

MATERIAL DATASHEET

Alloy 302 Stainless Steel

UNS: S30200

Alloy represents an excellent combination of corrosion resistance and fabricability. Past users of 302 stainless are generally now using 304 alloy since AOD technology has made lower carbon levels more easily attainable and economical. There are instances, such as in temper rolled products, when 302 alloy is preferred over 304 since the higher carbon permits meeting of yield and tensile strength requirements while maintaining a higher level of ductility (elongation) versus that of the lower carbon T304. The true 302 melt is rare as most are using 304 to apply as 304 and 302 applications. All 304 can qualify as 302 since it is a subset of 302 however not all 302 can be 304.

Nominal Composition

	C	Mn	P	S	Si	Cr	Ni	N	Fe		
min	-	-	-	-	-	17.0	8.0	-	-		
max	.15	2.0	0.045	0.030	0.75	19.0	10.0	0.10	BAL		

Physical Properties

	At 70°F	At 20°C
Density	0.285 lb./in ³	7.90 g/cm ³
Modulus of Elasticity (E)	29.0 x 10 ³ ksi in tension	200 x 10 ³ MPa in tension
Coefficient of Expansion	9.2 x 10 ⁻⁶ microinches/in.-°F (68-212°F)	16.6 μm/m-°C (20-100°C)
Electrical Resistivity	28.3 μ ohm.in	72 μ ohm.cm
Thermal Conductivity	9.4 Btu-in./ft. ² hr.-°F (100°C)	16.2 W/m-K (100°C)

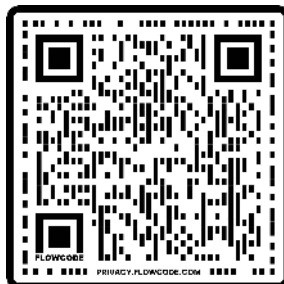
Applicable Specifications

SA-240, ASTM A240

Typical Mechanical Properties – Typical Room Temperature Mechanical Properties

Condition	Tensile Strength (UTS)	0.2% YS	Elongation% in 2" (50.8 mm)	Hardness Rockwell
Annealed	95 ksi (655 MPa)	42 ksi (290 MPa)	55	84 HRBW

Typical mechanical properties are based on AK source, ASTM A240



ELGILOY.COM

LIMITATION OF LIABILITY AND DISCLAIMER OF WARRANTY:

The content in these data sheets is provided primarily by third-party melting mills and is provided for reference only. It is not intended for engineering or design.

Applications may be discussed, however, Elgiloy Specialty Metals does not recommend or endorse any material for any particular end use or application.

In no event will Elgiloy Specialty Metals be liable for any damages whatsoever arising from the use of the information included in the data sheets.

The data included in this data sheet are typical values and may vary.

Elgiloy Specialty Metals makes no representations or warranties, express or implied, as to the accuracy, completeness, condition, suitability, performance, fitness for a particular purpose, or merchantability of any information contained in any data sheet.