



Description

Tungsten has the highest melting point and the lowest vapour pressure of all metals, which makes it an excellent material for high-vacuum technology and related applications at the highest temperatures. Its low thermal expansion, high melting point and impressive dimensional stability at high temperatures mean that Tungsten is used extensively for glass seals. Tungsten is often used in high temperature furnace construction because of its electrical resistance characteristics, while its density gives the metal high capacity to absorb radioactive radiation.

Applications

High temperature furnaces, arc lamps, welding electrodes, glass-to-metal seals, vacuum deposition, medical apparatus, lamp components, lamp filaments. **In alloy form (heavy metal or alloy):** munitions, radioactive shielding, counter balances.

PHYSICAL PROPERTIES

Density	19.3g/cm ³
Melting point	3420°C
Electrical conductivity	18 x 10 ⁶ S/m
Electrical resistivity	5.5 microhm-cm
Thermal conductivity	164 W/mK
Specific heat	0.13 J/g°C
Coefficient of linear thermal expansion	4.4 x 10 ⁻⁶ m/°C

MECHANICAL PROPERTIES

Tensile strength	
RT	1725 MPa
500°C	1035 MPA
1000°C	515 MPA
Yield Strength	750 MPa
Hardness (Vickers)	300
Modulus of elasticity	186 GPa

FORMS AVAILABLE:



Coil



Sheet



Plate



Rod



Bar

SPECIFICATIONS

AAMS	7898/7899
ASTM	B760
ASTM	F288 Type 1B
CAS	7440-33-7
UNS	R07005

CHEMISTRY



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99.95%

28 Nickel Ni 58.6934	27 Cobalt Co 58.933	26 Iron Fe 55.847
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More than just metal

We're one of Europe's leading suppliers of premium quality refractory metals and alloys, soft magnetic alloys, and controlled expansion alloys. We hold a large stock of UK-certified, materials, all with full chain custody. With a deep technical understanding, comprehensive workshop facilities, and top accreditations, we help our customers get more from their materials.

Knowledge and advice

Our team understands exactly how our products are made, how they will behave in different situations, and how they should perform. Their knowledge and expertise helps save time, effort and cost by ensuring that all materials are sourced, processed and tested to perform in the most effective way.

We partner with leading academic institutions and scientific organisations that add value to our service and help develop solutions to the challenges impacting our customers. We're keen to share these unique insights in order to deliver practical operational improvements.

Workshop and machining

Our purpose-built facilities are centred around a fully equipped workshop designed to address almost any customer request:

- CNC Proturn RLX 1630 lathe for high precision rod and bar processing
- Saws to cut bars, plate and billets from Ø 2mm to Ø 270mm
- Guillotines for sheet and coil
- Grinding machinery
- De-coiler to check for imperfections before shipping
- Coil handling equipment to inspect product before dispatch
- Water jet and laser cutting
- Heat treatments

Quality control

All orders are fully tested before shipping.

Our state-of-the-art metrology lab features:

- Micrometers, verniers and gauges for all applications
- Surface roughness tester
- Straightness and roundness testing apparatus
- Magnetometers for measuring inductance, coercive and saturation
- Capabilities for evaluating properties such as CTE, tensile and elongation.

Best practice

We are committed to continuous improvement, reflected in our achievement of internationally-recognised industry accreditations. These are the foundation of best practice and provide you with solid assurances of competence and integrity:

- **AS9120** certified – a top aerospace industry award.
- **Green Mark level 1** accreditation – an environmental certification that supports greater sustainability.
- **JOSCAR** (the Joint Supply Chain Accreditation Register) accredited – an award that helps to streamline procurement processes.
- **Cyber Essentials** certified – a government-backed programme that provides security assurance of a supplier's digital infrastructure.



Discover how we can **optimise** operational performance

Contact chris@nicofe.com



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