RIGHTON BLACKBURNS
METALS AND PLASTICS

EXPERTISE COLLABORATION INTEGRITY

Nickel Alloys

AMS 5666 (Alloy 625) Bar & Forgings

Datasheet Updated
05 August 2021

SPECIFICATIONS

Commercial	Alloy 625
Aerospace	AMS 5666

A nickel-chromium-molybdenum-niobium alloy with excellent resistance to a variety of corrosive media.

CHEMICAL COMPOSITION

ASTM B446-03
Alloy 625

Element	% Present
Aluminium (Al)	0.00 - 0.40
Carbon (C)	0.00 - 0.10
Chromium (Cr)	20.00 - 23.00
Cobalt (Co)	0.00 - 1.00
Columbium + Tantalum (Cb+Ta)	3.15 - 4.15
Iron (Fe)	0.00 - 5.00
Manganese (Mn)	0.00 - 0.50
Molybdenum (Mo)	8.00 - 10.00
Nickel (Ni)	58.00 - 0.00
Phosphorous (P)	0.00 - 0.02
Silicon (Si)	0.00 - 0.50
Sulphur (S)	0.00 - 0.02
Titanium (Ti)	0.00 - 0.40

ALLOY DESIGNATIONS

- ASTM B446-03 (2014) UNS N06625
- NACE MR0175/ISO 15156-3

SUPPLIED FORMS

- Bar
- Forgings
- Rod

APPLICATIONS

- Aircraft engine components

CHARACTERISTICS

- Exceptional resistance to pitting, crevice corrosion, erosion and intergranular corosion
- Immunity to chloride-induced stress corrosion cracking
- Good resistance to mineral acids such as nitric, phosphoric, sulfuric, and hydrochloric acids
- Good resistance to alkalis and organic acids
- Good mechanical properties
- Excellent weldability
- Low magnetic permeability
- Non magnetic and spark resistant

MECHANICAL PROPERTIES

ASTM B446-03 UNS N06625 Grade 1
Hot Worked Rod & Bar, Annealed Up to 4in (102mm) incl.

Property	Value
Elongation A50 mm	30 Min %
Proof Stress	415 Min MPa
Tensile Strength	830 Min MPa

ASTM B446-03 UNS N06625 Grade 1
Hot Worked Rod & Bar, Annealed Over 4in (102mm) - 10 in (254mm)

Property	Value
Elongation A50 mm	25 Min %
Proof Stress	345 Min MPa
Tensile Strength	760 Min MPa

EMAIL: sales@rblimited.co.uk WEB: www.rightonblackburns.co.uk

DISCLAIMER

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