

Inconel Alloy® X-750 is a precipitation-hardenable, nickel-chromium austenitic alloy derived from Alloy 600 and strengthened through the addition of aluminum and titanium. It combines excellent resistance to corrosion and oxidation with high tensile strength and outstanding creep-rupture properties at elevated temperatures up to approximately 1,300°F (700°C). Inconel X-750 is widely used in aerospace, nuclear, and industrial applications requiring long-term strength and reliability under high thermal and mechanical stress. For extended service at temperatures above 1,100°F (593°C), the alloy may require solution heat treatment with controlled air cooling between intermediate and final aging to fully develop its high-temperature mechanical properties.

### Products & Sizes

Coil	Sheet	Precision Reroll Strip
0.0250" - 0.0680"	0.0250" - 0.0680"	0.0008" - 0.015"

### X750 Chemical Composition

	Element	Min	Max
Ni/ Co	Nickel + Cobalt	70.0	
Cr	Chromium	14.0	17.0
Fe	Iron	5.0	9.0
Ti	Titanium	2.25	2.75
Al	Aluminum	0.4	1.0
No/ Ta	Nobelium & Tantalum	0.7	1.2
Si	Silicon		0.50
S	Sulfur		0.01
Cu	Copper		0.50
C	Carbon		0.08
Co	Cobalt		1.00


### Industry Standards

- PWA-LCS
- GE Aircraft Engine (GT193)
- GE Aviation S-SPEC-35 AeDMS S-400
- RR SABRe Edition 2
- DFARS Compliant
- W.Nr 2.4669

### Industry Applications

- Gas Turbines Discs, Thrust Reversers, Wheels and Ducts
- Aircraft Structures
- Rocket Engines
- Nuclear Reactors
- Heat Treat Fixtures
- Cryogenic Vessels, Springs, and Fasteners
- Exhaust Valves of Diesel Engines

### Related Industries


**Aerospace**

**Alternative Energy**

**Defense**

**Oil & Gas**

**Power Generation**

**Space**

## Physical Properties

Physical Properties of X750	
Property	Value
Density, lb/in <sup>3</sup>	0.299
Melting Range	2540-2600°F, 1395-1425°C
Curie Temperature	-225°F as hot-rolled -193 triple-heat-treated (2100°F/2 hr, A.C., +1500°F/24 hr, A.C. + 1300°F/20 hr, A.C.)
Magnetic Permeability	70°F, 200H, as hot rolled 1.0020 1.0035 triple-heat-treated (2100°F/2 hr, A.C., +1500°F/24 hr, A.C., +1300°F/20 hr, A.C.)
Emissivity Oxidized Surface	600°F 0.895, 2000°F 0.925
Linear Contraction During Precipitation Treatment	1300°F/20 hr), in/in Hot-rolled 0.00044, 20% Cold-rolled 0.00052, Annealed 0.00026

## Mechanical Properties

Minimum Specified Properties	
Property	Value
Ultimate Tensile Strength, ksi	120
.02% Yield Strength, ksi	60
Elongation, %	30

Heat Treatment	
Specification	Value
AMS 5541	1300°F/20 hr., AC (Constant-temperature precipitation treatment).
AMS 5598	1350°F/8 hr., FC to 1150°F, Hold at 1150°F for total precipitation-treating time of 18 hr., AC (Furnace-cool precipitation treatment).