NICKEL ALLOY

ALLOY 625

finetubes
www.finetubes.com

TUBING APPLICATIONS

Alloy 625 (UNS N06625)

Alloy 625 is a nickel-chromium alloy used for its high strength, excellent fabricability and outstanding corrosion resistance. Service temperatures can range from cryogenic to 980°C (1800°F).

Alloy 625 strength is derived from the solid solution strengthening effect of molybdenium and niobium on its nickel-chromium matrix. Thus precipitation-hardening treatments are not required. This combination of elements also is responsible for superior resistance to a wide range of corrosive environments of unusual severity as well as to high-temperature effects such as oxidation and carburization.

AVAILABLE TUBE PRODUCT FORMS
STRAIGHT | COILED | SEAMLESS
SEAM WELDED, COLD REDRAWN AND ANNEALED

TYPICAL MANUFACTURING SPECIFICATIONS	
ASTM B444	BS 3074
AMS 5581	
Also individual customer specifications.	

TYPICAL APPLICATIONS
WELLHEAD COMPONENTS
SHEATHING
DOWNHOLE EQUIPMENT FOR CORROSIVE / SOUR SERVICE
REACTOR CORE
CONTROL ROD COMPONENTS
GAS PIPELINE CONTROL LINES
HEAT EXCHANGERS
OIL REFINING
CHEMICAL PROCESSING
CONTROL AND INSTRUMENTATION TUBES

INDUSTRIES PREDOMINANTLY USING THIS GRADE	
CHEMICAL PROCESSES	OIL AND GAS
NUCLEAR AND POWER	

Technical Data

MECHANICAL PROPERTIES				
Temper	Annealed (Grade 1)		Solution-treated (Grade 2)	
Tensile Rm	120	ksi (min)	100	ksi (min)
Tensile Rm	827	MPa (min)	690	MPa (min)
R.p. 0.2% Yield	60	ksi (min)	40	ksi(min)
R.p. 0.2% Yield	414	MPa (min)	276	MPa (min)
Elongation (2" or 4D gl)	30	% (min)	30	% (min)

PHYSICAL PROPERTIES (Room Temperature)		
Specific Heat (0-100°C)	460	J.kg-1.°K-1
Thermal Conductivity	14.8	W.m -1.°K-1
Thermal Expansion	12.4	mm/m/°C
Modulus Elasticity	207	GPa
Electrical Resistivity	10.3	µohm/cm
Density	8.42	g/cm3

CHEMICAL COMPOSITION (% by weight)		
Element	Min	Max
C	-	0.1
Si	-	0.5
Mn	-	0.5
P	-	0.015
S	-	0.015
Al	-	0.4
Cr	20	23
Fe	-	5
Mo	8	10
Nb	3.150	4.150
Ni	Balance	
Ti	-	0.40

AMETEK®
SPECIALTY METAL PRODUCTS