

Material Data Sheet

1.4571 (X6CrNiMoTi17-12-2)

Austenitic corrosion-resistant stainless steel

Short description In terms of corrosion resistance and mechanical properties, 1.4571 is comparable to 1.4404. However, 1.4571 is stabilized by the addition of titanium, which ensures carbon bonding. Therefore, 1.4571 is resistant to intergranular corrosion even after welding.

Standards and Designations	EN	1.4571
	DIN	X6CrNiMoTi17-12-2
	AISI	316Ti
	UNS	S31635

Chemical Composition

	C (Carbon)	Mn (Mangan)	Si (Silicium)	P (Phosphor)	S (Sulfur)	Cr (Chrome)	Ni (Nickel)	MO (Molybdenum)	Ti (Titanium)
min.	-	-	-	-	-	16,5	10,5	2,0	5xC
max.	0,08	2,0	1,0	0,045	0,030	18,5	13,5	2,5	0,7

General Properties	corrosion resistance	very good
	mechanical properties	moderate
	forgeability	good
	welding properties	excellent
	machinability	poor

Special Features	Usable up to 550°C
	Suitable for low temperatures
	Non-magnetic grade

Corrosion resistance In natural environments with low salt and chlorine content, 1.4571 exhibits good corrosion resistance. This material is resistant to intergranular corrosion both in the as-delivered and welded condition. However, 1.4571 is not seawater resistant. (PREN = 23.1 – 26.7)

Mechanical Properties at 20°C

Hardness HB	Yield strength Rp _{0,2} N / mm ²	Tensile strength R _m N / mm ²	Stretching A _{5,65}	Elastic modulus kN / mm ²
≤ 215	≥ 200	500 - 700	≥ 40%	200

Forgeability During the forging process, the forging is first heated to approximately 1150°C – 1180°C. Forging takes place within a temperature range of 1180°C – 950°C. Following this, the forging is cooled by air or water.

BANKVERBINDUNGEN

OLDENBURGER VOLKSBANK
 IBAN DE98 2806 1822 0065 3616 00
 BIC GENODEF1EDE

LZO RASTEDE
 IBAN DE07 2805 0100 0043 3308 93
 BIC SLZODE22XXX

OLB RASTEDE
 IBAN DE54 2802 0050 1443 1738 00
 BIC OLBODEH2XXX

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Weldability 1.4571 can be welded using all common welding processes, with or without filler metal. Post-welding heat treatment is not required. The corrosion resistance is reduced by tarnishing. These should be removed using chloride-free chemical or mechanical methods.

Machinability Due to the titanium additive, tool wear is higher than with comparable chromium-nickel-molybdenum steels.

Application areas Apparatus and container construction, construction industry, chemicals, petrochemicals, food industry, mechanical engineering, nuclear technology, pipeline construction

Physical Properties at 20°C	Density kg/dm ³	Electrical resistance (ohm) mm ² /m	Magnetizability	Thermal conductivity W/m K	Specific heat capacity J/kg K
	8,0	0,75	gering	15	500

Processing

cold forming	yes
cold heading	yes
polishability	no
open-die and drop forging	yes
machining	yes

Thermal treatment

Solution annealing (+AT)	1020 - 1120°C (cooling: water or air)
Hot forming	1200 - 900°C (cooling: air)

Notice The values and information listed above regarding the properties and/or usability of the material are for informational purposes only. This information is based on the manufacturer's experience.

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