

MIM-Material Specification and Applications

Composition

Material:	Martensitic stainless steel
Standards:	AISI 420, ~DIN X39Cr13, ~1.4031

Typical composition::	<i>Element</i>	<i>Content (%)</i>
	C	0.25 – 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 ³	≥ 7.20 g/cm ³	≥ 7.20 g/cm ³
Hardness	≥ 500 HV1	200 - 300 HV1	550 - 650 HV1 (≥ 52 HRC)
Yield strength R _{p0.2}	≥ 650 MPa	450 - 600 MPa	950 - 1150 MPa
Tensile strength R _m	≥ 850 MPa	650 - 850 MPa	1050 - 1250 MPa
Elongation A	≥ 1 %	≥ 8 %	≥ 1 %
Surface quality R _a	≤ 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.