

Steel grade

Material No. / Werkstoff-Nr.	PREMIUM 1.4021
Description	X20Cr13
AISI/SAE	~420
Search for alternatives in the ABRAMS STEEL GUIDE [®]	www.steel-guide.eu/alternatives/1.4021

Specifications



€co-Präz[®] [€co]
L: 500 mm



Precision round steel
without machining allowance [PRS]
bright drawn / ground, ISO h9
L: 1.000 mm

Chemical composition AISI/SAE 420 (reference value %)

C	Si	Mn	P	S	Cr
0,16 - 0,25	0 - 1,0	0 - 1,5	0 - 0,04	0 - 0,015	12,0 - 14,0

Physical properties

Hardness (delivery condition)	max. 252 HB, tempered			
Tensile strength R _m (as received condition)	approx. 850 N/mm ²			
Working hardness	max. 47 HRC			
Thermal expansion coefficient 10 ⁻⁶ m/(m • K)	20 - 100°C	20 - 200°C	20 - 300°C	20 - 400°C
	10,5	11,0	11,5	12,0
Thermal conductivity W/(m • K)	20°C			
	30,0			

Technical properties

Martensitic chromium steel with good mechanical properties (tempered condition). With the ability to polish this material to a high gloss finish it is ideally suited as knife steel. Good forgeability, medium weldability and is conditionally acid resistant.

Applications

Automotive industry, power engineering, turbine and power plant construction, medical technology, mechanical engineering, petrochemical industry, cutting tool industry, knives, fasteners, architecture and decoration.

Heat treatment

	Temperature	Cooling	Hardness
Soft annealing	745 - 825°C	Furnace, air	max. 228 HB
	Temperature	Quenching in	
Hardening	950 - 1050°C	Air, oil, polymer	



Tempering diagram

