

Inconel Alloys – Technical Data Sheet

Inconel Alloys are a family of high-performance nickel-chromium-based superalloys known for their exceptional resistance to high temperatures, corrosion, and oxidation. They are widely used in extreme environments where ordinary stainless steels would fail.

What are Inconel Alloys?

Inconel is a registered trademark of Special Metals Corporation. These alloys offer superior strength and resistance to heat and corrosion, making them ideal for aerospace, chemical processing, marine, and power generation applications.

Key Features

- Excellent high-temperature strength and stability
- Superior resistance to oxidation and corrosion
- Outstanding performance in harsh chemical environments
- High resistance to pitting and crevice corrosion
- Good weldability and fabricability
- Exceptional resistance to stress corrosion cracking
- Long service life in extreme conditions

Popular Inconel Grades

Inconel 625 (UNS N06625)

Property	Value
Density	8.44 g/cm ³
Tensile Strength	827 MPa (Min)
Yield Strength	414 MPa (Min)
Elongation	30% (Min)
Hardness	≤ 287 HB
Melting Range	1290°C – 1350°C
Standards	ASTM B443, ASTM B444, AMS 5599

Inconel 718 (UNS N07718)

Property	Value
Density	8.19 g/cm ³
Tensile Strength	965 MPa (Min)

Yield Strength	550 MPa (Min)
Elongation	20% (Min)
Hardness	≤ 40 HRC
Melting Range	1260°C – 1336°C
Standards	ASTM B637, AMS 5596

Typical Applications

Aerospace components, gas turbines, chemical processing equipment, marine engineering, nuclear reactors, heat exchangers, pressure vessels, and pollution control systems.

Available Product Forms

Sheets, plates, coils, pipes, tubes, round bars, flat bars, wires, fittings, flanges, forgings, and custom components.

Why Choose Inconel Alloys?

Inconel alloys deliver unmatched performance in extreme conditions. Their ability to withstand high temperatures and aggressive corrosive environments makes them the material of choice for critical applications where reliability and longevity are essential.

Conclusion

Inconel Alloys are premium nickel-based superalloys engineered for the most demanding industrial environments. Their superior properties ensure safety, efficiency, and durability across a wide range of high-performance applications.