

## MIM-Material Specification and Applications

### Composition

**Material:** Martensitic stainless steel

**Standards:** AISI 420, ~DIN X39Cr13, ~1.4031

Typical composition::	Element	Content (%)
	C	0.15 – 0.50
	Cr	12.0 – 14.0
	Ni	-
	Si	≤ 1.00
	Mn	≤ 1.00
	Mo	-
	Fe	Balance
	Other	-

Properties	As sintered	Annealed	Hardened
Density	≥ 7.20 g/cm <sup>3</sup>	≥ 7.20 g/cm <sup>3</sup>	≥ 7.20 g/cm <sup>3</sup>
Hardness	≥ 500 HV1	200 - 300 HV1	550 - 650 HV1 (≥ 52 HRC)
Yield strength R <sub>p0.2</sub>	≥ 650 MPa	450 - 600 MPa	950 - 1150 MPa
Tensile strength R <sub>m</sub>	≥ 850 MPa	650 - 850 MPa	1050 - 1250 MPa
Elongation A	≥ 1 %	≥ 8 %	≥ 1 %
Surface quality R <sub>a</sub>	≤ 3.2 μm	≤ 3.2 μm	≤ 3.2 μm

### Application / remarks

AISI 420 is applied for components which require high tensile strength and moderate corrosion resistance. AISI 420 has better mechanical properties than AISI 410.