

Nickel-Chromium-Iron Alloys: JLC 600 series

Wire • Bar • Strip • Ribbon

JLC 600 is a nickel-chromium-iron alloy that provides superior resistance to oxidation at temperatures up to 1000 °C. It also provides good resistance against stress corrosion cracking in chloride environments. This alloy also offers good mechanical properties and workability. Owing to its good corrosion resistance properties at high temperatures, it is widely used in chemical and heat treatment industries. Since it maintains good mechanical properties at high temperatures, it is also used in the aeronautical industry to manufacture various aircraft and engine components.

JLC 601 is a nickel-chromium-iron alloy with a substantial chromium content that provides resistance to many corrosive media and high temperature environments. Oxidation resistance is further enhanced by addition of aluminum.

Specifications

Alloy	British Standard	Werkstoff Nr	ASTM	UNS designation
JLC 600	BS 3075 (Na14)	2.4816	B 166	N 06600
JLC 601	-	2.4851	B 166	N 06601

Nominal Chemical composition (%)

Alloy	Ni	Mn	Fe	Si	Cr	C	Al
JLC 600	Min 72.0	Max 1.0	6.0-10.0	Max 0.50	14-17	Max 0.15	Max 0.50
JLC 601	58-63	Max 1.0	Balance	Max 0.50	21-25	Max 0.10	1.0-1.7

Note: Other Grades of nickel-chromium-iron alloys are also available.

Nominal Physical, Electrical & Mechanical Properties (at room temperature for annealed wire)

Alloy	Density g/cm ³	Young's Modulus kN / mm ²	Electrical Resistivity at 20° C μΩ-cm	Tensile strength N/mm ²		Elongation % at L ₀ = 100 mm Nominal dia in mm	
				Min	Max	Min	Max
JLC 600	8.47	206.00	103	600	800	25	40
JLC 601	8.06	206.00	119	700	900	25	40

Applications

JLC 600 is usually selected for applications which require resistance to corrosion like wire mesh, filters, fasteners for chemical industry, high temperature applications such as industrial furnaces.

JLC 601 is used in many different applications like thermal processing, chemical processing, pollution control, aerospace, and power generation