

### Nickel Chromium Alloy

#### Typical Applications

- Heat exchangers
- Furnaces
- Exhaust liners for aircraft
- Nuclear reactor components
- Production of caustic alkalis
- Chemical and food processing equipment
- Condensers
- Evaporator tubes

#### Product Description

Alloy 600 is popular engineering material for applications where resistance to both heat and corrosion is required. The excellent mechanical properties of the alloy give this material high strength and good workability. Corrosion resistance is good, especially in alkaline environments, and can be used in both cryogenic and elevated temperature service.

#### Availability

Bar, tube, strip, plate, sheet

#### Material Specifications

- For use in applications from cryogenic to elevated temperatures in the range of 1093 °C
- Good corrosion resistance
- Excellent toughness at sub-zero temperatures
- Good workability combined with high strength

#### Corrosion Resistance

Alloy 600 is resistant to a wide range of corrosives. The alloy provides excellent resistance to alkaline solutions and fair resistance to strongly oxidised acid solutions. It is particularly resistance to attack by dry chlorine or hydrogen chloride, even at temperatures up to 650°C.

#### Weldability

Can be joined by standard resistance and fusion welding processes used for stainless steels.

#### Heat Treatment

Alloy 600 is not hardenable by heat treatment.

#### Chemical Composition (weight %)

	Ni	Cr	Fe	C	Mn	Si	Cu	S
Min	72.0	14.0	6.0					
Max	-	17.0	10.0	0.15	1.0	0.50	0.50	0.015

#### Mechanical Properties

Alloy and Condition	Tensile Strength		0.2% Yield Strength		Elongation A5	Brinell Hardness
	N/mm <sup>2</sup>	ksi	N/mm <sup>2</sup>	ksi	%	HB
Alloy 600 annealed	550	80	240	35	30	≤195

#### Technical Assistance

Our knowledgeable staff backed up by our resident team of qualified metallurgists and engineers, will be pleased to assist further on any technical topic.

#### UK Service Centres:

Smiths Belfast **02895 908 897**  
 Smiths Biggleswade **01767 604 704**  
 Smiths Birmingham **0121 728 4940**  
 Smiths Bristol **0117 971 2800**  
 Smiths Chelmsford **01245 466 664**  
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#### Quality & Testing:



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