

# Alloy 309/309S

A chromium-nickel stainless grade, Alloy309/309S is suitable for a number of high temperature applications.

Alloy 309/309S is an austenitic heat resisting stainless steel. 23% chromium, approx. 5% more than 304 stainless steel gives Alloy 309/309S an edge over 304 stainless steel when it comes to general corrosion resistance at elevated temperatures.

## PRODUCT FORMS

PRODUCT FORM	SIZE RANGE FROM	SIZE RANGE TO
Alloy 309/309S sheet & plate	1.5 mm	12.7 mm
Alloy 309/309S round bar	12.7 mm	152.4 mm

Can't find the size you need? **Please contact us at [onlinesales@neonickel.com](mailto:onlinesales@neonickel.com)**

## CHEMICAL ANALYSIS

%	C	CR	NI	P	S	SI	MN	FE
Min	-	22	12	-	-	-	-	Balance
Max	0.08 (309s) 0.20 (309)	24	15	0.045	0.03	0.75	2.0	-

## APPLICATIONS

- Aircraft and jet engine parts
- Auto exhaust parts
- Heat exchangers
- Waste incinerators
- Glass blowing components
- Rotary kilns
- Furnace anchor bolts

## ABOUT ALLOY 309/309S

Alloy 309/309S is an austenitic chromium-nickel heat resistant stainless steel with good oxidation resistance up to 1038°C. The alloy has moderate strength and demonstrates useful performance in reducing sulphidising atmosphere .

## PROPERTIES

**Density:** 7.89 g/cm<sup>3</sup>

## MECHANICAL & PHYSICAL PROPERTIES

MECHANICAL & PHYSICAL PROPERTIES	21°C	537.8°C	649°C	760°C	871°C	982°C
Ultimate Tensile Strength /Mpa	620.5	-	358.5	-	124.1	
0.2% Yield Strength /Mpa	310.3	-	151.7	-	-	
Elongation %	50	-	26	-	32	
Minimum Creep 0.0001% per hr	-	-	110.3	23.4	9.7	1.5
10,000 hr Rupture Strength	-	-	118.6	33.1	11	3.9
Coefficient of Thermal Expansion µm/m°C	-	17.5	-	-	18.2	
Thermal Conductivity /kcal/(hr.m.°C)	11	17.1	18.5	-	-	
Modulus of Elasticity / x10 <sup>5</sup> Mpa	1.97	1.55	1.45	1.24	1.24	

## SPECIFICATIONS

<b>UNS Number (309):</b>	UNS S30900
<b>W.Nr.Number (309):</b>	1.4828
<b>Standards (309):</b>	ASTM A167
<b>UNS Number (309S):</b>	UNS S30908
<b>W.Nr.Number (309S):</b>	1.4833
<b>Standards (309S):</b>	ASTM A240, AMS 5523