

Material Datasheet

Synaptite Grade 1

Material description

eForged copper-based, tungsten-free composite material for use as a replacement for materials of the ISO 5182:2016 Group B Type 10-11 and RWMA Group B Class 11-12.

This material shows a good conductivity/hardness ratio, while keeping good properties at high temperature. Indicated for welding copper alloys (brass/bronze).

Physical characteristics at 20°C

	Synaptite Grade 1
Mass density [g cm ⁻³]	8.2 ±0.1
Hardness HV1	330 ±30
Electrical conductivity [†] [%IACS] [MS·m ⁻¹]	10 ±1 5.7 ±0.5

[†]measured by phase-sensitive eddy current test method (DIN EN 2004-1)

Mechanical characteristics at high temperature

	Synaptite Grade 1		
Test temperature	200°C	500°C	800°C
Yield strength [MPa]	650	420	210
Compressive strength [MPa]	680	510	260
Compression at break [-]	0.06	0.09	0.25

Forms Available

Sizes [‡]		
Circular blanks	Diameter from Ø5 to Ø28mm	Height 1 to 15mm
Square blanks	Section from 3x3mm to 25x25mm	
Rectangular blanks	Variable section from 5x3mm to 45x15mm	

[‡]Semi-finished machined products and specific sizes available on request

Machinability and soldering

These materials can be machined with conventional carbide cutting tools. Solders used for RWMA Group A are recommended.

Health and Safety

No substances classified under the Annex XVII to REACH are used in this group of materials. Cobalt, Chromium, Nickel, and Beryllium free.