

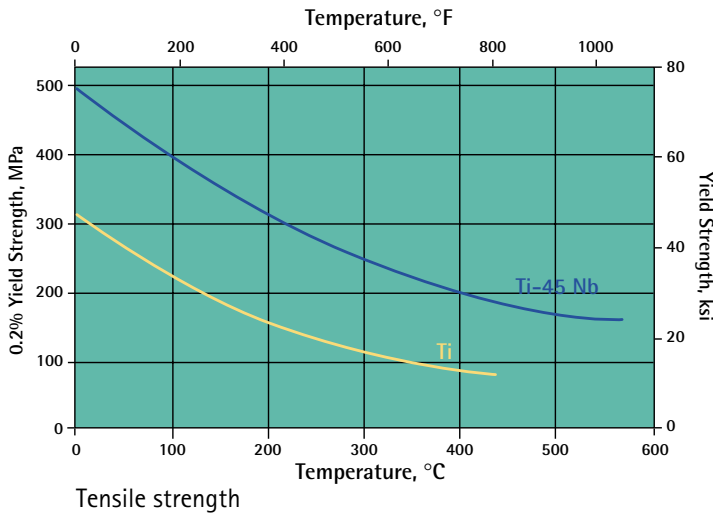
Titanium –45 Niobium

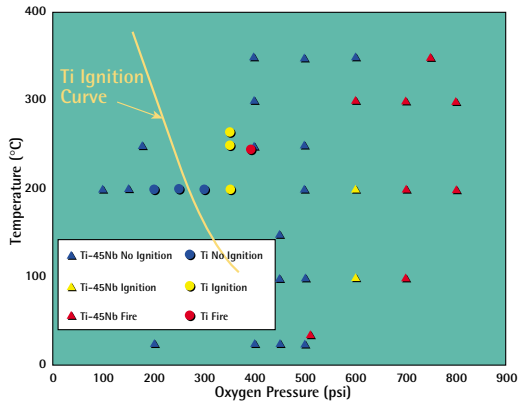
CHARACTERISTICS

- Oxygen compatible and corrosion resistant over a wide range of environments.
- Excellent fabricability
- Excellent tensile and elongation properties
- Lower elastic modulus
- Castable by standard investment casting techniques
- Simple metallurgy, which eliminates the need for post welding heat treatments

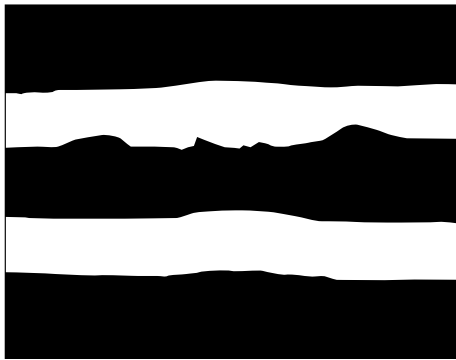
APPLICATIONS

- Aerospace rivet material
- High pressure oxygenated gas vents
- Oxygen lances for pressure oxidation reactors
- Valves for corrosive oxygenated processes
- Superconducting wire





Alloy with niobium greatly increases the threshold oxygen pressure for ignition.



Ferrallum™-255 (top coupon) showed extensive corrosion (50% of wall thickness) after eight months in a mining autoclave. Ti-45 Nb (bottom coupon) showed no measurable corrosion after four months and has tested well for nearly two years.

Let Wah Chang show you how Ti-45 Nb can increase your ROI in severe service oxygen-enriched environments. Call Rob Henson at 541-926-4211, ext. 6920 or e-mail rob.henson@wahchang.com

Corrosion Resistance and Oxygen Compatibility for Severe Service Environments

Ti-45 Nb Data

Composition:	55 wt% titanium 45 wt% niobium
Density:	5.7 g/m ³ (.206 lb/in. ³)
Thermal Conductivity:	10 W/m °K (5.7827 BTU (Hr) (Ft) (°F))
Thermal Diffusivity:	4.3 m ² /s x 10 ⁻⁶ (46.3 Ft ² /sec)
Specific Heat:	0.427 J/g °C (0.1021 BTU) lb °F
Coefficient of Thermal Expansion (CTE):	9.03 x 10 ⁻⁶ /°C (5.02 x 10 ⁻⁶ /°F)
Modulus of Elasticity:	62.05 GPa (9 x 10 ⁶ psi)
Ultimate Tensile Strength (rt):	546 MPa (79,200 psi)
Typical Yield Strength (rt):	480 MPa (69,600 psi)
Elongation (rt):	23% (1 in. gage)
High Temperature Strength:	Refer to tensile strength table on front side of data sheet