

## MATERIAL DATASHEET

### Alloy 310/310S Stainless Steel

**UNS: S31008/S31009**
**EN-DIN: 1.4845**

Type 310 (UNS S31008) is a high-temperature, austenitic chromium-nickel stainless steel with excellent oxidation resistance up to 2000°F (1093°C) in dry air. It offers high creep strength, good mechanical properties, and strong resistance to thermal cycling, outperforming Type 309 in these conditions.

Alloy 310S (UNS S31009) is a low carbon version, with better resistance to sensitization and embrittlement during service.

Applications include: Kilns, thermowells, refractory anchor bolts, combustion chambers, retorts, muffles, and food processing equipment.

#### Nominal Composition

	C	Mn	P	S	Si	Cr	Ni
min	-	-	-	-	-	24.0	19.0
max	0.25 (0.08)	2.0	0.045	0.030	1.50	26.0	22.0

#### Physical Properties

	At 68°F	At 20°C
Density	0.289 lb./in <sup>3</sup>	8.0 g/cm <sup>3</sup>
Modulus of Elasticity (x 10 <sup>6</sup> psi)	29 x 10 <sup>3</sup> ksi	200 GPa
Coefficient of Expansion	8.8 x 10 <sup>-6</sup> μin/in°F (32-212°F)	15.9 μm/mK (0-100°C)
Electrical Resistivity	30.7 μohm.in	0.78 μohm.m
Thermal Conductivity	8 BTU/ft-hr-°F	14.2 W/m.°C (100°C)

#### Applicable Specifications

Strip and Foil | ASTM A240, ASME SA240, AMS 5521

#### Typical Mechanical Properties – Typical Room Temperature Mechanical Properties

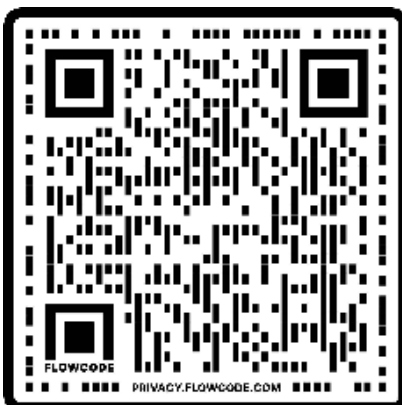
Condition	Tensile Strength (UTS)	0.2% YS	Elongation % in 2" (50.8 mm)	Hardness Rockwell
Annealed	75 ksi	30 ksi	40%	95 HRB

Typical mechanical properties are based on ASTM A240

\*Tempered Properties available upon request\*

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