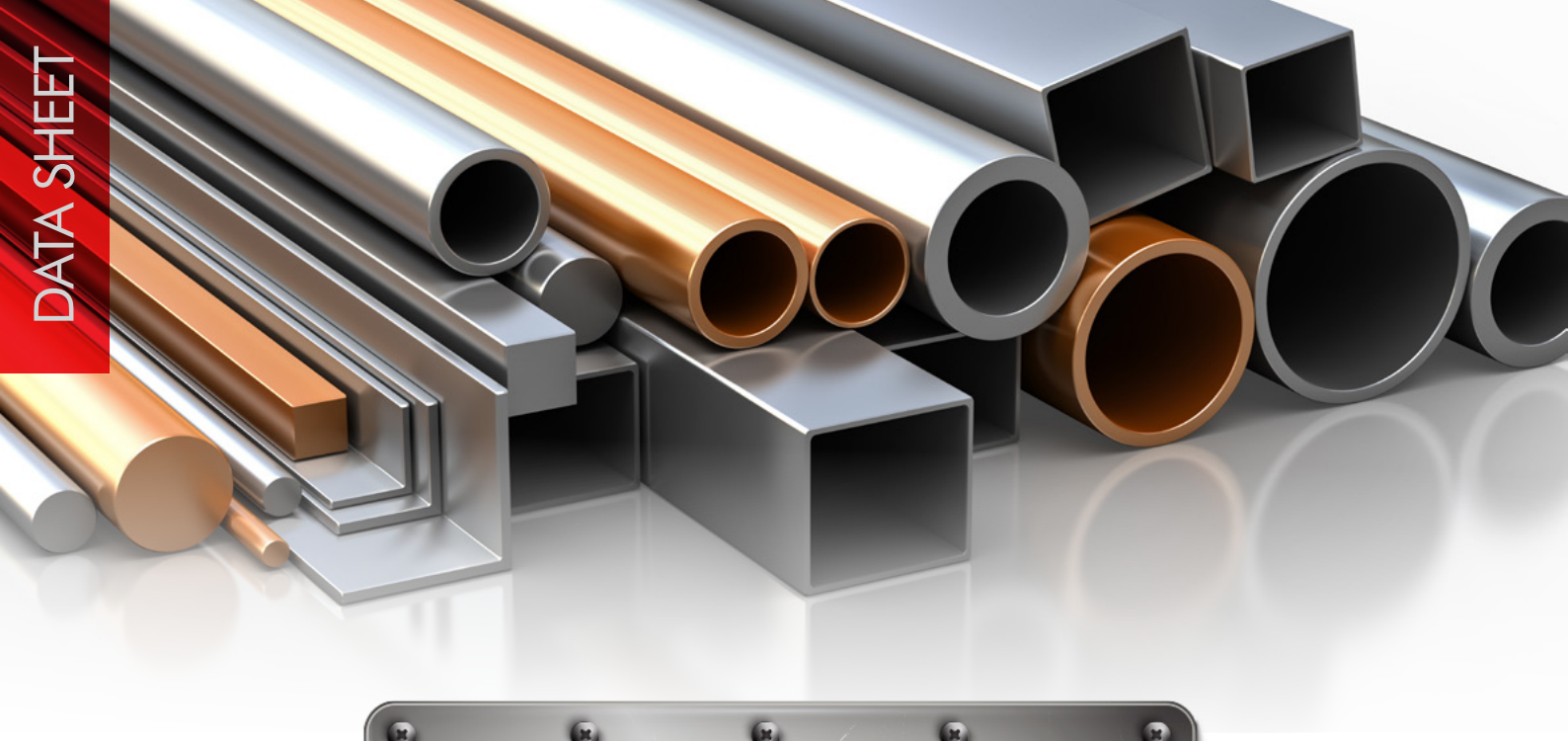
DATA SHEET



NICKEL 201

UNS No - N02201

Alloy 201 is a wrought economically pure nickel with a maximum carbon level of 0.02%. This gives exceedingly ductile mechanical properties over a wide temperature range. It gives corrosion resistance in neutral to moderately decreasing situations. Nickel 201 is ferromagnetic. It gives high thermal and electrical conductivity in contrast with nickel-base alloys, stainless steels and low alloy. As a result of its low carbon content (.02% max.) Nickel 201 might be considered for process above 600°F (316°C), where alloy 200 with higher carbon content is not recommended.

Applications

- Food Processing
- Synthetic Fiber Processing
- Heat Exchangers
- Chemical Industries
- Electrical Industries

Characteristics

- Good resistance to corrosion in acids and alkalis and is most useful under reducing conditions
- Outstanding resistance to caustic alkalis up to and including the molten state
- In acid, alkaline and neutral salt solutions the material shows good resistance, but in oxidizing salt solutions severe attack will occur
- Resistant to all dry gases at room temperature and in dry chlorine and hydrogen chloride may be used in temperatures up to 550C
- Resistance to mineral acids varies according to temperature and concentration and whether the solution is aerated or not. Corrosion resistance is better in de-aerated acid
- Virtually immune to inter granular attack above 315C, chlorates must be kept to a minimum

SUNMACH™
shaping exotic metals

NICKEL 201

Machining
Economically pure nickel is soft and “gummy” to machine yet it can be promptly machined by standard mean. In any case it can be machined with standard tooling same as Nickel 200. High speed steel tools are recommended.

Forming
Nickel 201 is promptly shaped by the majority of the standard means. It is specifically suited for forming parts by spinning.

Welding
Weldable by standard means as was additionally the case with Nickel 200. However oxyacetylene welding ought not to be utilized with Nickel 201.

Heat Treatment
Anneal at 1650 F to 1300 F relying upon the degree of cold working and time at temperature.

Forging
Forging should be done within the scope of 2100 F to 1200 F.

Hot Working
Hot working may be done within the scope of 2100 F to 1200 F.

Cold Working
Cold working is promptly accomplished with standard tooling.

Annealing
Anneal at 1650 F to 1300 F relying upon time at temperature and amount of cold working that has been done.

Hardening
Hardens are just done by cold working.

NICKEL 201

Chemical Properties

C	Si	S	Cu	Mn	Fe	Ni
0.02 max	0.35 max	0.01 max	0.25 max	0.35 max	0.4 max	99.0 min

Mechanical Properties

Tensile Strength (ksi)	0.2% Yield Strength (ksi)	Elongation% in 2 inches
50	12	35

Physical Properties

Properties	Units	Temperature in °C
Density	8.9 g/cm^3	Room
Specific Heat	0.105 Kcal/kg.C	Room
Melting Range	1435-1445°C	-
Modulus of Elasticity	207 KN/mm^2	Room
Electrical Resistivity	8.5 µΩ.cm	20°
Coefficient of Expansion	13.3 µm/m °C	20 - 100°
Thermal Conductivity	67.1W/m -°K	20°

ASTM Specifications

Pipe / Tube (SMLS)	Pipe Welded	Tube Welded	Sheet / Plate	Bar	Fitting
B 161	B 622	B 622	B 162	B 160	B 163

Availability

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