

Alloy AERIS 1340

Technical Datasheet



Short name	~CuNi2SiCr		Chemical composition (Weight %)	Ni	Si	Cr	Cu
				2.4	0,7	0,5	balance
Material characteristics	High thermal conductivity combined with good hardness and high-temperature. Good retention to tempering. Not suitable for case hardening and nitriding.						
Application	- 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		
	Prec. hardening	753 K	480 °C	~4 h	in furnace	min. 170	
Mechanical Values (Typical)	Hardness		HB 10/2,5	170-220			
	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 (Typical)	Electrical conductivity 293 K (20 °C)		MS/m	c. 26			
	Coefficient of thermal expansion 293-373 K (20-100°C)		1/K	16.0·10 ⁻⁶			
	Heat capacity		J/g·K	0.42			
	Thermal conductivity 293 K (20 °C)		W/m·k	160			
	Density		g/cm ³	8.78			
Available semi-finished products and finished parts	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 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 K 20	HSS THYRAPID 3207	
	Cutting speed m/min.	up to 150	up to 60	
	Rake angle	positive	positive	
	Feed mm/min.	200	80	
	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.		
	Spark eroding	EDM and wire cutting is possible		
	Polish ability	good		
	Standards / Tolerances			
	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.