

# Inconel® 625

## Product Data Sheet

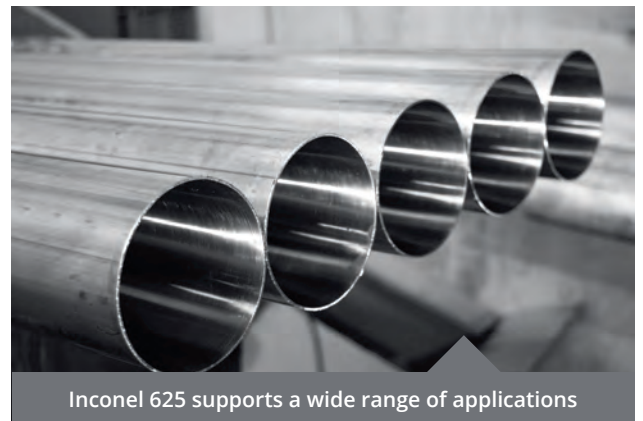
## Superior Corrosive Resistance

Alloy 625 offers versatile corrosion resistance under a wide range of temperatures

**INCONEL® nickel-chromium alloy 625 is used for its high strength, excellent fabricability (including joining), and outstanding corrosion resistance.**

Service temperatures range from cryogenic to 1800°F (982°C). The strength of Alloy 625 is derived from the stiffening effect of molybdenum and niobium on its nickel-chromium matrix; thus precipitation-hardening treatments are not required. This combination of elements is responsible for superior resistance to a wide range of corrosive environments of unusual severity as well as to high-temperature effects such as oxidation and carburization. Tests in geothermal brines indicate that Alloy 625 is highly resistant to hot geothermal fluids comparable to titanium grade 2.

Tests in simulated flue gas desulfurization environments show that Alloy 625 is highly resistant to the environment in comparison to alloys such as T316 stainless steel and comparable to Alloy C276.



Inconel 625 supports a wide range of applications

### Typical Applications:

- Exhaust systems
- Autosport components
- Seawater applications
- Aircraft ducting systems
- Chemical processing equipment
- Jet engine exhausts
- Turbine shroud rings
- Bellows & expansion joints
- Aircraft exhaust lines & chemical seals

### About Smiths High Performance

Smiths High Performance is a leading stockholder and supplier of high performance engineering materials to the global motorsport sector. We are supply partners in a range of specialist motorsport markets including Formula 1, Formula E, NASCAR, MOTO GP, WEC & WRC.

Further technical data available on the reverse of this Datasheet

## Chemical Composition

Weight %	Ni	Cr	Fe	C	Mn	Si	Mo	Al	Ti	Nb	P	S
Min:	BAL	21.0					8.0			3.2		
Max:	BAL	23.0	4.0	0.025	0.40	0.40	10.0	0.40	0.40	3.8	0.010	0.010

## Mechanical Properties

Form	Dimensions		Tensile Strength		0.2% Yield Strength		Elong A5%	Brinell Hardness HB
	mm	in	N.mm <sup>2</sup>	Ksi	N/mm <sup>2</sup>	Ksi		
Sheet, Strip cr			830	120	415	60	30	150 - 220
Sheet, Plate hr	≤ 75	≤ 3	760	110	380	55		
Rod, Bar	≤ 100	≤ 4	830	120	415	60		
	> 100	> 4	760	110	345	50		
Tube, Pipe			830	120	415	60		

## Corrosion & Oxidation

The high level of chromium and molybdenum in Alloy 625 provides a high level of pitting and crevice corrosion resistance to chloride contaminated media, such as seawater, neutral salts and brines.

## Formability

Alloy 625 is capable of being formed in the same manner as standard austenitic stainless steels.

## Material Specifications

Inconel 625 alloy is covered by the following specifications:

- AMS 5599 (sheet, strip and plate)
- AMS 5666 (bar, rings and forgings)
- AMS5837 (wire)
- ASTM B-443 (sheet and plate)
- ASTM B-446 (bar and rod)

The UNS number for this material is NO6625.

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When you purchase high performance materials from **Smiths High Performance**, you will be joining some of the biggest and best global engineering companies. We are a Tier 1 supply chain partner to the world's leading motorsport companies. Our unique business structure and ethos allows us to offer services which are otherwise unavailable in this market sector.