

1.4021 (X20Cr13)

Material Designation

1.4021 DIN
S42000 UNS
420 AISI

Standards

DIN EN 10088-3
DIN EN 10250-4
ASTM A 276
ASTM F899 (Type 420 A)

Chemical Composition Mass-%

	C	Si	Mn	P	S	Cr	Ni
min.	0,16	-	-	-	-	12,0	-
max.	0,25	1,0	1,0	0,04	0,03	14,0	1,00

Customer specific restrictions upon request

Properties

13% Cr martensitic steel with good corrosion resistance against chlorine-free, moderately aggressive media (PREN≈13).

AISI 420 mod. is scale resistant up to 1100 °F.

Material is suitable for high gloss polishing.

Delivery Condition

- ✘ quenched and tempered (+QT)
- ✘ quench., temp. and stress relieved (+QT +SR)
- ✘ annealed (+A) max. 220 HBW

Application Area

Components used in moderately corrosive environments with high demands on mechanical properties.

Typical Applications

- ✘ General mechanical engineering and apparatus engineering
- ✘ Chemical and petrochemical industry
- ✘ Hydraulic systems
- ✘ Surgical instruments
- ✘ Cutlery
- ✘ Decorative features and household

Mechanical Properties acc. to DIN EN 10088-3, longitudinal

Condition	Diameter [mm]	Yield strength [N/mm ²]	Tensile strength [N/mm ²]	Elongation [%]	Impact toughness [J] Charpy-V
+A	-	-	≤ 760	-	-
+QT700	≤160	≥ 500	700 - 850	≥ 13	≥ 25
+QT800	≤160	≥ 600	800 - 950	≥ 12	≥ 20

Heat Treatment Guideline values acc. to DIN EN 10088-3

	Temperature [°C]	Cooling medium
Annealing +A	745 - 825	Furnace, air
Quenching and tempering +QT700	950 - 1050 (Hardening) 650 - 750 (Tempering)	Oil, air Oil, air
Quenching and tempering +QT800	950 - 1050 (Hardening) 600 - 700 (Tempering)	Oil, air Oil, air

Quality

- ISO 9001
- ISO 14001
- ISO 50001
- Approvals acc. to standards like ABS, BV, DNV ...
- Customer specific approval certificates

Innovation

- Fully automated phased-array-ultrasonic testing up to dia. 1000 mm
- CO₂-reduction by innovative heat treatment solutions

Flexibility

- Product range from fine wire to forging
- Directly from stock close at hand

Individuality

- Dimensions
- Tolerances
- Surface qualities
- Delivery conditions

Your personal contact:

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