

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 <sup>3</sup> .....	8.02
lb/in <sup>3</sup> .....	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

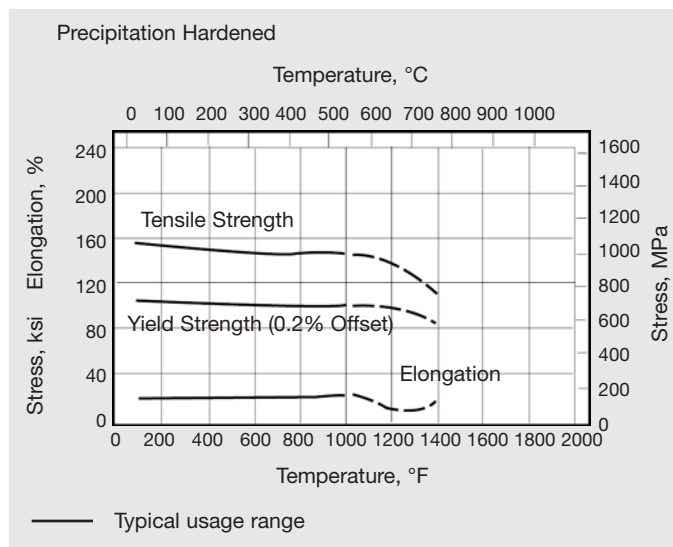
\*Reference to the 'balance' of a composition does not guarantee this is exclusively of the element mentioned but that it predominates and others are present only in minimal quantities.

**NIMONIC® alloy PE11**



## 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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