

# 305 STAINLESS STEEL

UNS S30500



Type 305 is an austenitic chromium-nickel stainless steel that can be spun and deep drawn more easily due to an increased nickel content that decreases work hardening. It is nonmagnetic and cannot be hardened by heat treatment.

Typical uses include appliances, kitchen utensils, tank covers and other deep drawn parts.

## COMPOSITION

	%
Carbon	0.12 max.
Manganese	2.00 max.
Phosphorus	0.045 max.
Sulfur	0.030 max.
Silicon	1.00 max.
Chromium	17.00 - 19.00
Nickel	10.00 - 13.00
Iron	Balance

## SPECIFICATIONS

AMS 5514  
ASTM A 240  
QQ-S-766

## MECHANICAL PROPERTIES

Typical Mechanical Properties\*

Condition	UTS ksi (MPa)	0.2% YS ksi (MPa)	Elongation % in 2" (50.8 mm)	Hardness Rockwell	Impact Strength Izod V-Notch ft-lbs (J)
Annealed	85 (586)	38 (262)	50	B80	110 (140)

\*Annealed condition

## AVAILABLE FORMS

AK Steel produces Type 305 Stainless Steel in thicknesses from 0.01" to 0.125" (0.25 to 3.18 mm) and widths up to 48" (1219 mm). For other thicknesses and widths, inquire.

## PHYSICAL PROPERTIES

Density, 0.29 lbs/in<sup>3</sup>  
7.99 g/cm<sup>3</sup>

Electrical Resistivity, microhm-in  
(microhm-cm) 68°F (28.4°C)  
28.4 (72.0)

Thermal Conductivity, BTU/hr/ft<sup>2</sup>/ft/°F  
(W/m•K)  
212°F (100°C) 9.4 (16.2)  
932°F (500°C) 12.4 (21.4)

Mean Coefficient of Thermal Expansion,  
in/in/°F (µm/m•K)

32- 212°F (0- 100°C) – 9.6 x 10<sup>-6</sup> (17.3)  
32- 600°F (0- 315°C) – 9.9 x 10<sup>-6</sup> (17.8)  
32-1000°F (0- 538°C) – 10.2 x 10<sup>-6</sup> (18.4)  
32-1200°F (0- 649°C) – 10.4 x 10<sup>-6</sup> (18.7)

Modulus of Elasticity, ksi (MPa)  
28.0 x 10<sup>3</sup> (193 x 10<sup>3</sup>)

Magnetic Permeability, (H = 200  
Oersteds), Annealed 1.02 max.

Specific Heat, BTU/lb/°F (kJ/kg•K)  
32 - 212°F (0 - 100°C) – 0.12 (0.50)

Melting Range, °F (°C) 2550 - 2650  
(1399 - 1454)

