

Technical Data: MIM Ti-15V-3Cr-3Al-3Sn Titanium Alloy

Product Description



Ti-15V-3Cr-3Al-3Sn, a titanium alloy, exhibits exceptional characteristics when utilized in Metal Injection Molding (MIM) processes. With a tensile strength of approximately 1100 MPa and an impressive specific strength, it allows for the creation of lightweight yet sturdy components.

Additionally, Ti-15V-3Cr-3Al-3Sn showcases remarkable corrosion resistance properties, ensuring the longevity of parts in demanding environments. Its high-temperature stability and creep resistance are vital for power tools and consumer electronics applications, where components must withstand extreme conditions. In summary, this titanium alloy's unique blend of strength, lightweight design, and corrosion resistance positions it as an invaluable material in MIM, enabling the production of high-precision parts that meet the stringent requirements of various industries, including Aerospace, Automotive, and Power Tools.

Chemical Composition

Titanium (Ti)	Vanadium (V)	Chromium (Cr)	Aluminum (Al)	Tin (Sn)
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75%	15%	3%	3%	3%
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Physical and Mechanical

Alloys	Status	Tensile Strength	Yield Strength	Impact Strength	Hardness	Young's Modulus	Poisson's Ratio	Elongation	Density
		Mpa	Mpa	J	HRC	Gpa	Ratio	% in 25.4 mm	g/cm ³
MIM Ti-6Al-7Nb	As Sintered	1100	1000	25	40	120	0.3	10	4.3

Typical Properties

Ti-15V-3Cr-3Al-3Sn MIM Sintering Aircraft Components

Ti-15V-3Cr-3Al-3Sn, when processed through Metal Injection Molding (MIM) sintering, offers a range of advantages that make it exceptionally well-suited for aircraft component applications. Precision and high strength are paramount in the aerospace industry, and Ti-15-3 excels in both aspects. It is employed in critical components such as engine turbine blades, where its high tensile strength of 1100 MPa ensures reliable performance under extreme conditions.

Furthermore, Ti-15-3's low density, at just 4.3 g/cm³, contributes to the overall weight reduction of aircraft, enhancing fuel efficiency and reducing emissions. Additionally, its excellent dimensional accuracy, resulting from MIM sintering, allows for intricate and complex part geometries, optimizing aerodynamics and overall aircraft performance.



Note

The above data are reference material science data. This data reference is not binding and is not considered as authoritative test data. If your material requirements are extremely precise, please contact our material engineers. Tel | +86 18926788217 | Web | www.newayprecision.com | Contact Neway



MIM Ti-15V-3Cr-3Al-3Sn Injection Molding

Titanium Alloy Injection Molding

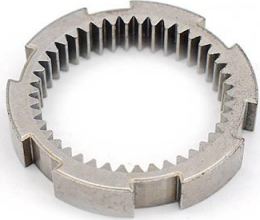
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Typical Properties

Ti-15V-3Cr-3Al-3Sn MIM Sintering Engine Parts



Ti-15V-3Cr-3Al-3Sn, produced through Metal Injection Molding (MIM) sintering, finds critical applications in engine components, particularly within the aerospace and automotive sectors. In aviation, where the demand for lightweight, high-performance materials is constant, Ti-15-3 is a standout choice. Its impressive tensile strength of up to 1100 MPa makes it ideal for engine parts like compressor blades, which experience extreme mechanical stresses.

Ti-15-3's properties make it an excellent candidate for high-stress engine parts such as valves, pistons, and connecting rods in the automotive industry. Its strength, low density (4.3 g/cm^3), and resistance to high-temperature environments contribute to improved engine efficiency and reduced fuel consumption. Furthermore, the precision achieved through MIM sintering allows for intricate geometries, enhancing the overall performance of these engine components.

Ti-15V-3Cr-3Al-3Sn MIM Sintering Bicycle Parts

While Ti-15V-3Cr-3Al-3Sn is commonly associated with aerospace and automotive applications, its advantages extend to bicycle manufacturing, offering innovative solutions for high-performance bicycle components. The material's exceptional strength, with tensile values reaching up to 1100 MPa, allows for creating lightweight but durable bicycle parts. In particular, Ti-15-3 is well-suited for crafting bicycle frames and forks, where its high strength-to-weight ratio contributes to enhanced stability and maneuverability.

Additionally, Ti-15-3's resistance to corrosion is vital for bicycle parts that are frequently exposed to the elements. Components like handlebars, stems, and cranksets can benefit from this corrosion resistance, ensuring longevity and reliability. The precise manufacturing achieved through Metal Injection Molding (MIM) sintering further allows for intricate designs, optimizing aerodynamics and reducing weight, making Ti-15V-3Cr-3Al-3Sn an innovative choice for high-performance bicycle components.



Ti-15V-3Cr-3Al-3Sn MIM Sintering Chemical Fasteners



Ti-15V-3Cr-3Al-3Sn, produced through Metal Injection Molding (MIM) sintering, introduces remarkable possibilities in chemical fasteners, particularly in industries where extreme conditions and corrosion resistance are paramount.

In chemical processing, where exposure to aggressive chemicals is every day, Ti-15-3's exceptional corrosion resistance ensures the reliability and longevity of fasteners, preventing system failures. Its high tensile strength of up to 1100 MPa guarantees the structural integrity of these fasteners under substantial mechanical loads, offering a safety margin in critical connections. Ti-15-3's resistance to high-temperature and high-pressure conditions makes it an ideal choice for fasteners in these environments, reinforcing Neway's dedication to providing cutting-edge solutions for various industries.

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