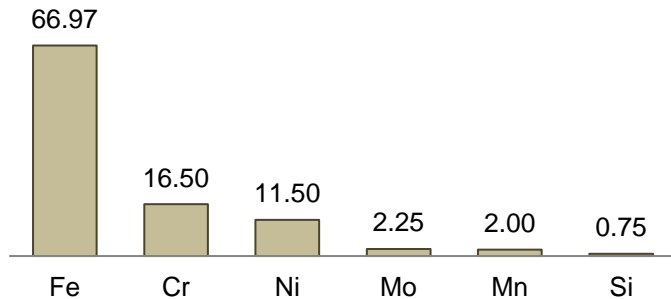


AISI 316L / 1.4404

Austenitic Stainless Steel

Chemical composition



Alloy denomination

N° Robert Laminage SA: 964
 EN : 1.4404
 EN Designation : X2 CrNiMn 17-12-2
 UNS*: S31603
*Unified Numbering System (USA)

Properties and main applications

The AISI 316L / EN1.4404 is an austenitic stainless steel that contains molybdenum, which intend to provide not only an excellent pitting and crevice corrosion resistance, but also to chlorides, sulphuric and organic acids. Thanks to the complete austenitic structure in the annealed condition the AISI 316L / EN 1.4404 is non-magnetic, but may become slightly magnetic as a result of phase transformation induced by cold working.

Belonging to the family of very low carbon content of the Cr-Ni-Mo stainless steels, this alloy becomes almost insensitive to intergranular corrosion.

Easily weldable, it is still recommended to do the welding process with the matching filler metal in order to favour the solidification of a small amount of ferrite in the microstructure and consequently minimize the cracking susceptibility. Careful cleaning and degreasing of weld area is highly recommended, but post welding heat treatment is not necessary, but may be advisable for equipment required to work in reducing acid environments, such as hydrochloric and hydrofluoric acids.

Physical properties

		Units
Density 20° C	8.0	Kg/dm ³
Melting point	1410	°C
Modulus of elasticity, longitudinal	200	GPa/mm ²
Thermal Conductivity	15	W/m•K
Electrical Conductivity	1.3	MΩ•mm ²
Electrical resistivity	75	μΩ•cm
Coefficient of linear expansion	18	10 ⁻⁶ •K ⁻¹
Magnetic properties (annealed condition)	Non-magnetic	μ
Poisson ratio	0.33	



Workability

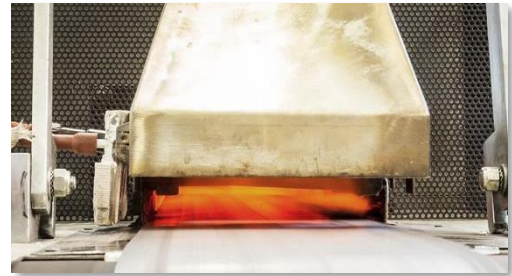
	Grade
Corrosion resistance	++++
Hot working	-
Cold working	+++
Plating	+++
Diamond cutting	-
Surface Nitration	-
Polishing	+++
Welding	+++
Brazing	+++
Machining	++

+ bad
 ++ medium
 +++ good
 ++++ excellent
 - no information
 N/A not-applicable for this alloy



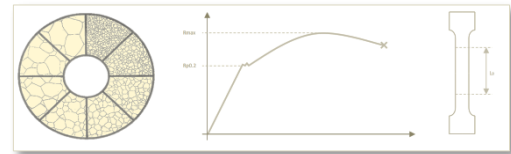
Thermal treatment / Hardening

Annealing temperature	1050°C
Stress relieving heat treatment temperature	-°C
Mill hardened as delivered	-°C
Age hardened by customer	-


Mechanical Properties:

AISI 316L / 1.4404

 Hardness Range [HV] :
 150 - 450

 Tensile Strength Range [MPa] :
 550 - 1550


	State	Hardness (HV : Vickers)		Rm (MPa)		Rp 0.2 (MPa)		Elongation (%) avec L ₀ = 50mm	Grain Size (µm)	
		min	max	min	max	min	max		min	max
According to the technical data from the melter										
C550	Recuit	160	230	550	700	235	-	>= 40	-	-
C770	¼ dur	220	290	770	920	400	1100	>= 15	-	-
C870	½ dur	265	320	870	1020	500	1200	>= 7	-	-
C1100	Dur	300	360	1000	1250	750	1350	>= 4	-	-
C1200	Extra Dur	>= 380		>= 1200		>= 1300		-	-	-

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