

m4p PureTi grade2

Ti-base for Laser Powder Bed Fusion

Description, properties and applications

m4p™ PureTi grade2 is a **ultrapure titanium powder** whose composition corresponds to the German **material number 3.7035** or **R50400** according to the **UNS numbering system**. There is an even purer variant - grade 1 - whereby both grades differ mainly in the maximum oxygen content. The oxygen content can be used to influence the achievable strength levels - if higher **strengths** (with slightly reduced elongation values) are required, grade 2 is preferred. m4p™ PureTi grade2 is widely used in sectors such as **medical engineering** and the **chemical industry**, where the two most striking properties of pure titanium - high **biocompatibility** and excellent **corrosion resistance** - are key selection criteria. Taking into account the applicable safety criteria (reactivity) and the technical system requirements for atmospheric purity, m4p™ PureTi grade2 can be excellently processed using the laser-based powder bed process.

Powder characteristics

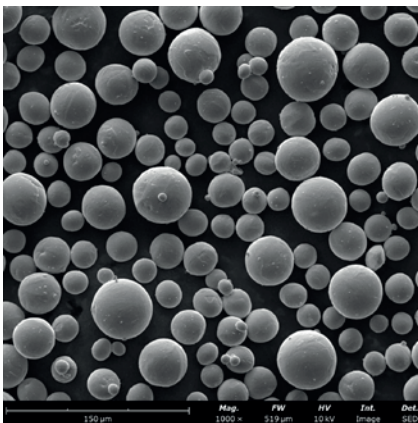


Image: SEM image of an m4p™ PureTi grade2 powder

Chemical analysis [wt%]		
Element	Min	Max
C		<0.08%
Fe		<0.30%
O		<0.25%
Ti		Base

Other limited elements: N, Y, H

Additive manufacturing and material characteristics

(rel. density >99.9%; volume rate 18.1 cm³/h; layer thickness 30µm; EOS M290)

	Tensile strength Rm [N/mm²]	Yield strength Rp0.2 [N/mm²]	Elongation at break A ₅ [%]	Young´s modulus [GPa]
as-built Sample orientation ↓	660 - 745	560 - 615	22 - 25	107 - 115
heat-treated (stress-relieved) Sample orientation ↓	590 - 620	470 - 520	>25	108 - 115

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