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BRUSH WELLMAN ALLOY PRODUCTS

Data Sheet

Alloy 25 (C17200) Strip

Brush Wellman's Alloy 25 strip provides the highest strength of any copper alloy, with electrical conductivity considerably greater than other high strength copper alloys. Since it is heat treated after forming, it provides excellent formability and ductility. This alloy features good stress relaxation resistance and high fatigue strength. Typical applications include pressure sensor bellows, burn-in and test socket contacts, computer processor socket contacts, and electromagnetic shielding gaskets.

CHEMICAL COMPOSITION (weight percent)

Alloy	Beryllium	Nickel + Cobalt	Nickel + Cobalt + Iron	Copper
C17200	1.8 – 2.0	0.2 min.	0.6 max.	Balance

PHYSICAL PROPERTIES*

Elastic Modulus	Melting Point (Solidus)	Electrical Conductivity / resistivity	Density**	Thermal Expansion Coefficient	Thermal Conductivity (25 °C)
19,000 ksi 131 GPa	1600°F 870 °C	22-28% IACS 6.2-7.8 μΩ-cm	0.302 lb/in^3 8.36 g/cm^3	9.7x10^{-6} in/in °F 17.0x10^{-6} m/m °C	60 BTU/ft hr °F 105 W/ m K

*Properties specified for the precipitation age hardened (heat treated) condition
** Density in the cold-rolled condition (prior to heat treatment) is 0.298 lbs/in^3 (8.25 g/cm^3)

MECHANICAL PROPERTIES*

Temper**	0.2% Offset Yield Strength		Ultimate Tensile Strength		Elon-gation ***	Hard-ness	Formability (Minimum Bend Radius to Thickness Ratio for a 90° Bend)****	
	ksi	MPa	ksi	MPa	Percent	DPH	Longitudinal	Transverse
A (TB00)	30-55	190-380	60-78	410-540	35-65	90-144	0.0	0.0
¼ H (TD01)	60-80	410-560	75-88	510-660	20-45	121-185	0.0	0.0
½ H (TD02)	75-95	510-660	85-100	580-690	12-30	176-216	0.5	1.0
H (TD04)	90-115	620-800	100-120	680-830	2-18	216-287	1.0	2.9
AT (TF00)	140-175	960-1210	165-195	1130-1350	3-15	353-413	-	-
¼ HT (TH01)	150-185	1030-1300	175-205	1190-1420	3-10	353-424	-	-
½ HT (TH02)	160-195	1100-1350	185-215	1270-1490	1-8	373-435	-	-
HT (TH04)	165-205	1130-1420	190-220	1310-1520	1-6	373-446	-	-

*Properties may vary by thickness. **Heat treatment temperature is 600°F (315°C). AT temper requires a 3 hour soak time at temperature, the other tempers require 2 hours. ***Elongation numbers valid for strip greater than 0.004" (0.10 mm) thick. ****Formability numbers valid for strip 0.010" (0.25 mm) and thinner.

FORMS AVAILABLE

Alloy 25 strip is available in widths ranging from 0.050" to 16" (1.27 mm to 452.7 mm) and in thicknesses ranging from 0.002" to 0.188" (0.05 mm to 4.77 mm). It is also available in rod, wire, bar, plate, and tube.

SCPECIFICATIONS

C17200, ASTM B-194, AMS 4530, AMS 4532, SAE J 461, SAE J 463, NACE MRO175/ISO 15156, QQC-533, JIS H3130, EN 1654, EN 13148, EN 14436

RELATED INFORMATION

Additional information on Alloy 25 may be obtained by phoning 800-375-4205.

HEALTH AND SAFETY

Handling Alloy 25 strip in solid form poses no special health risk. Like many industrial materials, beryllium-containing materials may pose a health risk if recommended safe handling practices are not followed. Inhalation of airborne beryllium may cause a serious lung disorder in susceptible individuals. The Occupational Safety and Health Administration (OSHA) has set mandatory limits on occupational respiratory exposures. Read and follow the guidance in the Material Safety Data Sheet (MSDS) before working with this material. For additional information on safe handling practices or technical data on Alloy 25, contact Brush Wellman Inc. at 1-800-375-4205.

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