Elmedur Z
Technical Datasheet

DURO METALL
Ein Unternehmen der Wieland-Gruppe

Short name	CW120C	**Chemical**	Zr	others	Cu
Code	CuZr	**Composition**	c. 0,15	max. 0,2	bal.
Material-No.(old)	2.1580	(Weight %)			

Classification	DIN ISO 5821	c. Class 2
	R.W.M.A.	c. Class 2

Material Characteristics

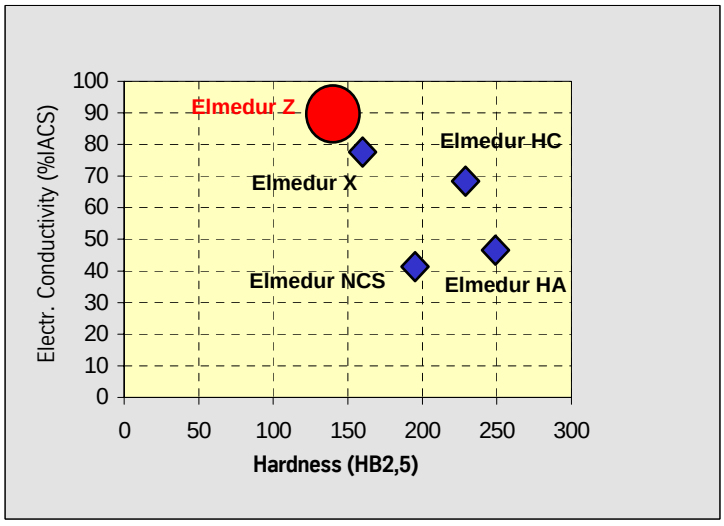
Precipitation hardened copper alloy with sufficient hardness and strength, combined with an outstanding electrical conductivity.

Applications

- Spot welding electrodes and cap tips especially for coated sheets
- Components for electronic devices, e.g. semiconductors

Mechanical Values (Typical)	Condition		Solution annealed, cold drawn and precipitation hardened	Solution annealed and precipitation hardened
	Diameter		<25 mm Ø	≥25 mm Ø
	Hardness (ref. val.)	HB 10/2,5	130	120
	Tensile strength	N/mm²	350	300
	Yield Strength	N/mm²	310	250
	Elongation L = 5 D	%	13	20
	Modulus of elasticity	kN/mm²	100	-

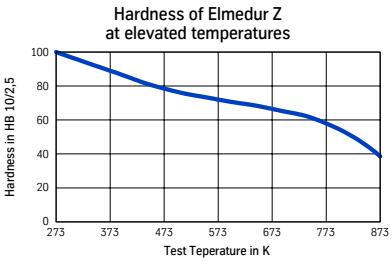
Physical Properties	Electrical conductivity 293 K (20 °C)	MS/m	min. 49 (min. 85 % I.A.C.S.)
	Electrical resistance 293 K (20 °C)	Ω.mm²/m	0,02
	Coeff. of electr. resist. 273-573 K (0-300°C)	1/K	0,00367
	Coeff. of therm. exp. 273-593 K (0-320°C)	1/K	$17{,}0 \cdot 10^{-6}$
	Heat capacity	J/g.K	0,376
	Thermal conductivity 293 K (20 °C)	W/m.k	c. 320
	Density	g/cm³	8.9

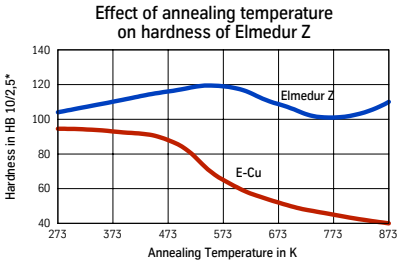


DURO METALL GmbH www.duro-metall.de

Albert-Einstein-Str. 1, D-70806 Kornwestheim, Telefon +49(0)7154 8255-0, Fax +49 (0)7154 8255-48

Elmedur Z
Technical Datasheet





Machining (Reference value) Condition: precipitation hardened

Turning	Tungsten Carbide K 20	HSS THYRAPID 3207
Cutting speed m/min.	up to 250	up to 120
Rake angle	6 – 18	15 –25
Feed and depth of cut	as to required surface finish	as to required surface finish
Chip breaker	recommended	recommended

Milling	Tungsten Carbide K20	HSS THYRAPID 3207
Cutting speed m/min.	up to 300	up to 100
Rake angle	positive	positive
Feed mm/min.	200 – 300	80 – 150

Drilling	Twist drills acc. to DIN 338
Cutting speed m/min.	max. 20
Chip flow	For a better chip flow, drills with an enlarged twist angle should advantageously be used. We recommend contacting the respective manufactures.

Available semi-products	Bar stock in round, square, hexagonal and flat, electrodes and cap tips for resistance welding.

Standards / Tolerances	
DIN EN 12 163	Round bars for general purpose
DIN EN 12 167	Profiles and rectangular bars for general purpose.

*) Brinell hardness at r.t. after 5 hours anneal and air cooling.

All statements as to the properties or utilization of the materials and products mentioned in this datasheet are only for the purpose of description. Guarantees in respect of the existence of certain properties or utilization at the material mentioned are only valid if agreed upon in writing.

DURO METALL GmbH
Albert-Einstein-Str. 1
70806 Kornwestheim
Tel.: **49 7154/8255-0, Telefax: **49 7154/8255-48
E-mail: info@duro-metall.de www.duro-metall.de 12/09