

904L is an austenitic alloy designed for a middle to high level of corrosion resistance. The alloy contains high levels of chromium and nickel with additions of molybdenum and copper to provide added corrosion resistance. The high nickel (25%) and molybdenum (4.5%) contents of 904L provide good resistance to chloride stress corrosion cracking, general and chloride pitting corrosion resistance above the levels of 316 and 317 stainless. The copper addition provides added resistance to hot phosphoric acid and dilute sulfuric acid.

Specifications

UNS: N08904 ASME: SB-625, SB-673, SB-674, SB-677, SB-649

Chemical Composition, %

	Ni	Cr	Mo	Mn	Cu	Si	C	S	P	Fe
MIN	23	19	4.0	—	1.0	—	—	—	—	—
MAX	28	23	5.0	2.0	2.0	1.0	0.02	0.035	0.045	balance

Features

Critical Crevice Corrosion Temperature*

Alloy	316	317	904L	AL-6XN®	625
Temperature, °F	27	35	65	113	113

* ASTM procedure G-48, 10% ferric chloric solution

Applications

- Tubesheets
- Acid and fertilizer production
- Utility scrubbers
- Pickling equipment

Physical Properties

Density: 0.287 lb/in³ Electrical Resistivity: 680 Ohm-circ mil/ft

Temperature, °F	70	212	392	750	1475
Coefficient of Thermal Expansion* in/in°F x 10 ⁻⁶	—	8.5	—	9.2	10.1
Thermal Conductivity Btu • ft/ft ² • hr • °F	6.6	6.8	8.8	—	—

* 70°F to indicated temperature.

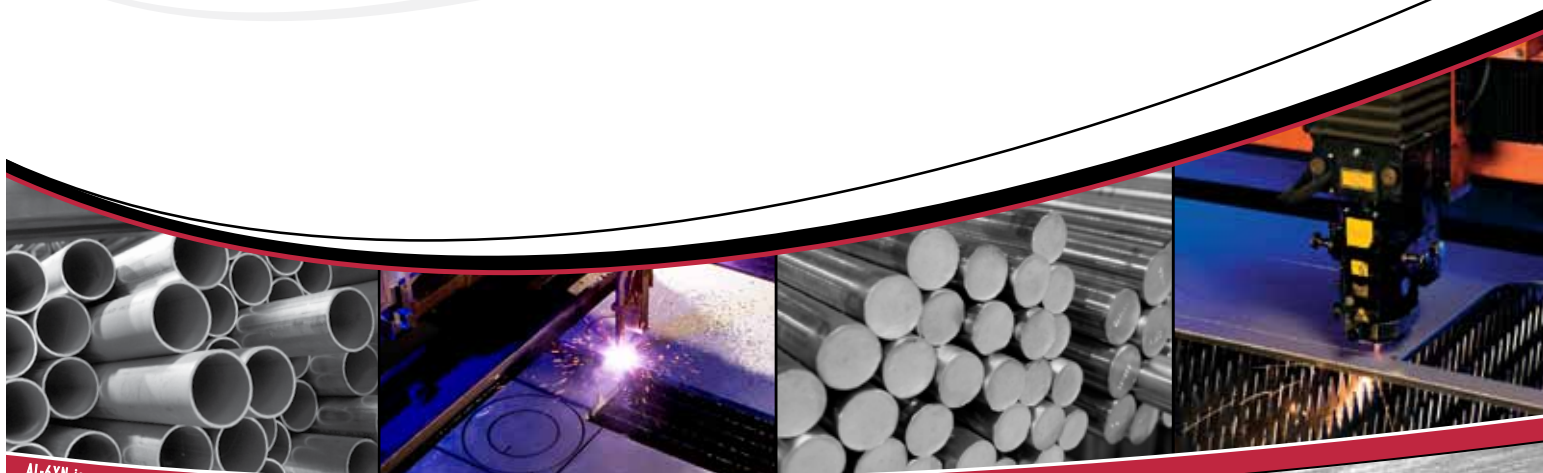
Mechanical Properties

Minimum Specified Properties, ASME SB 625

Ultimate Tensile Strength, ksi	71
0.2% Yield Strength, ksi	31
Elongation, % in 2"	35
Hardness, Rockwell B	70-90



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