



Description

Inconel® 600 is a nickel-based alloy with excellent carburization, and good oxidation resistance at elevated temperatures. 600 alloy has useful resistance to dry C12 and HCl gases at moderately elevated temperatures. 600 alloy is not suggested to be used at red heat when sulphur is present due to the elevated nickel quantities.

Typical Applications

- Heat treating muffles and retorts
- Vacuum furnace fixtures
- Chlorination equipment to 1000°F
- Titanium dioxide plants

Corrosion Resistance

600 alloy is virtually immune to chloride ion stress corrosion cracking. It has good caustic corrosion resistance and carburization resistance. Is preferred when sulphur compounds are present or for ammonium hydroxide service.

Heat Resistance

600 alloy is resistant to dry C12 to about 1000°F and Oxidation resistant to 2000°F. 600 alloy is not suggested in red heat when sulphur compounds are present.

Heat Treatment

A minimum treatment of 1650°F for 1 hour is suggested, but 1800-1850°F for 1 hour is preferred.

Welding

Inconel® alloy 600 is readily joined by conventional welding processes. Welding materials for joining alloy 600 are Inconel® Welding Electrode 182 for shielded metal-arc welding*, Inconel® Filler Metal 82 for gas tungsten-arc and gas metal-arc welding, and Inconel® Filler Metal 82 and Incoflux 4 Submerged Arc Flux for the submerged-arc process.

Chemical Analysis		Ni	Cr	C	Mn	Cu	Si	S	Fe
Max values	600	72.00	14.0-17.0	0.15	1.0	0.50	0.50	0.015	6.0-10.0

Typical Mechanical Properties- Annealed	Yield Strength	Tensile Strength	Elongation % in 2"	Hardness		Density Lb/in ³	Modulus of Elasticity in Tension - ksi
	ksi	ksi		R b	BHN		
	37	93	45	75	145	0.304	30000

Other Properties	Creep Strength 1% Flow/ 1000 hours at 1000°F -ksi	Electrical Resistivity - Ohm-circ mil/ft At 68°F	Coefficient of Thermal expansion: (ln/ln°F x 10 ⁻⁶) 32°- 212°F	Thermal Conductivity BTU/ft. ² /Hr./°F/ft.	
				At 212°F	At 932°F
	6.10	620	8.4	8.6	13.2

