CORROSION AND HEAT RESISTANT STEEL

X6Cr17 (1.4016)

Excellence in Specialty Steel

Material Designation

1.4016	DIN
S43000	UNS
430	AISI

Standards

DIN EN 10088-3
DIN EN 10263-5
ASTM A276/276M

Chemical Composition Mass-%

	C	Si	Mn	P	S	Cr
min.	-	-	-	-	-	16,0
max.	0,08	1,0	1,0	0,040	0,030	18,0

Properties

X6Cr17 (1.4016) is a stainless ferritic chromium steel with good resistance to intergranular and stress corrosion cracking. It is resistant to water, moisture, water vapor, diluted organic acids and alkaline solutions, but is not resistant to seawater.

Application Area

Components subject to medium mechanical stress with good corrosion resistance in moderately aggressive environments with high demands on surface quality.

Delivery Condition

- Solution annealing (+AT), max. 200 HBW

Delivery form

Bright steel in bars

- 2 -16 mm: drawn, ground, polished
- > 14 mm: peeled, ground, polished

Typical Applications

- Household and kitchen appliances
- Architecture (interiors)
- Food industry
- Medical technology
- Mechanical and plant engineering
- Sanitary, heating and air conditioning technology

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

Diameter [mm]	Yield strength [N/mm²]	Tensile strength [N/mm²]	Elongation [%]
≤ 16 (drawn, ground, polished	≥ 300	450 - 700	≥ 8
> 14 (peeled, ground, polished	≥ 240	400 - 630	≥ 14

Physical properties by 20 °C

Spec. el. resistance [Ω mm²/m]	Thermal conductivity [W/m·K]	Specific heat capacity [kJ/kg·K]	Density [g/cm³]
0,60	25,0	0,46	7,7

Temperature [°C]	20 - 100	20 - 400
Thermal expansion coefficient x [10^{-6}/K]	10	10,5

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
- CO_2-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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Heat Treatment Guideline values acc. to DIN EN 10088-3

	Temperature [°C]	Cooling medium
Solution annealing(+AT)	750 - 850	Air

Hot forming acc. to DIN EN 10088-3

1100-800 °C, air cooling

Cold forming

The 1.4016 can be drawn, deep-drawn and bent. Note tendency to embrittlement below 20°C.

Weldability

Grade 1.4016 is difficult to weld. Welding is not recommended without restrictions due to possible grain growth and the associated embrittlement as well as a reduction in corrosion resistance.

Machining

Limited possibility due to long chip formation. Risk of built-up edge formation.

Polishability

Very good polishability.

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- ISO 14001
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