

Elmedur XS

Technical Datasheet

Short Name Code	CW106C CuCrZr	Chemical Composition (Reference values in %)	Cr 0,8	Zr c. 0,08	Cu balance
Classification	DIN ISO 5782 R.W.M.A.	Class A 2/3 Class 2			
Material-Properties	Precipitation hardened copper alloy with excellent hardness and high electrical and thermal conductivity, not bendable, for machining only.				
Applications	<ul style="list-style-type: none"> High performance electrodes for resistance welding. 				
Mechanical Properties (Reference values)	Conditions		solution annealed, cold drawn and aged		
	Cross section		<20 mm Ø		
	Hardness (typical)	HB 10/2,5	160		
	Tensile strength	N/mm ²	min. 540		
	Yield strength	N/mm ²	min. 450		
	Elongation L = 5 D	%	min. 8		
	Modulus of elasticity	kN/mm ²	108		
	Modulus of torsion	kN/mm ²	45		
	Squeeze strength	%	95 – 100 % of yield strength		
Physical Properties	Electrical conductivity 293 K (20 °C)	MS/m	min. 43		
	Electrical resistance 293 K (20 °C)	$\frac{\Omega \cdot \text{mm}^2}{\text{m}}$	0.023 (Reference values)		
	Coefficient of electrical resistance 273-573 K (0-300°C)	$\frac{1}{\text{K}}$	0.00367		
	Coefficient of thermal expansion 273-593 K (0-320°C)	$\frac{1}{\text{K}}$	17,0 · 10 ⁻⁶		
	Specific heat	$\frac{\text{W}}{\text{m} \cdot \text{K}}$	0,376		
	Thermal conductivity 293 K (20 °C)	$\frac{\text{J}}{\text{g} \cdot \text{K}}$	c. 320		
	Density	$\frac{\text{g}}{\text{cm}^3}$	8.9		
Available sizes	Rods				

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Machining (Reference values) Condition: precipitation hardened

Turning	Tungsten Carbide K 20	HSS THYRAPID 3207
Cutting speed m/min.	up to 300	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 manufacturers.

Standards / Tolerances

h11 as to ISO 286 T2	
DIN EN 12 163	Round bars for general purpose
DIN EN 12 165	Ingots for forgings
DIN EN 12 167	Profiles and rectangular bars for general purpose.

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.