

STAINLESS STEEL

303 - 1.4305



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303 stainless steel is an austenitic stainless steel that is designed for easy machining. It is known for its excellent machinability due to the presence of sulphur which improves its machining characteristics while maintaining good mechanical and corrosion-resistant properties. Proper handling and fabrication techniques can mitigate some of its limitations, making it a versatile choice for a wide range of industrial applications

KEY FEATURES

- Good corrosion resistance
- Good mechanical properties
- Excellent machinability
- Generally weldable
- Formability and fabrication

CHEMICAL PROPERTIES

Chromium (Cr)	Nickel (Ni)	Manganese (Mn)	Silicone (Si)	Phosphorus (P)	Sulphur (S)	Carbon (C)	Nitrogen (N)	Iron (Fe)
17-19%	8-10%	2%	1%	0.2%	0.15%	0.15%	0.1%	rest

MECHANICAL PROPERTIES

Tensile strength (N/mm ²)	500-700
Yield strength (N/mm ²)	190
Elongation (% in 4D)	35
Hardness - Rockwell (HRB) max	90
Hardness - Brinell (HB) max	262

PHYSICAL PROPERTIES

Density (kg/m ³)	8030	
Modulus of elasticity (Gpa)	193	
Mean coefficient of thermal expansion	0-100°C (µm/m/°C)	17.3
	0-350°C (µm/m/°C)	18.1
	0-538°C (µm/m/°C)	18.8
Thermal conductivity	at 100°C (W/m.K)	16.3
	at 500°C (W/m.K)	21.0
Specific Heat 0-100°C (J/kg.K)	500	
Electrical resistivity (nΩ.m)	720	
Melting point (°C)	1455	

MARKET SECTORS



Gears, shafts, bearings, bushings, valve bodies



Processing equipment, screws, fasteners



Screws, bolts, nuts, gears, shafts, valve components



Valve bodies, fittings, flanges



Aircraft fittings, shafts, fasteners



Surgical instruments, dental tools