

# Material Data Sheet



## Alloy 22

Chemical Composition	Cr	Ni	Mo	Co	W	Al	V	C	Fe	Me	Mn	Si	P	S
% Values (minimum)	20.0	-	12.5	-	2.5		-	-	2.0		-	-	-	-
% Values (Maximum)	22.5	Bal	14.5	2.5	3.5		0.35	0.15	6.0		0.5	0.08	0.02	0.02

### APPLICATIONS

Nuclear Fuel Reprocessing  
Waste Water Processing  
Pollution Control  
Waste incinerators Chemical Manufacturing

### DESCRIPTION

Alloy 22 is a fully austenitic, nickel-chromium-molybdenum-tungsten alloy with better overall corrosion resistance compared to other nickel-chromium-molybdenum alloys, including C276, C4 and Alloy 625. The high chromium content provides good resistance to oxidizing media while the molybdenum and tungsten content give good resistance to reducing media. Some applications for Alloy 22 include waste incinerators, waste water processing, pollution control (flue-gas desulfurization), nuclear fuel reprocessing/spent fuel containers, pickling systems, chemical manufacturing, just to name a few. Maximum service temperature for Alloy 22 is 1250°F due to the formation of detrimental phases which form above this temperature.

### CORROSION RESITANCE

Alloy 22 displays exceptional resistance to a broad range of corrosive environments. It has excellent resistance to oxidizing aqueous media including wet chlorine and mixtures containing nitric acid or oxidizing acids with chlorine ions. Resistance to reducing acids such as sulphuric and hydrochloric can also be expected. Other corrosive chemicals to which the alloy has resistance are oxidizing acid chlorides, wet chlorine, formic and acetic acids, ferric and cupric chlorides, sea water, brine and many mixed or contaminated chemical solutions, both organic and inorganic. Alloy 22 also offers optimum resistance to environments where reducing and oxidizing conditions are encountered in process streams. This is beneficial in multi-purpose plants where such "upset" conditions occur frequently



