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Industrial Piping Products

AISI 304L / UNS S30403 / DIN 1.4307

Low Carbon Austentic Stainless Steel

Alloy 304L Data Sheet

Introduction

Alloy 304L is an extra low carbon version of type 304 chrome-nickel austenitic alloy. It is typically used for welded applications that must resist intergranular corrosion. It is strong, light, ductile, aesthetically pleasing and readily available in a variety of forms. It often eliminates the necessity of annealing weldments except for applications specifying stress relief.

Chemical Composition (Typical)

Element	Limits	
	min	max
Carbon	0.000	0.030
Manganese	0.000	2.000
Phosphorus	0.000	0.045
Sulphur	0.000	0.300
Silicon	0.000	0.750
Chromium	16.000	18.000
Nickel	10.000	14.000
Molybdenum	2.000	3.000
Nitrogen	0.000	0.100
Iron	Remainder	

Mechanical Properties (typical)

Parameter	Value
Yield 0.2 % (ksi/Mpa), Min	170
Tensile (ksi/Mpa), Min	485
Elongation (% in 50mm), Min	40
Reduction in Area, %	50
Hardness (HB), Max	217

Physical Properties

Parameter	Value
Density (Kg/m^3)	8000
Elastic Modulus (Gpa)	200
Co-eff of Expansion (µm/m/°C)	16.9
Thermal Condc. (W/m.K)	16.3
Electric Resistivity (nΩ.m)	740

Corrosion Data

Type 304L alloy show a lower corrosion rate than the higher carbon Type 304 alloy, considering formic acid, sulfuric acid and sodium hydroxide else 304L and 304 alloys shows same corrosion rate in most corrosive environments. Low carbon offer an additional advantage in highly corrosive applications where intergranular corrosion is a hazard.

Equivalent Grade Designation

AISI 304L
UNS S30403
BS 304S11
DIN EN 1.4307
00Cr19Ni10
Z3 CN 18-10
SS 2352

Available Product Forms

Round, Sqaure, Hexagon & Flat Bars
Seamless / Welded Pipes
Seamless / Welded Tubes
Hot & Cold Rolled Plates & Sheets
Forged Bars
Buttweld Pipe Fittings
Forged Fittings
Ferrule Compression Fittings
Forged Flanges
Valves
Guages

Common Manufacturing Specifications

AMS 5511, 5569, 5584, 5647.
ASME SA-182, SA-213, SA-240, SA-249, SA-312, SA-403, SA-479, SA-688
ASTM A182, A213, A240, A249, A269, A270, A276, A312, A314, A336, A358, A368, A403, A409, A473, A478, A479, A493, A511, A554, A580, A632, A666, A688, A774, A778, A793, A813, A814, A851, A924, A943, A965, A988, F593, F594, F738, F836, F837, F879, F880.

Alternate to Alloy

301 higher work hardening rate required for roll or stretch formed components.
F20S Lower cost & easy fabrication.
303 Higher machinability needed with lower corrosion resistance
316 Higher resistance to pitting and crevice corrosion in chloride environments.
430 Lower cost & reduced corrosion resistance and fabrication characteristics needed.

Applications & Industries

Food processing equipment
Automotive and aerospace structural use
Chemical containers
Architectural Applications
Marine Applications
Fasteners
Heat exchangers

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