

Brush Alloy 310

Materion Performance Alloys' Brush Alloy 310 is a low cost copper beryllium nickel cobalt alloy with high electrical and thermal conductivity possessing good strength and hardness. The alloy has been shown to have excellent thermal fatigue resistance in use. Typical applications include resistance welding electrodes and other welding electrode components. The material also is used for such applications as non-ferrous metal casting dies, plungers and nozzles.



CHEMICAL COMPOSITION (weight percent)

Alloy	Beryllium	Nickel	Cobalt	Copper
310	0.4-0.7	0.8-1.3	0.8-1.3	Balance

PHYSICAL PROPERTIES

Elastic Modulus	Melting Point (Liquidus)	Melting Point (Solidus)	Electrical Conductivity	Density	Thermal Conductivity
19,600 ksi 135 kN/mm ²	1975°F 1080°C	1880°F 1030°C	45% IACS (nominal) 3.8 μ-ohm-cm (nominal)	0.318 lb/in ³ 8.81 g/cm ³	135 BTU/hr ft ·°F 235 W/m ·°C

TYPICAL MECHANICAL PROPERTIES

Temper	0.2% Offset Yield Strength (nominal)		Ultimate Tensile Strength (nominal)		Elongation (nominal)	Hardness
	ksi	N/mm ²	ksi	N/mm ²	%	BHN (HRB)
AT or HT* (TF00 or TH04)	96-107	660-740	104-119	720-820	10-14	230 min (98 min)

*Dependent upon size/shape required

FORMS AVAILABLE

Rounds, square and rectangular bars, forged plates, cast rounds and parts finished machined per customer drawings

SPECIFICATIONS AND STANDARDS

None

RELATED INFORMATION

Additional technical information on Alloy 310 can be obtained by calling 800-375-4205. For pricing and availability, phone 800-521- 8800, or the local sales number listed on the reverse side of this page.

SAFE HANDLING OF COPPER BERYLLIUM

Handling copper beryllium 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 Safety Data Sheet (SDS) before working with this material. For additional information on safe handling practices or technical data on copper beryllium, contact Materion Performance Alloys, Technical Service Department at 1-800-375-4205.

North American Service Centers – Sales Inquiries

For bar, tube, plate/sheet >0.060" (1.5 mm) thick
and rod >0.5" (12.7 mm) diameter:

Warren, MI

TOLL FREE: 800-521-8800
PHONE: +(1) 586-772-2700
FAX: +(1) 586-772-2472

International Sales Offices

CHINA/HONG KONG

TEL: + (852) 2318-1960 / 1907
brushalloysHK-info@materion.com

CHINA/SHANGHAI

TEL: + (86) 21-5237-2328
brushalloysCN-info@materion.com

GERMANY

TEL: + (49) 711-830-930
brushalloysDE-info@materion.com

JAPAN

TEL: + (81) 33 230 2961
brushalloysJP-info@materion.com

REPUBLIC OF KOREA

TEL: + (82) 32-811-2171
brushalloysKR-info@materion.com

SINGAPORE/ASEAN

TEL: + (65) 6842-4456
brushalloysSG-info@materion.com

TAIWAN, R.O.C.

TEL: + (886) 2-2747-8800 x-121
brushalloysTW-info@materion.com

UNITED KINGDOM & IRELAND

TEL: + (44) 118-930-3733
brushalloysUK-info@materion.com