Micro Laser Sintering

3D MicroPrint GmbH manufactures high-precision micro metal parts using Micro Laser Sintering technology. We offer a holistic service from product design, prototype development to series production of your unique component.

Why 3D MicroPrint GmbH?

- Micro Laser Sintering combines the advantages of additive manufacturing with those of micro machining
- Complex geometries with high resolution, high dimensional accuracy and low surface roughness
- Moving parts without further assembly - with our “print-as-one” solution
- Micro metal parts with entire value chain from engineering to post-processing
- QM system certified according to DIN EN ISO 9001 and 13485

Technical Key Figures

- Building platform: 60 x 60 x 40 mm (LxWxH)
- Layer thickness: 5 µm
- Laser spot size: < 30 µm
- Accuracy resolution: 5 µm
- Minimum wall thickness: 30 µm
- Roughness: Ra: 1 µm Rz: 5 µm
- Part density: > 99.5 %

Materials

- 1.4404 (316L)
- 1.4542 (17-4PH)
- 3.7165 (Ti6Al4V)
- Inconel® 718
- Tungsten
- (Pure) titanium grade 4
- (Pure) copper
- Precious metals

Further materials within the scope of a development process

Case Studies

Merger Tree

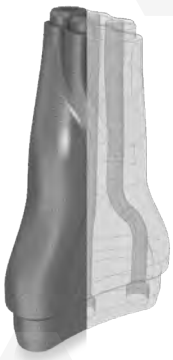
- 1,024 tubes Ø 120 µm combined into a single tube Ø 7 mm
- 120 µm to 7 mm tube diameter
- min. 80 µm wall thickness
- Size: 13 x 13 x 16 mm
- Material: Ti6Al4V
- Weight: 1.4 g

Forceps/Gripper

- One piece instead of 5 individual pieces and several suppliers
- Integrated channel for lighting
- Single piece production without assembly
- Length: 30 mm
- Material: 1.4404 (316L)
- Weight: 1.25 g

Optical fiber guide

- Twisted fiber guide for modular system
- Complex channel ducts with very good surface quality and geometry tolerances
- Inner channel diameter: 500 µm
- min. 200 µm wall thickness
- Height: 10 mm
- Material: 316L (1.4404)



3D MicroPrint GmbH • Technologie-Campus 1 • 09126 Chemnitz/Germany
+49 371 83652116 • info@3dmicroprint.com • www.3dmicroprint.com

Applications

Heat exchanger

Key data

- Web width: 130 µm
- Channel width: 870 µm
- Channel height: 170 µm
- Dimensions: 21 x 13 x 7.2 mm
- High surface area to weight ratio

Nozzle

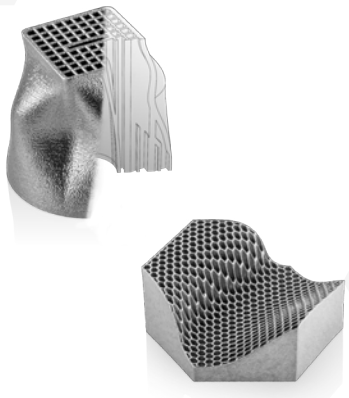
Key data

- Produces fine, defined spray mist from compressed air and water
- Integrated functions (thread, hose attachments)
- Nozzle wall thickness: > 200 µm

Complex 3D lattice structures

Key data

- Save weight without sacrificing stability of parts
- Different functions like shielding, guiding or separating fluids in medical devices, reactors, heat exchangers, fuel cells and other microfluidic applications
- Lattice structure with 100 µm wall thickness



3D MicroPrint GmbH • Technologie-Campus 1 • 09126 Chemnitz/Germany
+49 371 83652116 • info@3dmicroprint.com • www.3dmicroprint.com