



### Characteristics and scope of application

- 1.4031 | AISI 420 has superior properties for hardenable surgical needle production processes.
- Modified production process ensures a microstructure with minimal core carbide segregation.
- Drillability and ductility are optimally designed to meet the customer's production requirements.
- Good corrosion resistance in moderate aggressive chlorine free solvents and organic acids
- Brilliant wire surfaces enhance productivity and reduce scrap rates

### Standard designations

- DN Meditech Designation 1.4031/70
- Alloy number / UNS / AISI 1.4031 / S42000 / 420X
- Standards DIN EN 10088-3 (X20Cr13) ; ASTM F899
- Typical chemical composition **C** 0.38% **Si** 0.40% **Mn** 0.40% **P** 0.025% **S** 0.018% **Cr** 13.50%

### Physical properties

Density	Young's Modulus	Curie point	Thermal conductivity at 20°C	Mean coefficient of thermal expansion
kg/dm <sup>3</sup>	GPa	°C	W/m*K	10 <sup>-6</sup> /K   RT to 500°C
7.7	213	720-750	31	11.4

### Mechanical properties

Ultimate tensile strength	Yield Strength	Elongation
MPa	MPa	%
650*	300*	20*
1000**	880**	5**

Ultimate tensile strength range ± 75MPa

\*fully annealed

\*\*cold worked