

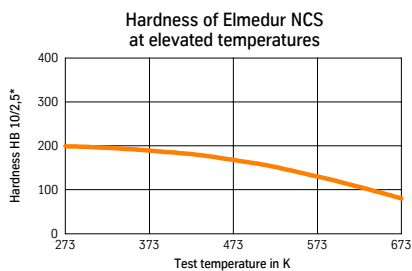
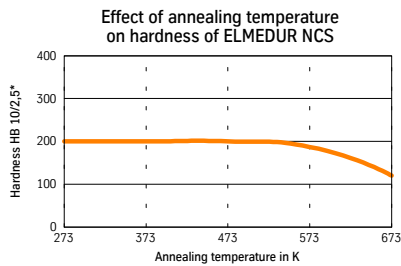
# Elmedur NCS

## Technical Datasheet

<b>Short Name</b>	~CW111C	<b>Chemical</b>	Ni	Si	Cr	Cu
<b>Code</b>	~CuNi2SiCr	<b>Composition</b>	2.4	0.7	0.5	balance
<b>Material-No.(old)</b>	~2.0855	(Reference values in %)				
<b>Material Properties</b>	High thermal conductivity combined with good hardness and high-temperature. Good retention to tempering. Not suitable for case hardening and nitriding.					
<b>Applications</b>	<ul style="list-style-type: none"> <li>• Pistons in cold chamber machines for aluminium and magnesium die-casting</li> <li>• Moulds for gravity casting of non-ferrous metals</li> <li>• Cooling inserts in moulds</li> </ul>					
	Hot forming	1.173 – 973 K	(900-700 °C)	Cooling	air	
<b>Heat Treatment</b>	Solution annealing	1.193 – 1.213 K	(920 – 940 °C)	Time	Cooling	Hardness HB
	Prec. hardening	753 K	(480 °C)	1 h	water	
				~4 h	in furnace	min. 170
<b>Mechanical Properties</b> (Reference values)	Conditions					
	Hardness	HB 10/2,5				170 – 210
	Tensile strength	N/mm <sup>2</sup>				min. 590
	Yield strength	N/mm <sup>2</sup>				min. 490
	Elongation L = 5 D	%				min. 5
	Modulus of elasticity	kN/mm <sup>2</sup>				114
<b>Physical Properties</b>	Electrical conductivity 293 K (20 °C)	MS/m				c. 26
	Coefficient of thermal expansion (20 – 100 °C) 293-373 K	$\frac{1}{K}$				16,0 · 10 <sup>-6</sup>
	Specific heat	$\frac{J}{g \cdot K}$				0,42
	Thermal conductivity 293 K ( 20 °C)	$\frac{W}{m \cdot K}$				160
	Density	$\frac{g}{cm^3}$				8.78
<b>Available sizes</b>	Rods drawn, extruded or forged and turned ex stock, flat-, square or profile bars, furthermore forgings or machined parts against drawing on request.					

# Elmedur NCS

## Technical Datasheet



### Machining Directions (Reference values)

#### Turning

	Tungsten Carbide K 20	HSS THYRAPID 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 THYRAPID 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. 15
Chip flow	For a better chip flow, drills with an enlarged twist angle should advantageously be used. We recommend contacting the respective manufactures.

#### Spark eroding

Polish ability EDM and wire cutting is possible good

#### 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.