



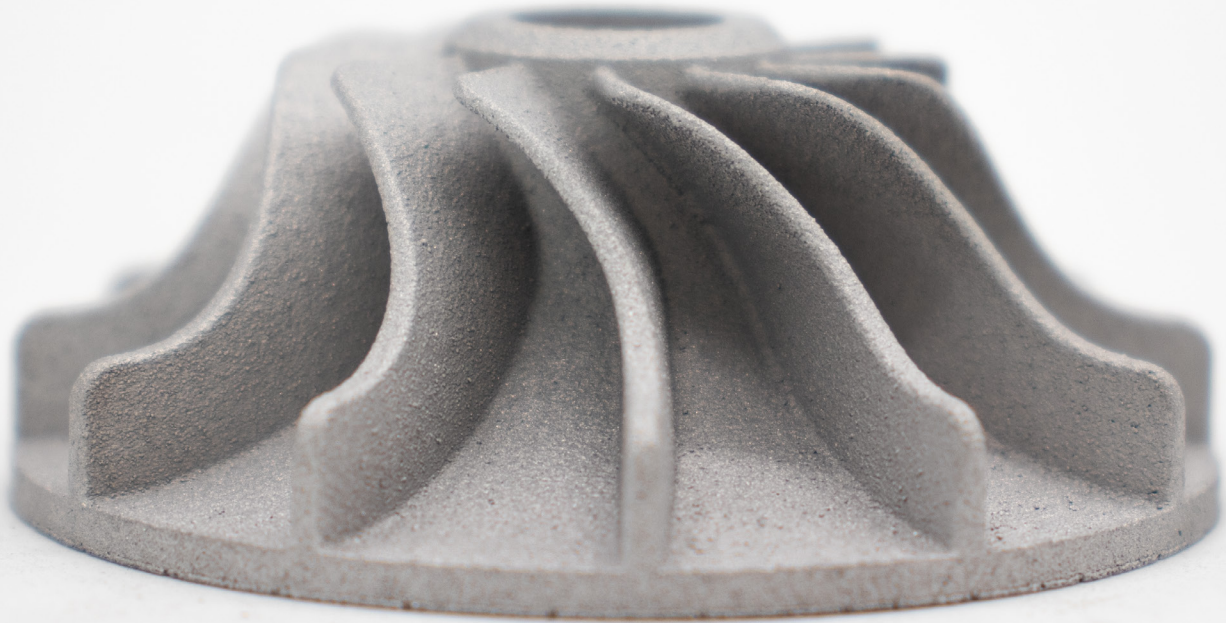
ONE CLICK METAL

Aluminium AlSi10Mg (3.2382)

MATERIAL
DATA SHEET

www.oneclickmetal.com

2022.11-03



AlSi10Mg (3. 2382)

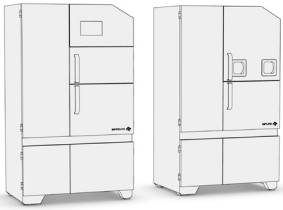
The material AlSi10Mg is a high strength Aluminum alloy with age hardening properties. Apart from increasing the hardness of the material, the presence of Silicon also has a positive impact in the viscosity of the melt pool, making the alloy more processable than pure Aluminum in additive manufacturing. It is a common material in the aviation due to its excellent thermal conductivity, higher weight to strength ratio, good corrosion resistance and good processability. It is also often used in the casting industry as thin-walled components with good mechanical properties can be manufactured using this alloy.

Properties

- High strength and hardness
- Good thermal properties
- Good processability
- High corrosion resistance

Applications

- Aviation and Aerospace
- Automotive
- Prototype cast parts
- Serial parts



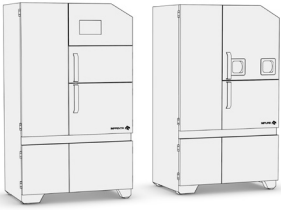
Powder properties

Chemical Composition (wt.%)

Element	Min.	Max.
Si	9.0	11.0
Mg	0.2	0.45
Al	Balance	

Process information

System Set-up	MPRINT+
Parameter	AlSi10Mg 20µm
Software	Netfabb, MPREP
Powder part-no.	MSUPPLY AlSi10Mg
Layer thickness	20µm
Coater	X-Lip
Inert gas	Nitrogen
Sieve	80µm



Physical and Mechanical Properties

In as-built condition the tensile strength of the material is approx. 400 N/mm². In addition, it is possible to perform a P6 heat treatment to achieve higher ductility.

Physical properties

Defects	Result
Average defect (%)	<0.5

Mechanical properties ISO6892-1

Vertical	Yield strength Rp0.2 [MPa]	Tensile strength Rm [MPa]	Elongation at break A [%]
Average	207	411	5
Absolute Standard Deviation	3	12	1