

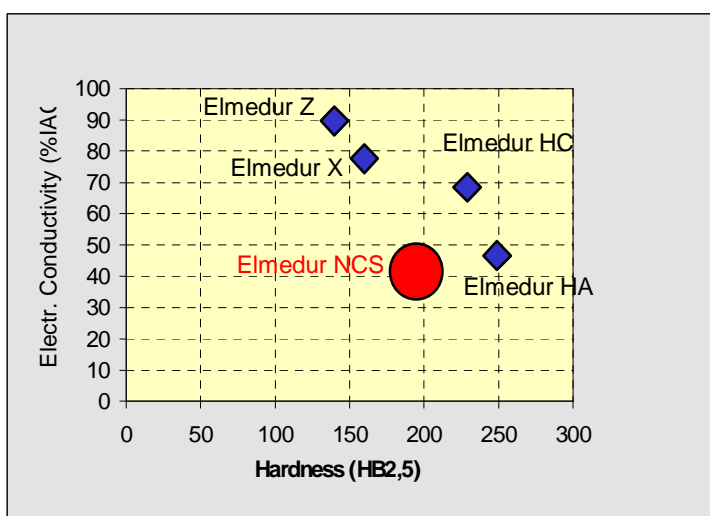
Elmedur NCS

Technical Datasheet

DURO METALL

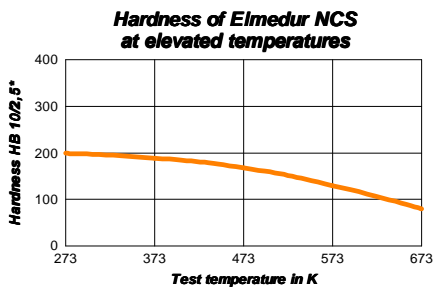
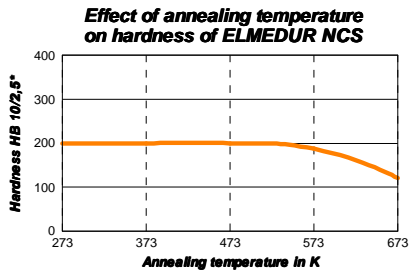
A company of the Wieland Group

Short Name	~CW111C	Chemical	Ni	Si	Cr	Cu
Code	~CuNi2SiCr	Composition	2,4	0,7	0,5	balance
Material-No.(old)	~2.0855	(Reference values in %)				
Material Properties	High thermal conductivity combined with good hardness and high-temperature. Good retention to tempering. Not suitable for case hardening and nitriding.					
Applications	<ul style="list-style-type: none"> Shanks for resistance welding electrodes Nozzles for submerged-arc welding devices 					
Hot forming	1.173 – 973 K (900-700 °C)			Cooling	air	
Heat Treatment			Time	Cooling	Hardness HB	
	Solution annealing	1.193 – 1.213 K (920 – 940 °C)	1 h	Water		
	Ageing	753 K (480 °C)	~4 h	in furnace	min. 190	
Mechanical Properties (Reference values)	Conditions	a g e d				
	Hardness	HB 10/2,5	190 – 210			
	Tensile strength	N/mm ²	min. 590			
	Yield strength	N/mm ²	min. 490			
	Elongation L = 5 D	%	min. 5			
	Modulus of elasticity	kN/mm ²	114			
Physical Properties	Electrical conductivity 293 K (20 °C)	MS/m	ca. 26 (45% IACS)			
	Coeff. of therm. exp. 293-373 K (20–100 °C)	1/K	16,0 · 10 ⁻⁶			
	Specific heat	J/g.K	0,42			
	Thermal conductivity 293 K (20 °C)	W/m.K	160			
	Density	g/cm ³	8.78			
Available sizes	Rods drawn, extruded or forged and turned ex stock, flat-, square or profile bars, furthermore forgings or machined parts against drawing on request.					



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Machining Directions (Reference values)

Turning		Tungsten Carbide K 20	HSS 1.3207
Cutting speed	m/min.	up to 150	up to 60
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 1.3207
Cutting speed (m/min)		up to 150	up to 60
Rake angle		positive	positive
Feed (mm/min).		c. 200	c. 80

Drilling		Twist drills in acc with 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.

Spark erosion		EDM and wire cutting is possible
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Polishability		good
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Standards/Tolerances

DIN EN 12 163	Round bars for general purpose
DIN EN 12 165	Forging billets
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.