Nickel 201

Nickel 201 is an unalloyed wrought nickel with reduced carbon content (0.02 % max.) and shows better corrosion resistance at elevated temperatures above 300℃ by avoiding graphite precipitation

It is suitable for service temperatures up to approx. 675°C. It has gained ASME Approval for Pressure Vessel applications.

Nickel 201 is characterized by:

- excellent corrosion resistance in many alkaline media
- good mechanical properties within a wide range of temperatures
- magnetization decreasing continuously between -273 and 360℃ and showing paramagnetism above the Curie point

Chemical Composition, %

element	Ni	Cu	Fe	C	Mn	Si	S
min.	99.0						
max.		0.25	0.40	0.02	0.35	0.35	0.01

Chemical Composition according to ASTM. Some compositional limits of other specifications may vary slightly.

Designation and standards

National Standards	Material designation	Chemical composition	Forgings	Rod and bar	Plate and sheet	Strip	Wire	Seamless tube
ASTM ASME SAE	UNS N02201		B366 SB366	B160 SB160	B162 SB162 AMS5553	B162 SB162 AMS5553		B163 SB163 B161 SB161
DIN	2.4068 LC-Ni 99	DIN 17740	DIN 17754	DIN 17752	DIN 17750	DIN 17750	DIN 17753	DIN 17751

Density 8.89g/cm^3

Corrosion resistance

- excellent resistance to many corrosive media from acid to alkaline
- extremely high resistance to caustic alkalies up to and including the molten state
- good resistance in acid, alkaline and neutral salt solutions, but severe attack occurs in oxidizing salt solutions
- virtual immunity to intergranular attack above about 315℃
- dry chlorine and hydrogen chloride – at temperatures up to 550℃

Applications

Typical applications are:

- food production, such as handling of cooling brines, fatty acids and fruit juices – resistance to acid, alkaline and neutral salt solutions and to organic acids
- vessels in which fluorine is generated and reacted with hydrocarbons – resistance to fluorine
- storing and transportation of phenol – immunity from any form of attack ensures absolute product purity
- manufacture and handling of sodium hydroxide, particularly at temperatures above 300℃. Industrial processes where sodium hydroxide is typically used, involve:
- production of viscose rayon and manufacture of soap – general corrosion resistance and virtual immunity to intergranular attack above 315℃
- production of hydrochloric acid and chlorination of hydrocarbons such as benzene, methane and ethane – resistance at elevated temperatures to dry chlorine and hydrogen chloride
- manufacture of vinyl chloride monomer – resistance to hydrogen chloride at elevated temperatures