

## First Choice for Medical Technology

Material datasheet for 1.4435 | AISI 316L | X2CrNiMo 18 14 3

1.4435 is an **anti-rust austenitic chromium-nickel-molybdenum stainless steel** with low carbon content.

With a molybdenum content over 2.5%, the material is highly corrosion-resistant and is therefore frequently used in applications in the taps and valves industry, and in medical technology. The material is also designated as urea grade.

### WELDING

The material can be easily welded with all processes. 1.4430 is recommended as the welding filler. Its low carbon content means 1.4435 is IC-resistant to 400°C even in its welded state. It is imperative that any scale or heat tints caused by welding, are mechanically or chemically removed. Corrosion-resistance is restored through subsequent, suitable passivation.



### BAR STEEL

#### AVAILABLE DIMENSIONS

13, 17, 19, 22, 24, 27, 30, 35, 40, 45, 50, 52, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 105, 110, 115, 120, 125, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 350, 400 mm



#### APPLICATIONS

- Electronic equipment
- Manufacture of synthetic fibres
- Oil industry
- Medical and pharmaceutical industry
- Chemical industry

#### MACHINING

Due to its strain hardening tendency and poor thermal conductivity, machining should be performed with tools made from high-grade high-speed steel (effective cooling required), or preferably using carbide tools.

## MECHANICAL PROPERTIES UNDER HIGH TEMPERATURES

Tensile strength value	Delivery state	Temperature °C				
		100	200	300	400	500
Rp0.2	solution annealed	≥165	≥137	≥119	≥108	≥100
Rp1.0	solution annealed	≥200	≥165	≥145	≥135	≥128

## MECHANICAL PROPERTIES AT ROOM TEMPERATURE

Stated values apply to bar steel up to 160 mm max.  
(EN 10088-3)

<b>Yield strength Rp0.2 (N/mm<sup>2</sup>):</b> at least 200	<b>Elongation at fracture A5 (%):</b> transverse: min. 30 longitudinal: min. 40
<b>Yield strength Rp1.0 (N/mm<sup>2</sup>):</b> at least 235	<b>Notch-impact strength (ISO-V) J:</b> transverse: min. 60 longitudinal: min. 100
<b>Tensile strength Rm (N/mm<sup>2</sup>):</b> 500 - 700	

## CHEMICAL ANALYSIS

Chem. element	1.4435	
	min.	max.
C	-	0.03
Si	-	1.0
Mn	-	2.0
P	-	0.045
S	-	0.03
Cr	17.0	19.0
Mo	2.5	3.0
Ni	12.5	15.0
N	-	0.10

## HEAT TREATMENT

<b>Solution annealing:</b> 1020 - 1120 °C	<b>Cooling:</b> Air or water
<b>Hot forming:</b> 900 - 1200 °C	

## STAPPERT Deutschland GmbH

Willstätterstraße 13 · 40549 Düsseldorf  
T +49 211 5279-0 · F +49 211 5279-177

deutschland@stappert.biz  
deutschland.stappert.biz



STAPPERT

INOX INTELLIGENCE.