HP Multi Jet Fusion

PA 12 Smooth (PA 12 S)

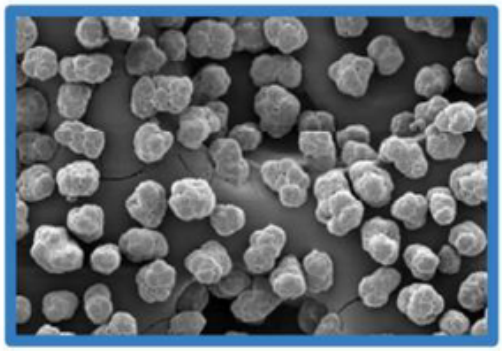
Description

PA 12 Smooth is a cost-effective nylon 12 material that delivers excellent surface resolution and detail, high chemical resistance, and good stiffness and accuracy. It is perfect for functional prototyping, fine feature details, and end-use products. The linear roughness has been improved, reducing the time and cost of post-processing the final parts. This material is ideal for consumer goods, dental molds, jigs & fixtures, etc.

Benefits

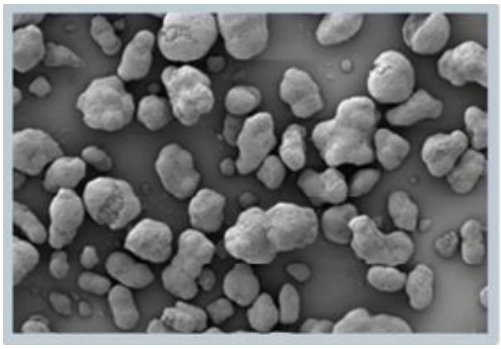
- Less ductility
- Premium surface aesthetics (up to 70% smoother)
- Lower cost per part (up to 25% variable cost reduction)
- Minimize waste and recyclability (up to 85% powder reusability)
- 50% reduced carbon footprint
- Shorter lead times

Particle Shape & Size Distribution



HP 3D HR PA 12 S, enabled by Arkema material

- All particles are similar size
- Unique particle shape
- Non-reactive material



Other PA 12

- Various particle sizes
- Less rounded particle morphologies
- Reactive material

Mechanical Properties

Material Name	PA 12 S	Method
Description	HP 3D High Reusability PA 12 S	ASTM D638
Tensile Strength (MPa)	Average XY (45) Average Z (43)	ASTM D638
Tensile Modulus (MPa)	Average XY (1700) Average Z (1700)	ASTM D638
Elongation at Yield (%)	Average XY (10) Average Z (6)	ASTM D638
Elongation at Break (%)	Average XY (12) Average z (6)	ASTM D638
Impact Strength (kJ/m²)	Average XY (3,2) Average Z (2,5)	ASTM D256
Density (g/cm³)	0.98	ASTM D792

Dimensional Properties

Material Name	PA 12 S	
	Tolerances for Cpk= 1.33 (in mm)	**Tolerances for Cpk= 1.00 (in mm)**
0-30mm	XY = ± 0.25 Z = ± 0.42	XY= ± 0.19 Z= ± 0.34
30-50mm	XY = ± 0.30 Z = ± 0.50	XY= ± 0.23 Z= ± 0.40
50-80mm	XY = ± 0.37 Z = ± 0.60	XY= ± 0.28 Z= ± 0.47