

# Material Data Sheet



## Alloy 601

Chemical Composition	Cr	Ni	Mo	Cu	W	Al	Ti	C	Fe	Y	Mn	Si	P	S
% Values (minimum)	21	58		-		1		-			-	-		-
% Values (Maximum)	25	63		1		1.7		0.10	Bal		1	0.50		0.015

### APPLICATION

Thermal processing  
Chemical processing  
Pollution control  
Aerospace  
Power generation

### DESCRIPTION

Alloy 601 is a general-purpose engineering material for applications that require resistance to heat and corrosion. An outstanding characteristic of Alloy 601 is its resistance to high temperature oxidation. The alloy also has good resistance to aqueous corrosion, has high mechanical strength, and is readily formed, machined and welded. The limiting chemical composition of Alloy 601 is listed in Table 1. The composition is a face centered cubic solid solution with a high degree of metallurgical stability. The alloy's nickel base, in conjunction with substantial chromium content, provides resistance to many corrosive media and high temperature environments. Oxidation resistance is further enhanced by the aluminium content

### CORROSION RESISTANCE

The substantial nickel and chromium contents of Alloy 601 in conjunction with its content of aluminium give the alloy superior resistance to high temperature corrosion mechanisms. Of particular significance is its resistance to oxidation at temperatures up to 2200°F (1200°C). By virtue of its contents of chromium and aluminium, Alloy 601 offers unique resistance to oxide spalling under cyclic thermal conditions.



