SPECIAL METALS

NIMONIC® alloy PE11

NIMONIC® alloy PE11 is a nickel-iron-chromium alloy, precipitation hardened by titanium and aluminum and solid solution strengthened by an addition of molybdenum. It was developed as a high-strength sheet alloy for use at temperatures to 1020°C (550°F). The high iron content provides good workability and also relatively high tensile ductility, especially after welding. Used for components of gas turbines.

Physical Constants & Thermal Properties

Density, g/cm^3	8.02
lb/in^3	0.290
Melting range, °C	1280-1350
°F	2340-2460
Specific Heat, J/kg-°C (20°C)	436
Btu/lb-°F	0.104
Permeability at 300 oersted (23.9 kA/m)	1.021

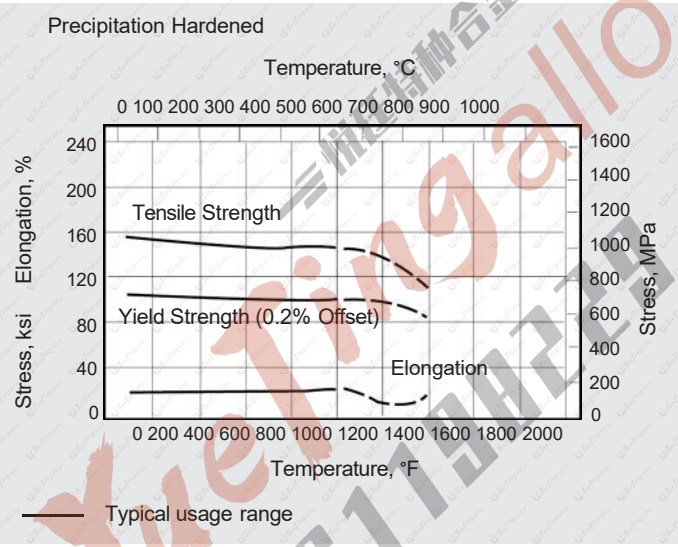
Table 1 - Limiting Chemical Composition, %

Nickel	37.0-41.0
Iron	Balance*
Chromium	17.0-19.0
Molybdenum	4.75-5.75
Titanium	2.2-2.5
Aluminum	0.7-1.0
Carbon	0.03-0.08
Silicon	0.5 max
Copper	0.5 max
Manganese	0.2 max
Cobalt	1.0 max.
Boron	0.001 max.
Zirconium	0.02-0.05
Sulfur	0.015 max

*Reference to the 'balance' of a composition does not guarantee this is exclusively of the element mentioned but that it predominates and others are present only in minimal quantities.

Mechanical Properties

Precipitation Hardened			
Temperature		Rupture Strength (1000 h)	
°F	°C	ksi	MPa
1200	650	49	340
1300	705	36	250
1400	760	21	140



Available Products and Specifications

NIMONIC alloy PE11 is available as sheet, plate, round bar, flat bar, forging stock and wire.

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The Special Metals Corporation **t**rademarks include:

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