

Technical Data Sheet

AMPCOLOY[®] 83

Forgings

Nominal composition:

Beryllium	(Be)	1.9%
Cobalt + Nickel	(Co + Ni)	0.5%
Others		0.5% max.
Copper	(Cu)	balance

Specifications:

EN	101C	A4/2
D	DIN 17672	W. Nr. 2.1247
F	AFNOR	UBe2
GB	BS	
USA	CDA RWMA	C17200 Class 4

Mechanical and physical properties	Units	Nominal Values
Tensile strength Rm	MPa	1140
Yield strength Rp 0.5	MPa	1000
Elongation A5	%	5
Brinell hardness	HBW 10/ 3000	360
Rockwell hardness	HRC	38
Modulus of elasticity E	GPa	128
Density ρ	g / cm ³	8.26
Coefficient of expansion α	10 ⁻⁶ / K	17.5
Thermal conductivity λ	W / m ·K	106
Electrical conductivity γ	m / Ω · mm ²	12.8
Electrical conductivity	% I.A.C.S.	22
Specific heat Cp	J / g ·K	0.38

Assurances given with respect to properties or uses are subject to written approval from AMPCO METAL.

AMPCOLOY[®] 83 is a 1.9 % Beryllium copper alloy which displays very high mechanical properties with a reasonably good electrical and thermal conductivity.

APPLICATIONS:

Wherever good wear resistance or high mechanical properties are desired coupled with a good electrical or thermal conductivity, such as:

Flash butt welding and butt welding

Parts for electrical components

In the plastic mould industry AMPCOLOY[®] 83 is sometimes used as chill plates and inserts in the moulds, cooling pins and neck rings or bottom plates for blow moulds of plastic bottles.

WARNING

Since the alloy contains 1.9 % Beryllium, it is recommended that during any operation which is liable to create dust or fumes (for example dry grinding, polishing or welding) precautions should be taken to ensure there is no inhalation or exposure to eyes or skin. Conventional machining (for example milling and turning) is not generally considered hazardous.