

UNS S32205

Duplex stainless 2205 (UNS S32205) is a chromium-nickel-molybdenum-nitrogen stainless steel.

UNS S32205 has high strength and corrosion resistance at temperatures up to 316°C.

PRODUCT FORMS

PRODUCT FORM	SIZE RANGE FROM	SIZE RANGE TO
UNS S32205 sheet & Plate	1.5 mm	50 mm

Can't find the size you need? **Please contact us at onlinesales@neonickel.com**

CHEMICAL ANALYSIS

%	NI	CR	MO	MN	SI	C	N	S	P	FE
Min	4.5	22	3	-	-	-	0.14	-	-	-
Max	6.5	23	3.5	2	1	0.03	0.2	0.02	0.03	-

APPLICATIONS

- Seawater systems
- Seawater pumps and valves
- Chemical process vessels, piping, and heat exchangers
- FGD scrubber systems
- Pulp mill digesters, bleach washers
- Food process equipment
- Oil field piping

ABOUT UNS S32205

UNS S32205 is a duplex grade with a ferritic-austenitic microstructure. The alloy consists of around 40-50% ferrite in the annealed condition. The duplex microstructure has the high strength of the ferritic grades whilst retaining the corrosion resistance of the austenitic grades. It is not uncommon to see the metal used as a practical solution to chloride-induced stress cracking, which is the achilles' heel of stainless steel. UNS S32205 has superior resistance to chloride pitting and crevice corrosion as compared to 317L stainless steel. The alloy has outstanding corrosion resistance to seawater and most concentrations of sulphuric acid. In addition, UNS S32205 duplex stainless is also resistant to sulphide stress corrosion cracking (sour-gas environments). The high quality and therefore performance of UNS S32205 is widely attributed to the high levels of chromium present as well as nitrogen and molybdenum. To learn more about UNS S32205 [contact us](#), or fill in our online quote form and we'll get right back to you!

PROPERTIES

Density:	7.1 g/cm ³
Melting range:	1385-1443°C
Poisson's ration:	0.3
Electrical resistivity:	8 x10 ⁻⁷ Ωm

MECHANICAL & PHYSICAL PROPERTIES

MECHANICAL & PHYSICAL PROPERTIES	21.1°C	100°C	200°C	300°C
Coefficient of Thermal Expansion $\mu\text{m}/\text{m}^\circ\text{C}$		14.4	14.4	14.4
Thermal Conductivity/kcal/(hr.m.°C)	11.9	13.4	14.9	16.4
Modulus of Elasticity/ $\times 10^5$ MPa	1.93	1.79	1.72	1.65

MECHANICAL SPECIFIED PROPERTIES, ASTM A240

ULTIMATE TENSILE STRENGTH, KSI	95
0.2% Yield Strength, ksi	65
Elongation, %	25
Hardness MAX, Brinell	290

CORROSION RESISTANCE

ALLOY	PREN	CRITICAL PITTING TEMPERATURE, CPT
2205	34	130°F
316L	24	62°F