Xometry

Datasheet

TC5

Description

TC5 is a common titanium alloy material, primarily composed of titanium (Ti) as the base, with the addition of elements such as aluminum (Al) and vanadium (V) to enhance its properties. The typical composition ratio is approximately 90% titanium, 6% aluminum, and 4% vanadium. This combination gives TC5 high strength and good corrosion resistance, making it suitable for applications in the aerospace and medical fields.

Features

1. High strength: The addition of aluminum and vanadium significantly enhances the material's mechanical properties, allowing it to remain stable even at high temperatures.
2. Corrosion resistance: Titanium's natural oxidation resistance enables TC5 to perform exceptionally well in harsh environments.
3. Lightweight: Compared to steel, TC5 has a lower density, making it suitable for applications that require weight reduction.

Parameters

TC5's Chemical Composition (%)

Composition	Fe	C	Si	Cr	N	Al	H	O	Other Individual	Other Total	More
Min.	-	-	-	2	-	4	-	-	-	-	Ti balance
Max.	0.3	0.1	0.4	3	0.05	6.2	0.015	0.15	0.1	0.4	

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Other Individual or Other Total refers to chemical compositions not specified in the table. Analysis should only be performed when the presence of a substance is assumed or routinely screened for, and there is evidence suggesting its concentration may exceed the specified limit.

Physical Properties

Density:4.51 g/cm^3

Melting point: Approximately1660°C

Coefficient of thermal expansion: 8.8x10-6/°C

Thermal conductivity: Approximately 7.5 W/ (m.K)

Elastic modulus:110 GPa

Non-magnetic

Mechanical Properties (Annealed State)

Tensile strength: ≥95 MPa

Yield strength: ≥ 825 MPa

Elongation at break: ≥10%

Reduction of area: ≥25%

Hardness: HB 300~340