

Material data sheet

Bars in grade

1.4305

Designation:

EU	USA
1.4305	UNS S30300
X8CrNiS18-9	303

Chemical composition (wt %):

C:	max. 0,10 %
Mn:	max. 2,00 %
P:	max. 0,045 %
S:	0,15-0,35 %
Si:	max. 1,00 %
Cr:	17,0-19,0 %
Ni:	8,00-10,00 %
Cu:	max. 1,00 %
N:	max. 0,10 %

Basic properties:

Density:	7,9 g/cm ³	Non-magnetic steel (cold work causes light magneticity)
Thermal conductivity:	15,3 W/m/K	
Electrical resistance:	730 μΩ.mm (20 °C)	

Mechanical properties:

Stav	Rp0,2 (MPa)	Rm (MPa)	A (%)	Z (%)
Solution annealing	min. 190*	500-750	min.45*	min 50*

*Values marked in this way are only informative typical values, which are not specified by the standard.

Other properties:

Corrosion resistance (note: it should be taken into account that corrosion resistance is influenced by many factors and that it is a typical corrosion resistance which may vary due to the specific influences acting on the steel)

Nitric acid	good
Phosphoric acid	average
Sulphuric acid	average
Acetic acid	average
Sodium carbonate	average
Sodium chlorite	average
Humidity	good
Sea water	limited use

Treatment:

Machining	+++
Automatic machining	+++
Forging	0/+
Cold forming	+++
Polishing	0
Welding	0/+ (to reduce some undesirable effects of welding, the specified welding procedure must be followed, others remain)

Steel 1.4305 is not hardenable by heat treatment. It can be hardened by cold working.

Delivered tolerances:

Rolled descaled bars	k13
Cold finished bars (drawn, turned, ground)	f,g,h 6-11
Hexagonal drawn bars	h11

Typical applications:

- Fastening material
- Housings
- Shafts
- Various industries - generally all parts that need to be machined and meet the required corrosion resistance