TECHINICAL DATASHEET

CuBe2 - C17200

Beryllium Copper Alloys Strip

Chemical Composition	
Be	1.80-2.00%
Co	0.30% min.
Co+Ni+Fe	0.60% max.
Cu+additions	99,5% min.

Physical Properties after precipitation hardening		
Melting Point	°C	865-980
Density	g/cm³ at 20°C	8.26
Specific Heat	Cal/(g·°C) at 20°C	0.1
Coefficient of Linear Expansion	x10^{-6}/°C at 20°C to 200°C	17.3
Electrical Resistivity	10^{-8}Ω·m at 20°C	7.9
Electrical Conductivity	%IACS at 20°C	25
Thermal Conductivity	W/(m·k) at 20°C	84 - 130
Modulus of Elasticity	N/mm²	130000
Modulus of Rigidity	N/mm²	50000
Poisson's Ratio		0.3
Magnetic Paermeability	μ(μ=1+4πk)	1.000042
Fatigue Resistance	N/mm² at 10^8 cycles	≥ 300

TECHINICAL DATASHEET

Mechanical Properties

Age Hardenable

	Temper			
	A	¼ H	½ H	H
Heat Treatment	---	---	---	---
Tensile Strength (N/mm²)	410 - 540	510 - 610	590 - 690	690 - 830
Yield Strength 0.2% Offset (N/mm²)	190 - 380	400 - 560	510 - 660	650 - 800
Hardness HV	90 - 150	130 - 190	180 - 220	215 - 270
Elongation %	35	15	8	2
Electrical Conductivity (% IACS)	15 - 19	15 - 19	15 - 19	15 - 19
Formability Trans. R/t at 90° bending	0.0	0.0	1.0	2.0
Formability Long. R/t at 90° bending	0.0	0.0	2.0	5.0

Age Hardened

	Temper			
	AT	¼ HT	½ HT	HT
Heat Treatment	3h at 315°C	2h at 315°C	2h at 315°C	2h at 315°C
Tensile Strength (N/mm²)	1130 - 1350	1210 - 1400	1260 - 1450	1310 - 1520
Yield Strength 0.2% Offset (N/mm²)	960 - 1210	1020 - 1280	1090 - 1350	1130 - 1420

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Hardness HV	350 - 410	360 - 430	370 - 440	380 - 450
Elongation %	3	3	1	1
Electrical Conductivity (% IACS)	21 - 28	21 - 28	21 - 28	21 - 28
Formability Trans. R/t at 90° bending	---	---	---	---
Formability Long. R/t at 90° bending	---	---	---	---

Mill Hardened (standard)

	Temper						
	AM	¼ HM	½ HM	HM	SHM	XHM	XHMS
Heat Treatment	M	M	M	M	M	M	M
Tensile Strength (N/mm^2)	690 - 800	750 - 870	830 - 960	930 - 1080	1030 - 1150	1100 - 1250	1200 - 1320
Yield Strength 0.2% Offset (N/mm^2)	480 - 660	550 - 760	650 - 850	750 - 980	860 - 1020	930 - 1180	1030 - 1230
Hardness HV	210 - 250	235 - 280	260 - 310	290 - 350	310 - 360	345 - 395	365 - 420
Elongation %	16	15	12	9	9	4	3
Electrical Conductivity (% IACS)	19 - 28	19 - 28	19 - 28	19 - 28	19 - 28	19 - 28	19 - 28
Formability Trans. R/t at 90° bending	0.8	1.3	1.5	2.3	2.5	3.0	4.0
Formability Long. R/t at 90° bending	1.2	1.8	2.0	2.5	3.0	4.0	6.0

TECHINICAL DATASHEET

CuNi2Be - C17510

Beryllium Copper Alloys Strip

Chemical Composition	
Be	0.20-0.60%
Ni	1.80-2.20%
Cu+additions	99,5% min.

Physical Properties after precipitation hardening		
Melting Point	°C	1030-1070
Density	g/cm³ at 20°C	8.75
Specific Heat	Cal/(g·°C) at 20°C	0.1
Coefficient of Linear Expansion	x10^{-6}/°C at 20°C to 200°C	18
Electrical Resistivity	10^{-8}Ω·m at 20°C	3.8
Electrical Conductivity	%IACS at 20°C	50
Thermal Conductivity	W/(m·k) at 20°C	167-260
Modulus of Elasticity	N/mm²	132000
Modulus of Rigidity	N/mm²	52000
Poisson's Ratio		0.3
Magnetic Paermeability	μ(μ=1+4πk)	1.000031
Fatigue Resistance	N/mm² at 10^8 cycles	≥ 240

TECHINICAL DATASHEET

Mechanical Properties		
Mill Hardened (high formability)		
	Temper	
	A	B
Heat Treatment	M	M
Tensile Strength (N/mm²)	780 - 930	880 - 1020
Yield Strength 0.2% Offset (N/mm²)	680 - 850	780 - 950
Hardness HV	220 - 270	250 - 310
Elongation %	12	10
Electrical Conductivity (% IACS)	≥ 48	≥ 48
Formability Trans. R/t at 90° bending	0.3	0.7
Formability Long. R/t at 90° bending	0.3	0.7