



MATERIAL No.: ALLOY 600/ N06600/ 2.4816

DESCRIPTION

EN symbol (short)	NiCr15Fe	Density lb/in³	0,306
Alloy	600	Hardness	
UNS	N 06600	alloy 600 (HB)	<=195
AFNOR	Ni15Fe	alloy 600H (HB)	<=185
BS	NA 14	Composition	Nickel Chrome alloy
Registered work's label	Incoloy®600 Nicrofer®7216	Category	Highly corrosion resistant alloys high-temperature resisting steels and alloys
		Structure	
		Corrosion	good resistance to chloride induced tensile corrosion

Description 2.4816 is a nickel chrome iron alloy.
It shows good resistance to oxidation, carbonization, and metrication and stress corrosion.
Additionally it shows good mechanical properties in low, medium and high temperatures.

CHEMICAL COMPOSITION

		C	Si	Mn	P	S	Cr	Ni	Cu	Co	Fe	Ti	B	Al
2.4816	Min %	0,05					14,00	72,00			6,00			
	Max %	0,10	0,50	1,00	0,020	0,015	17,00		0,50	1,50	10,00	0,30	0,006	0,30

(Key to Steel 2010)

alloy 600 N 06600	Min %						14,00	72,00			6,00			
	Max %	0,15	0,50	1,00		0,015	17,00		0,50		10,00			

ASTM B 517

PHYSICAL PROPERTIES

Property	Value
Density: lb/in³	0,306
Hardness:	
alloy 600 (HB)	<=195
alloy 600H (HB)	<=185

Permeability at 20°C/68°F	1,05				
Elongation A5 (%) alloy 600	30				
alloy 600H	35				
Temperature T °C/F (°C/F)	Specific heat J / kgK (Btu / lb °F)	Thermal conductivity W/mK (Btu-in / ft²·h·°F)	Electric resistance μΩ · cm (Ω circ mill / ft)	Modulus of elasticity kN/mm² (10³ ksi)	Expansion rate from 70°F bis T 10⁻⁶ / K (10⁻⁶ / °F)
20/68	455(0,108)	14,8 (103	103 (620)	214 (31,0)	
100/212	475	15,8	104	209	13,7
200/392 (204/400)	495 (0,118)	17,0 (118)	106 (638)	205 (29,7)	14,1 (7,8)
400/752 (427/800)	525 (0,126)	20,0 (143)	108 (655)	194 (27,8)	14,8 (8,3)
600/1112 (649 /1200)	572 (0,140)	24,0 (172)	112 (674)	180 (25,5)	15,4 (8,6)
700/1292 (760/1400)	602 (0,146)	25,7 (186)	112 (674)	172 (24,2)	15,8 (8,7)
800/1472 (871/1600)	620 (0,150)	27,5 (201)	112 (678)	163 (22,8)	16,1 (9,0)
900/1652 (982/1800)	630 (0,151)	29,4 (215)	113 (683)	153 (21,0)	16,4 (9,3)
1000	635	31,2	114	143	16,9

MECHANICAL PROPERTIES (20°C / 68°F)

°F	68°F	600°F	900°F
Yield strength Rp 0.2 alloy 600 - annealed (ksi)	35	22,0	145
alloy 600H - solution annealed (ksi)	26	21,5	145
Tensile strength alloy 600 - annealed (ksi)	80	69,5	20.3
alloy 600H - solution annealed (ksi)	73	63,8	20.3
Remarks			

TEMPERATURE INFORMATION

Application area	
Operation temperature	1 °F to 1652 °F

Explanation report	above 700°C /1292°F alloy 600H is recommended
Solution heat treatment	
Working temperature	1976 °F to 2102 °F
Soft annealing	
Working temperature	1688 °F to 1832 °F
Solution heat treatment	
Working temperature	2192 °F to 1652 °F

STANDARDS / INFORMATION

Standards	Description
ASTM B 166	Standard Specification for Nickel-Chromium-Cobalt-Molybdenum Alloy rods, bars and wires
ASTM B 167	Standard Specification for NI-Cr-Fe-alloy seamless pipes and tubes
ASTM B 168	Standard Specification for.... Nickel-Chromium-Cobalt-Molybdenum Alloy sheet metal and ribbons
ASTM B 564-06	Standard Specification for Nickel Alloy Forging
DIN 17742 (09/2002)	nickel- forgeable alloy with chrome
DIN 17750 (2002/09)	ribbons and sheet metal out of nickel with nickel-wrought alloy properties
DIN 17751 (2002/09)	tubes out of nickel with nickel-wrought alloy properties
DIN 17752 (2002/09)	rod made from nickel with nickel-wrought alloy properties
DIN 17753 (2002/09)	wire out of nickel with nickel-wrought alloy properties
DIN EN 10088-1 (09/2005)	Stainless steels Part 1: List of stainless steels
DIN EN 10095 (05/1999)	heat resistant steel and nickel alloy

PROCESS INFORMATION

Cold forming	material should be annealed, due to high cold work hardening tendency; metal forming larger than 15% requires intermediate annealing
Chip removing process	in annealed state
Welding	
- Material classification acc. CEN ISO/TR 15608	43
- Type	well weldable WIG plasma welding manual arc welding MIG/MAG submerged arc welding

- Add. material	2.4620,2.4806, covered rod electrode 2.4648
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MAIN FIELDS OF APPLICATION

Details of application	good resistance to scaling even in high temperatures, good resistance to dry gas (chloride, hydrogen chloride) up to 1022°F
Certifications	NACE MR 01-75
Chemical Industry	

RANGE OF PRODUCTS

Product type	Product
Plates / Sheets	plates/sheets plate/sheet cuts
Rotating components	fittings from barsteel
Fittings	welded elbows welded reductions Welded T-pieces seamless elbows seamless reductions seamless T-pieces
Flanges / Collars / Flared tube ends	flared tube end collars
Pipes / Tubes	welded pipes/tubes welded square pipes/tubes seamless pipes/tubes
Bar steel	flat steel section steel round bar steel hexagon steel

[Pipe/Tube/Fitting/Flange/Valve/Plate](#)

Stainless Steel/Nickel Alloy/Duplex

