MATERIAL NO.: ALLOY 601/ N06601/ 2.4851

DESCRIPTION

EN symbol (short)	NiCr23Fe	**Density lb/in.^{3}**	0,293
Alloy	601	**Hardness (HBW)**	< =220
UNS	N 06601	**Composition**	mixed crystal alloy
AFNOR	N C 23 FeA	**Category**	Heat resistant steels and alloys
Registered work's label	Inconel® 601	**Structure**	cubic-face-centred grid
		Corrosion	good resistance to tensile corrosion
		Additional characteristics	Good resistance against carbonization high resistance to oxidation in high temperature ranges

Description	This nickel-chrome alloy 2.4851 (low aluminum/titanium content) shows good resistance against oxidation and high temperatures excellent resistance in oxidizing sulfuric atmosphere and under carbonization conditions good resistance against corrosion due to tension

CHEMICAL COMPOSITION

		C	Mn	P	S	Cr	Si	Al	Co	Fe	Ni	Cu	B	Ti
2.4851	**Min %**					21,00		1,00			58,00			
	Max %	0,10	1,00	0,020	0,015	25,00	0,50	1,70	1,50	18,00	63,00	0,50	0,006	0,50
(Key to Steel 2010)														
alloy 601 N 06601	**Min %**					21,00		1,00		remainder	58,00			
	Max %	0,10	1,50		0,015	25,00	0,50	1,70		remainder	63,00	1,00		

Reference:
[ASTM B 167]

PHYSICAL PROPERTIES

Property	Value
Density: lb/in.^{3}	0,293
Hardness: (HBW)	< =220

Permeability at 20°C/68°F	1,01

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 (93 / 200)	450 (0,112)	11,3 (87)	119 (722)	207 (29,3)	(7,6)
100 / 212 (200 / 392)	470	12,7	120	201	13,8
300 /572 (316 / 600)	525 (0,125)	16,0 (112)	124 (749)	191 (27,6)	14,6 (8,1)
700 / 1292 (760 / 1400)	630 (0,155)	22,2 (165)	126 (761)	161 (22,5)	16,3 (9,1)
900 / 1652 (982 / 1800)	690 (0,169)	26,1 (190)	128 (775)	138 (18,4)	17,2 (9,8)
1000 /1832 (1093 /2000)	710 (0,176)	27,7 (203)	129 (782)	124 (16,1)	17,7 (10,1)
1100 / 2012	740	29,3	130	011	18,3

MECHANICAL PROPERTIES (20°C / 68°F)

Yield strength RP 0,2 (MPa)	>=205
Yield strength RP 1,0 (MPa)	>=235
Tensile strength Rm (MPa)	>=550
Elongation A5 (%)	>=30
Impact energy ISO-V	
(average value of 3 samples)	
Remarks	

TEMPERATURE INFORMATION

Application area		
Operation temperature	ºF to 1922 ºF	max
Solution heat treatment		
Working temperature	2012 ºF to 2156 ºF	
Explanation report	cooling by water	
Soft annealing		

Working temperature	1688 ºF to 1796 ºF
Explanation report	cooling by water
Solution heat treatment	
Working temperature	2192 ºF to 1652 ºF

STANDARDS / INFORMATION

Standards	Description
ASTM B 163	Standard Specifications for seamless nickel and nickel alloy condensers and heat-exchanger tubes
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
DIN 17742 (09/2002)	nickel- forgeable alloy with chrome
DIN 17752 (2002/09)	rod made from 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

Welding	
- Add. material	covered rod electrode 2.4628

MAIN FIELDS OF APPLICATION

Details of application	used under high temperatures also used in the chemical industry, power plants, pollution control goods under carbonizing conditions
Certifications	
petrochemical industry	

RANGE OF PRODUCTS

Product type	Product
Plates / Sheets	plates/sheets plate/sheet cuts
Rotating components	fittings from bar steel
Fittings	welded elbows welded reductions

	Welded T-pieces seamless elbows seamless reductions seamless T-pieces
Flanges / Collars / Flared tube ends	flared tube end collars various flanges (weld neck flange, blind flange etc.)
Pipes / Tubes	welded pipes/tubes welded square pipes/tubes seamless pipes/tubes
Bar steel	flat steel section steel round bar steel hexagon steel


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