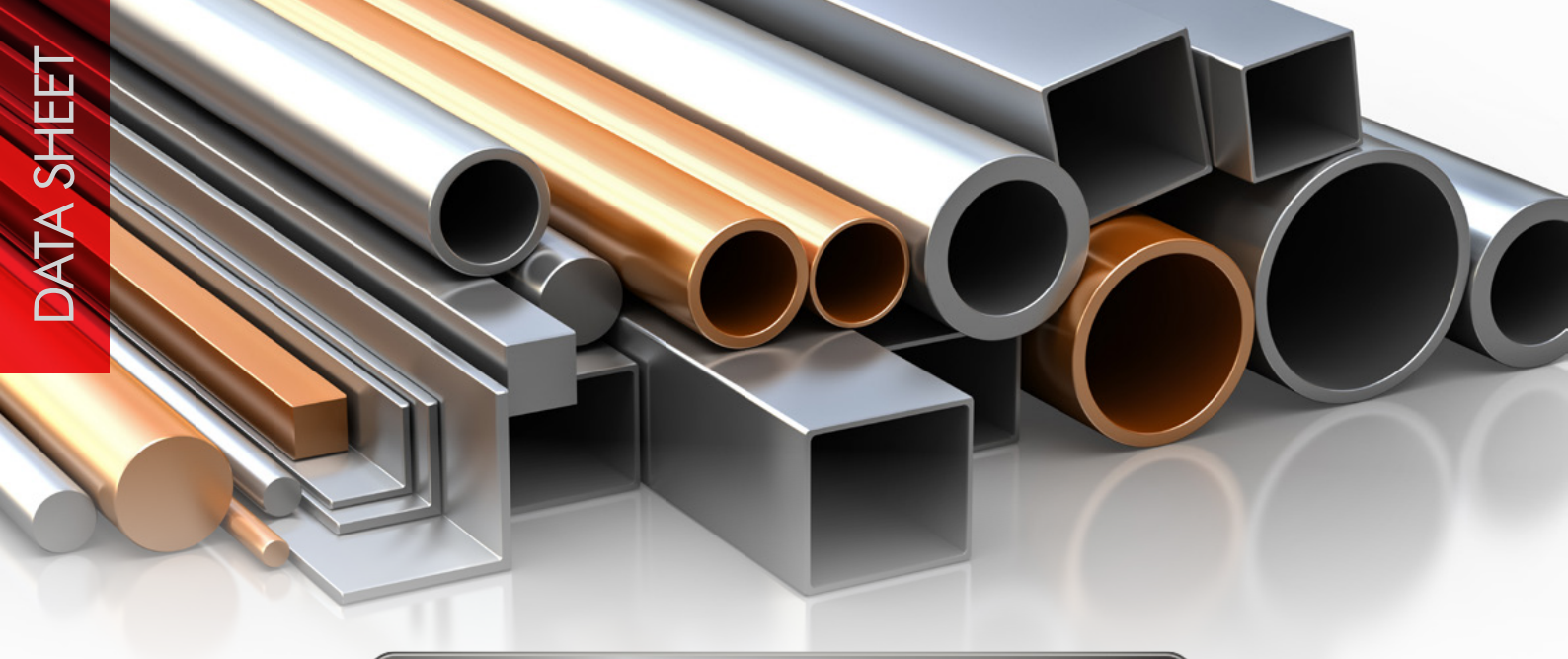
DATA SHEET



S. S. 430 / 430F / 430F SE

UNS No - S43000 / S43020 / S43023

Stainless Steel Grade 430 is non-hardenable steel, includes straight chromium, and has a place with the Ferritic group of steels. This 340 steel is best known for its good corrosion resistance and formability, coupled with practical mechanical properties. It can be utilized in certain chemical applications because of its resistance to nitric acid.

Grade 430F Stainless Steel is normally provided in bar form to be utilized in automatic screw machines. This is a free machining version of 430. An essential Ferritic steel, non-heat treatable, 17% chromium stainless steels with moderate strength and corrosion resistance.

Grade 430F SE is a Ferritic stainless which replace selenium for sulfur to improve machinability. A basic non-heat treatable, 17% chromium stainless steels along with moderate strength and corrosion resistance.

Applications

For 430 grades:

- Automotive and architectural trim
- Vaults
- Heat exchangers
- Scientific apparatus
- Vending machine components

For 430F & 430F SE grade:

- Not to be used for containing high pressure gas or liquid due to its porosity
- Successfully used in a variety of aircraft parts including fasteners, gears, shafts and pinions

Characteristics

For 430 grades:

- Good corrosion resistance
- Good oxidation resistance
- Thermal conductivity
- Good ductility
- Good formability

For 430F & 430F SE grade:

- Free machining version of 430
- Non-heat treatable
- Moderate strength
- Corrosion resistance

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shaping exotic metals

S. S. 430 / 430F / 430F SE

Machining
For 430 grades:
Machining rated at 60 % of B1112. Almost it can be easily machined in all common process.
For 430F & 430F SE grade:
Excellent chip breaks because of the addition of sulfur. Feeds and good speeds are possible with this alloy.

Welding
For 430 grades:
All common welding technique utilized for stainless will be successful with 430. Filler metal should be AWS E/ER308 or 312.

For 430F & 430F SE grade:
Not recommended for welding due to its high sulfur content. If welding is necessary, utilize low heat settings and filler metal of AWS E/ER430 for best results.

Forging
For 430 grades:
Bring the workpiece to 1500 F (816 C), then on rapidly to 1900 F (1038 C). Prolonged exposure at this temperature will cause grain growth. Do not work this material at less than 1500 F (816 C). Air cool to room temperature and anneal.

Hot Working
For 430 grade:
Generally the recommended technique of hot forming is to work the material within 1300 and 1500F. Hot forming is needed on heavy section.

For 430F & 430F SE grade:
A two step heating process is recommended starting with bringing the material to 1500 F (816 C), then slowly up to 1950-2100 F (1066-1149 C) before working. Do not work below 1500 F (816 C). Cool in air and anneal fully following cooling to room temperature.

Cold Working
For 430F & 430F SE grade:
This alloy will only withstand moderate cold forming.

Annealing
For 430 grade:
Soak at 1500 F, furnace cool (50 F/hour) to 1100 F, then air cool.

For 430F & 430F SE grade:
1250-1400 F (677--760 C), air cool.

Hardening
These alloy don´t respond to heat treatment.

Chemical Properties

Grade	C	Si	P	S	Cr	Mn	Se	Fe
430	0.12 max	1.0 Max	0.40 Max	0.3 Max	16.0- 18.0	1.0 Max	-	Reminder
430F	0.12 max	1.0 Max	0.06 Max	0.15 Min	16.0- 18.0	1.25 Max	-	Reminder
430F SE	0.12 max	1.0 Max	0.06 Max	0.06 Max	16.0- 18.0	1.25 Max	0.15 min	Reminder

S. S. 430 / 430F / 430F SE

Mechanical Properties

Grade	Tensile Strength (ksi)	0.2% Yield Strength (ksi)	Elongation% in 2 inches
430	65	30	22
430F / 430F SE	80	54	25

Physical Properties

Properties	430	430F / 430F SE	Temperature in °C
Density	7.7 g/cm^3	7.7 g/cm^3	Room
Specific Heat	0.11 Kcal/kg.C	0.11 Kcal/kg.C	22°
Melting Range	1510 °C	1482 °C	-
Modulus of Elasticity	200 KN/mm^2	200 KN/mm^2	22°
Electrical Resistivity	360 µΩ.cm	360 µΩ.cm	Room
Coefficient of Expansion	10.4 µm/m °C	10.4 µm/m °C	20-100°
Thermal Conductivity	23.9 W/m-°K	26.9 W/m-°K	20°

ASTM Specifications

Grade	Pipe / Tube (SMLS)	Welded Pipe / Tube	Sheet / Plate	Bar	Forging	Fittings	Wire
430	A 511	A 268, A 554	A 176, A 240	A 276, A 314, A 479	A 815	A 182	A 580, A 493
430F / 430F SE	-	-	A 895	A 314, A 582	A 473	-	A 581

Availability

For 430 grades:

MANUFACTURING	RAW MATERIALS
Fasteners	Pipes
Custom Machining	Tubes
Custom Fabrication	Bars
Piping / Spools	Wires
Stamped Parts	Sheets
B/W Fittings	Plates
S/W Fittings	-
Flanges	-
Compression Fittings	-

For 430F & 430F SE grade:

MANUFACTURING	RAW MATERIALS
Fasteners	Bars
Custom Machining	Wires
Custom Fabrication	Sheets
Flanges	Plates
Stamped Parts	
Compression Fittings	