TRONAMETAL

TECHNICAL DATA SHEET

Doc Ref: TDS-TRC4-01

TRC4 (CuCo2Be) / C-17500 (CW104C)

High-strength cobalt-beryllium copper alloy containing approximately 2.5% Cobalt, 0.3% Nickel, and 0.5% Beryllium. Delivers high hardness together with strong electrical and thermal conductivity after hot forging and heat treatment, providing slightly higher mechanical and physical performance than standard CuCoNiBe.

MATERIAL STANDARDS & DESIGNATIONS

DIN	2.1285
ASTM	C17500
RWMA	CLASS III
EN/ISO	CW104C

CHEMICAL COMPOSITION

COBALT (Co)	BERYLLIUM (Be)	NICKEL (Ni)	COPPER (Cu)
2.2% - 2.7%	0.4% - 0.7%	Max. 0.3%	Balance (Rest)

MECHANICAL PROPERTIES

Tensile Strength (Rm)	650 - 800	N/mm^2
Yield Strength (Rp 0.2)	500 - 700	N/mm^2
Elongation (A5)	Min. 5	%
Hardness (HB 30)	230 - 280	HB 30
Elastic Modulus	135×10^3	N/mm^2

PHYSICAL PROPERTIES

Electrical Conductivity	24 - 30 MS/m	% IACS (34 - 48%)
Thermal Conductivity	210 - 240	W/(m·K)
Density	8.86	g/cm^3
Specific Heat	0.40	J/(g·K)
Thermal Expansion (20-100 °C)	17.0×10^{-6}	/K
Max Working Temperature	480	°C

KEY APPLICATIONS

Resistance Welding	Welding electrodes, electrode holders, and seam welding discs for high-load resistance welding.
Plastic Injection & Die-Casting	Hot runner nozzles, cooling inserts, and specialized plunger tips for aluminum die-casting.
Non-Ferrous & Chill Moulds	Moulds for non-ferrous casting and chill moulds for brass and bronze casting with fast, uniform cooling.