

# m4p AlSi7Mg

## Aluminum alloy for PBF

### Description and properties

**m4p™ AlSi7Mg** is a versatile universal alloy with good mechanical properties and a high level of corrosion resistance. Due to the high silicon content, the alloy shows a low tendency to hot cracks and can be processed excellently additively across all powder bed-based AM systems. With magnesium as a component of the alloy, the material is suitable for precipitation hardening so that the heat treatment process „T6“ typical of aluminum can be employed. The ductility, in particular, can thus be subsequently improved and process-specific anisotropies can be reduced.

The characteristic density of **m4p™ AlSi7Mg** is approx. 2.68g /cm<sup>3</sup>, which in combination with tensile strengths of approx. 350N/mm<sup>2</sup> facilitates structural lightweight applications in aerospace, automotive engineering, the food industry, or the production of prototypes. Compared to the m4p™ AlSi10Mg, the strength values are somewhat reduced. However, the electrical and thermal conductivity are a bit higher and also suitable for black anodizing for technical purposes. **m4p™ AlSi7Mg** is comparable to the material A357.0 of the American standardization (ANSI).

### Powder characteristics

Chemical analysis [wt%]		
Element	Min	Max
Si	6,50	7,50
Mg	0,40	0,70
Fe	<0,20	
Al	Base	

### Additive manufacturing and strength properties

Typical characteristics of tensile test		
(Parameter 99.8%, Density, as-built)		
Tensile strength	R <sub>m</sub> =	350N/mm <sup>2</sup>
Yield strength	R <sub>e</sub> =	240N/mm <sup>2</sup>
Elongation at break	A =	6%

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