

Manufacturing

TiAl TNB-V2 forging stocks are manufactured by VAR skull melting and centrifugal casting in permanent molds based on a single or double VAR melted consumable electrode. Consumable electrodes (ingots) are made up of compacted Ti sponge, Aluminum and master alloys.

Applications

TiAl TNB-V2 remelt stocks are used as feed stock materials for subsequent investment casting operations in order to manufacture net shape or oversized parts. The alloy exhibits an outstanding high temperature capability particularly with regard to creep and oxidation properties.

Chemical Composition

Ti -45Al -8Nb -0.2C (at.-%)

Alloying Elements (wt.-%)

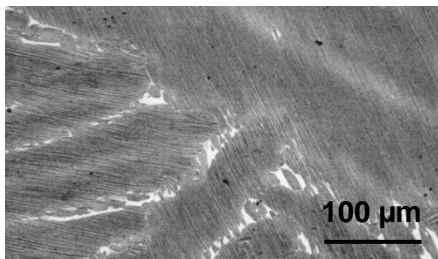
Ti	Al	Nb	C
bal.	28.9	17.7	0.057
	+/- 0.8	+/- 1.0	+/- 0.02

Impurities (wt.-ppm)

H	N	O	C	Fe	Ni	TOE
< 50	< 200	< 800	< 200	< 1000	< 500	< 1000

Forms of Delivery

Cylindrical slugs of 30 mm – 70 mm diameter and up to 350 mm length. Surface conditions as-cast. Other sizes and individual customer specifications on request.



Physical Properties

Density:	4.2 g/cm ³
Hardness:	390 HV10
Youngs Modulus (RT):	160 GPa
(700 °C):	140 GPa

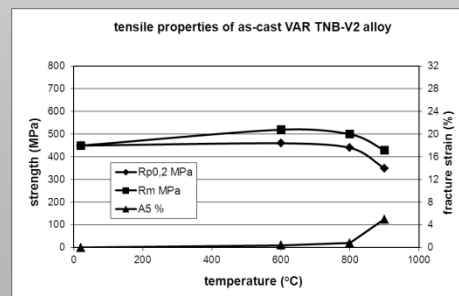
Microstructure consists of:

- extended α_2/γ lamellar colonies
- small amounts of globular $\beta/B2$ and globular γ -TiAl grains

$T_{\text{eutectoid}}$: 1210 °C

$T_{\alpha\text{-transus}}$: 1330 °C

Working Temp.: up to 900 °C



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