

**PRODUCT DESCRIPTION**

Alloy 422 is a hardenable stainless steel designed for use at temperatures of up to 1200°F (649°C). Alloy 422 has good resistance to scaling and oxidation. Through heat treatment, high mechanical properties can be developed. Alloy 422 is used in applications such as compressors or steam turbines and also in aircraft parts, valves, high temperature bolting etc.

**General Properties**

With better strength at higher temperatures, Type 422 (S42200) is an appealing alternative to Type 403. Type 422 is a hardenable martensitic stainless steel which is being widely used for high temperatures up to 1200°F. It is capable of being heat treated to various high strength levels. It is often used in aircraft and power industries who require high strength/weight ratios from room temperature to 1200°F.

**Standards**

- ASTM 422
- UNS: S42200
- ASTM A565

**Composition**

C(%)	P(%)	Si(%)	Ni(%)	V(%)	Fe(%)	Mn(%)	S(%)	Cr(%)	Mo(%)	W(%)
0.20-0.25	≤0.04	≤0.75	0.50-1.00	0.20-0.5	Bal	≤1.00	≤0.03	11.5-13.5	0.75-1.25	0.75-1.25

**Availability**

Alloy 422 is available as round bar/ flat / sheet / hexagonal / plate/ square / coil / pipe & fittings.

**Mechanical Properties**

Yield Strength $\geq\sigma_{0.2}$ /Mpa	Tensile Strength $\sigma_b$ /Mpa	Elongation $\epsilon$ (%)	Reduction of Area(%)
585	825	17	35

AISI Type 422 Mechanical properties, Our production completely according to the AISI Type 422 standards to meet the AISI Type 422 mechanical performance, can also according to the customer request, to meet the requirements of customers of AISI Type 422 mechanical properties.

**Heat treatment**

AISI Type 422 Heat treatment, our production completely according to the AISI Type 422 standards to meet the AISI Type 422 Heat treatment, can also according to the customer request, to meet the requirements of customers of AISI Type 422 Heat treatment.

**Welding performance**

AISI Type 422 Welding performance, Our production completely according to the AISI Type 422 standards to meet the AISI Type 422 Welding performance, can also according to the customer request, to meet the requirements of customers of AISI Type 422 Welding performance.

### Machineability

- Comparable to 18-8 but easier to machine
- Help avoid galling with sharply ground tools
- Maintain consistent speed and feed
- Turning tools: 8-14° side rake
- Drilling: 140° point
- Threading: grind tools with 10-15° back rake
- Cobalt high-speed tools: turn at 90-120 sfpm, drill at 40-75 sfpm, mill at 70-120 sfpm, ream at 20-60 sfpm, roughing and finishing at 200-400 sfpm

### Workability

- Initial forging and rolling at 2100° to 2150°F (1149° to 1177°C)
- 1700°F (927°C) minimum to hot work

### Applications

- Aircraft parts
- Steam and gas turbine components
- High heat components
- Rotors

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