension Under Load in. in 2 in.	min
Up to 0.004, excl	185,000	--	160,000	0.0213	--
0.004 to 0.020, incl	185,000	--	160,000	0.0213	1
Over 0.020 to 0.188, incl	185,000	210,000	160,000	0.0213	1

5.5.2 Hardness:

Nominal Thickness Inch	Hardness, Rockwell min
0.010 to 0.020, incl	15N 79.5
Over 0.020 to 0.060, incl	30N 59
Over 0.060 to 0.188, incl	C 38

6. QUALITY: Material shall be uniform in quality and condition, clean, sound, smooth, and free from foreign materials and from internal and external imperfections detrimental to fabrication or to performance of parts.

7. TOLERANCES: Unless otherwise specified, tolerances shall conform to all applicable requirements of the latest issue of AMS 2222 for Refractory Alloys.