



MATERIAL No.: S30403/AISI304L/1.4306

DESCRIPTION

EN symbol (short)	X2CrNi19-11	Density kg/dm³	7,9
AISI	AISI 304L	Hardness	
UNS	S 30403	Composition	chromium nickel steel
AFNOR	Z3CN19-11	Category	Stainless steels
BS	304S11		steel, resistant to rust and acids
		Structure	austenitic
		Corrosion	resistant to intergranular corrosion high corrosion resistance

CHEMICAL COMPOSITION

		C	Si	Mn	P	S	Cr	N	Ni
1.4306	Min %						18,00		10,00
	Max %	0,03	1,00	2,00	0,045	0,015	20,00	0,110	12,00
(Key to steel 2010)									
AISI 304L	Min %						18,00		10,00
	Max %	0,035	0,75	2,00	0,040	0,030	20,00		13,00
S 30403									
ASTM A 213 S 30403									

PHYSICAL PROPERTIES

Property	Value
Density: kg/dm³	7,9
Rockwell Hardness Number max.	B 90

MECHANICAL PROPERTIES (20°C / 68°F)

Yield strength (Mpa)/ksi	25 (110)	TP 304L (ATM A 249)
Tensile strength Rm Mpa/ksi	70 /(485)	TP 304L (ATM A 249)
Elongation (%)	35 in 2 in. or 50mm	TP 304L (ATM A 249)

TEMPERATURE INFORMATION

Application area

Operation temperature	-454 °F to 662 °F	(in strain situation III (to -454°F))
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Solution heat treatment

Working temperature	1832 °F to 2012 °F
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Explanation report	cool down: water, air
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Solution heat treatment

Working temperature	1562 °F to 2102 °F
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Explanation report	cool down: air
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STANDARDS / INFORMATION

Standards	Description
ASTM A 182	Standard Specification for Forged or Rolled Alloy-Steel Pipe Flanges, Forged Fittings and Valves and Parts for High-Temperature Service
ASTM A 213	Standard Specification for Seamless Ferritic and Austenitic Alloy-Steel Boiler, Superheater, and Heat-Exchanger Tubes
ASTM A 240	sheet metal and ribbons from stainless Cr and Ni pressure containers
ASTM A 249	Standard Specification for Welded austenitic steel boiler, Superheaters, heat-exchangers, and condenser Tubes
ASTM A 269	Standard Specification for Seamless and welded, austenitic, and stainless steel tubing for general purposes
ASTM A 276	Rods and cross-sections made of stainless and heat-resistant steel
ASTM A 312	Standard Specification for Seamless and welded austenitic stainless steel pipes
ASTM A 403	Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings
DIN 17740	
DIN EN 10028-1 (09/2005)	flat products made from steel for pressure tanks Part 1 General requirements
DIN EN 10028-2 (09/2009)	flat products made from steel for pressure tanks non-alloy and alloy steels with set properties in high temperatures
DIN EN 10028-7	
DIN EN 10028-7 (02/2008)	flat products made from steel for pressure tanks Part 7: Stainless steel
DIN EN 10088-3 (09/2005)	Stainless steels. Technical delivery conditions for semi-finished products, bars, rods, wire selection and bright products of corrosion resisting steels for general and construction purposes
DIN EN 10216-5 (11/2004+B1)	Seamless steel tubes under compression load Stainless steel tubes
DIN EN 10217-7 (05/2005)	Welded steel tubes under compression load. Stainless steel tubes
DIN EN 10296-2 (02/2006)	welded circular steel pipes for machine construction and general technical

	applications, stainless steel
DIN EN 10296-2 (02/2006)	Welded circular steel pipes for machine construction and general technical service stainless steel
DIN EN 10297-2 (02/2006)	Welded circular steel pipes for machine construction and general technical service stainless steel. Pipes made from stainless steel
SEW 310 (08/1992)	physical properties of steel

PROCESS INFORMATION

Welding	
- Material classification acc. CEN ISO/TR 15608	8.2
- Type	well weldable
- Add. material	1.4316;1.4551
- Hints	no heat treatment necessary before or after welding process

MAIN FIELDS OF APPLICATION

Details of application	This steel is well suited for inside and outside applications, due to its resistance to organic/inorganic weak acids, water and moisture. It's polishable and fit for deep drawing. Please do a test run before using this material with strong acids. Not suited for application areas involving sea water.
Certifications	Certified for purchase obligating pressure containers in accordance to PED Delivery conditions according to Specifications
Chemical Industry	Detergent production and soap making
Environmental technology	clarification plants
petrochemical industry	
building industry	hand rail construction
cellulose/paper industry	devices chemical digestion containers bleaching containers

RANGE OF PRODUCTS

Product type	Product
Plates / Sheets	plates/sheets plate/sheet cuts
Fittings	welded elbows

	welded reductions Welded T-pieces seamless elbows seamless reductions seamless T-pieces Other Fittings, Nipples
Flanges / Collars / Flared tube ends	Various flanges (weld neck flange, blind flange etc.)
Bumped boiler ends / caps / round blanks	from sheets
Pipes / Tubes	welded pipes/tubes seamless pipes/tubes
Bar steel	round bar steel

[Pipe/Tube/Fitting/Flange/Valve/Plate](#)

Stainless Steel/Nickel Alloy/Duplex

