MULTIAlloys

ADDING VALUE THROUGH EXPERIENCE

ALLOY 310

ALLOY INFORMATION SHEET | UNS S31000 (W Nr 1.4841)

HEAT AND/OR CREEP RESISTANT | CORROSION RESISTANT | OTHER

Alloy 310 is an austenitic stainless steel designed for high temperature applications. The high chromium and nickel content enable this alloy to resist oxidation in air, when in continuous service, at temperatures up to 1150 deg C. It is widely used in moderately carburizing atmospheres mainly encountered in petrochemical environments. Alloy 310 is susceptible to chloride ion stress corrosion cracking but is superior to Alloys 304 and 316 in this regard. The low carbon variant, 310S, is suggested for applications where sensitization and subsequent corrosion, by high temperature gasses or condensate during shutdown, may pose a problem. A high silicon variant, Alloy 314 (W Nr 1,4841), has better oxidation resistance than 310 and 310S.

NOTE: Elevated temperature mechanical property data available upon request.

NOMINAL COMPOSITION 310S (%)								
	Ni	Cr	Fe	Mn	Si	C	Other	
	20	25	52	1,6	0,5	0,05		

APPLICABLE SPECIFICATIONS	
PLATE, SHEET & STRIP	ASTM A 240 (310S)
PIPE, TUBE	ASTM A 312
BAR	ASTM A 276 / A479
FASTENERS	
FORGINGS	
FITTINGS	
WELDING PRODUCTS	

TYPICAL MECHANICAL PROPERTIES #	
TENSILE STRENGTH (MPa)	625
YIELD STRESS (MPa)	350
ELONGATION (in 50mm)	40%
HARDNESS (Brinell)	172

TYPICAL PHYSICAL PROPERTIES #	
DENSITY (kg / cu m.)	7900
YOUNGS MODULUS (GPa)	200
THERMAL CONDUCTIVITY (W/ m.C)	18.5
THERMAL EXPANSION (per Deg C)	0,0000159

 # - At room temperature

FABRICATION

Alloy 310 can be welded and brazed by all methods. If carbide precipitation will be a problem in corrosive environments, 310S is recommended, unless the welded assembly can be heated to 1030 deg C a nd water quenched. The initial forging temperatures should be between 1150 deg C and 1200 deg C. The finishing temperatures should be above 980 deg C. Small forgings should be cooled rapidly in air or in water. Heavy duty lubricants may be used in cold forming to prevent galling and die wear. When machining the alloy will work harden more rapidly and require more power to cut than plain carbon steels. Machine tools should be rigid and they should not be used at more than 75% of their related capacity.

Please call for details of Stock, Delivery and Price

Detailed technical data available upon request

Note: Data shown are typical and full research should be done to determine the usefulness in any application or design. No warranty is expressed or implied and we assume no responsiblity for the accuracy, completeness or usefulness of the content.

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