

Type 416 stainless is a martensitic, free machining stainless steel. It is treated with hot working, which gives it elevated strength and hardness. 416 stainless has the highest machinability of any stainless steel. One of the first free-machining stainless steels ever developed, 416 offers considerable flexibility in machining applications. The addition of manganese-rich sulfides evenly distributed throughout the steel provides a natural lubricant, preventing buildup on cutting tools during the machining process. The additives also act as chip breakers, substantially increasing machining rates to 85%. Free machining steel like 416 allows for faster speeds and feeds and an overall increase in cutting tool life.

Nominal Composition %

- Ni** Nickel – 8.0 – 10.5%
- Cr** Chromium – 12.0 – 14.0%
- Mn** Manganese – 1.25%
- Si** Silicon – 1.0%
- C** Carbon – 0.15%
- P** Phosphorous – 0.06%
- Mo** Molybdenum – 0.6%
- Fe** Iron - Balance

Percent by weight, maximum unless a range is listed.

Standard Inventory Specifications

- UNS S41600
- ASTM A 895
- ASTM A 582 (Chem-only)

Forms Stocked

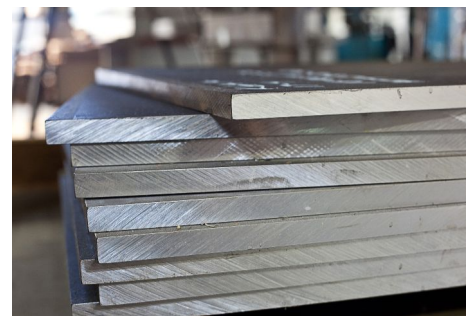
- 416 Plate

Thickness Stocked

- 0.1875” – 4.000” thick

Applications

- Screw machine parts
- Fasteners & fittings
- Gears
- Valves
- Pumps



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Industries

- Semiconductors

Physical Properties

Properties	Value
Density	7750 kg/m ³
Thermal Conductivity 212°F, 100°C	24.9 (W/m.K)
Thermal Conductivity at 932°F, 500°C	28.7 (W/m.K)
Electrical Resistivity	570 (nW.m)

Mechanical Properties

Properties	Value
Yield Strength	448 psi
Ultimate Tensile Strength	75 psi
Elongation	0.3
Hardness	B82