Corrosion-resistant alloy

Alloy 600

Description

Alloy 600 is a nickel-chromium-iron superalloy designed for high-temperature and corrosive environments. It maintains mechanical properties from cryogenic temperatures up to 815°C (1500°F) and is commonly applied in chemical, heat treatment and furnace service.

Grade: UNS N06600, Inconel® 600, W.Nr.2.4816, NiCr15Fe8

Oxidation resistance

θ/°C	Oxidation Rate/(g/m2.h)
800	0.01865
900	0.05724
1000	0.13718

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Chemical Composition (wt%)

C	Cr	Ni	Fe	Mn	Si	S	Cu
≤0.15	14.0-17.0	≥72.0	6.00-10.00	≤1.00	≤0.50	≤0.015	≤0.50

Applicable standards

Technical Standards	Product Form
ASTM B166	Rod, Bar and Wire
AMS 5665	Bars, Forgings and Rings
ASTM B168	Plate, Sheet and Strip
AMS 5540	Plate, Sheet and Strip
ASTM B167	Seamless Tube & Pipe
AMS 5580	Seamless tube
AMS 5687	Wire

Physical Properties

Thermal conductivity

θ/°C	W/(m·°C)
20	12.85
100	13.94
200	15.15
300	16.62
400	18.71
500	20.72
600	22.4
700	24.49
800	27
900	29.51
1000	31.6

Coefficient of thermal expansion

θ/°C	α
20-200	12.35
20-300	12.75
20-400	13.1
20-500	13.55
20-600	14.5
20-700	15.15
20-800	15.7
20-1000	16.2

Electrical conductivity

Temperature °C	Electrical Resistivity μΩ.m
20	1.03
100	1.04
200	1.05
300	1.07
400	1.09
500	1.12
600	1.13
700	1.13
800	1.13
900	1.15

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Modulus of elasticity

θ/°C	En/Gpa
100	205
200	201
300	195
400	189
500	182
600	174
700	164
800	155
900	144
1000	132

Disclaimer

Data is typical for reference only; actual values based on actual application.