ROLLED METAL PRODUCTS
STAINLESS | ALUMINUM | SPECIALTY ALLOYS

TECHNICAL DATA SHEET

TYPE 310S (UNS S31008)

STAINLESS STEEL

Description

Type 310S is a high temperature chromium nickel austenitic stainless steel with high creep strength that resists oxidation at temperatures up to 2000°F in dry air. Type 310S forms a tenacious scale at high temperature and is resistant to spalling and performs better than Type 309 in thermal cycling applications. Type 310 has good sulfidation resistance and good resistance to carburization in moderately carburizing atmospheres. Type 310S is the low carbon version of Type 310 and is utilized for ease of fabrication due to its better formability and weldability. Type 310S is non-magnetic in the annealed and cold worked conditions and is as resistant to corrosion as Type 304/304L.

RMP Midwest
12550 Lombard Lane
Alsip, IL 60803

RMP Northeast
450 Winks Lane
Bensalem, PA 19020

RMP South
711 Maddox Simpson Pkwy.
Lebanon, TN 37090

Chemical Composition

Chemical Composition (wt%) limits as specified in ASTM A240 and ASME SA240*.

Element	310S
Carbon	0.08
Chromium	24.0-26.0
Nickel	19.0-22.0
Manganese	2.00
Silicon	1.50
Phosphorus	0.045
Sulfur	0.030

** Maximum, unless range is indicated*

Mechanical Properties

Mechanical property requirements for annealed product as specified in ASTM A240 and ASME SA240.

Property	310S
Yield Strength, min. (ksi)	30
Tensile Strength, min. (ksi)	75
Elongation, min. (%)	40
Hardness, max. (R_b)	95

Physical Properties

Physical properties for Type 310S stainless steel

Property	310S Data
Density, lb/in^3	0.290
Modulus of Elasticity, psi	29×10^6
Coefficient of Thermal Expansion, 68-212°F, /°F	8.8×10^{-6}
Thermal Conductivity, Btu/ft hr °F	8.0
Specific Heat, Btu/lb °F	0.12
Electrical Resistivity, Microohm-in	30.7

Standards

Typical standards for Type 310S stainless steel

310S
ASTM A240
ASME SA240
AMS 5521