

The material AISI 316 / EN 1.4401 is an austenitic chrome-nickel-molybdenum steel. The molybdenum content provides high corrosion resistance to non-oxidising acids and chlorine-containing materials. This stainless steel grade has low magnetization and is suitable for welding, forging and cold forming. Please note, however, that the material AISI 316 / EN 1.4401 does not have any resistance to intergranular corrosion in the welded state.

**Chemical composition (% by mass according to DIN EN 10088-3 for EN 1.4401)**

C	Si	Mn	P	S	N	Cr	Cu	Mo	Ni	Ti	Other
≤ 0,07	≤ 1,00	≤ 2,00	≤ 0,045	≤ 0,03	≤ 0,10	16,5 – 18,5	-	2,00 – 2,50	10,0 – 13,0	-	-

**Specification**

EN-grade	1.4401
EN-short name	X5CrNiMol17-12-2
EN-standard	10088-3
AISI	316 *
B.S.	316S31 *
JIS	SUS316 *
Microstructure	austenite

**Physical properties**

Magnetizability:	low
Density(kg/dm <sup>3</sup> )	7,9
Thermal conductivity (up to 20°C)	15
Electronic resistance at room temperature (in Ω mm <sup>2</sup> /m)	0,73

**Possible fields of application**

automobile industry  
 construction sector  
 pressure vessel construction  
 aviation industry  
 food industry  
 petrochemistry  
 and more

**Mechanical properties at room temperature in solution annealed condition (according to EN 10088-3 for EN 1.4401)**

Ø in mm	Hardness in HB	Yield strength		Tensile strength R <sub>m</sub> in Mpa	Elongation A in%
		R <sub>p0,2</sub> in Mpa	R <sub>p1,0</sub> in Mpa		
≤ 160	≤ 215	≤ 200	≤ 235	500-700	40
160 < d ≤ 250	≤ 215	≤ 200	≤ 235	500-700	-

**Yield strength at elevated temperature in solution annealed condition (according to EN 10088-3 for EN 1.4401)**

Temperature in °C	100	150	200	250	300	350	400	450	500	550
R <sub>p0,2</sub> in Mpa	175	158	145	135	127	120	115	112	110	108
R <sub>p1,0</sub> in Mpa	210	190	175	165	155	150	145	141	139	137

(\* in accordance with)

#### Heat treatment and hot forming

Solution heat treatment 1020-1120 °C  
(cooling by air or water)

Hot forming 1200-900 °C  
(cooling by air)

#### Welding

The material AISI 316 / EN 1.4401 has a medium weldability and can be used with many common processes such as arc or TIG welding. For submerged arc and gas fusion welding this stainless steel grade is only of limited use.

Please note that the material is no longer resistant to intergranular corrosion in the welded state.

If you have further questions about this or any other product, please contact our team at +49 2263-9240-0 or email [agst@agst.de](mailto:agst@agst.de)

#### Please note:

The information given in this data sheet has been compiled to the best of our knowledge and is based on the current version of the relevant standard.

It is considered for reference only and we assume no liability for any errors.