



MATERIAL PA 12 S — POLYAMIDE

Manufacturer: **ARKEMA**

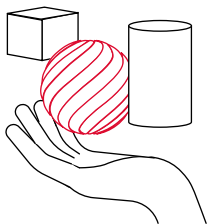


PA 12 S provides up to 70% smoother surfaces due to its narrow size spread and unique particle shape, which is ideal for parts with high surface quality requirements. The surface of printed parts remains smooth without additional post-processing, which allows the material to be used for the manufacturing of functional prototypes, final products with high resolution and precise geometric characteristics.

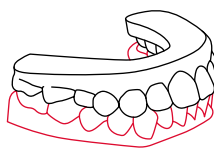
In medical prosthetics, the material ensures the smooth and precisely reproduced surfaces of prosthetic components without additional polishing. The stable characteristics of the production process result in high geometric precision and surface finish, both of which are important factors for comfort, functionality and aesthetic appearance in prosthetics. This approach facilitates both the manufacturing of individual prosthetic products and the new designs prototyping in the medical industry.

The low material reactivity improves the print process stability and reduces the need for additional polishing with minimal impact on total production time. HP Multi Jet Fusion technology produces uniform, smooth surfaces on finished products.

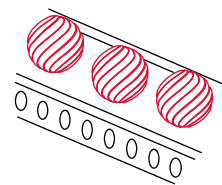
Application areas:



Consumer goods



Medicine



Industry

Basic properties

Powder melting point (according to DSC)	~185°C - 190°C
Particle size	50 - 60 µm
Density	~0,98 g/cm ³

Mechanical characteristics

Tensile strength, max. load, XY	45 MPa
Tensile strength, max. load, Z	43 MPa
Elastic modulus in tension, XY	1700 MPa
Elastic modulus in tension, Z	1700 MPa
Elongation at break, XY	12 %
Elongation at break, Z	5 %
Bending strength (at 5 %), XY	65 MPa
Bending strength (at 5 %), Z	65 MPa
Flexural modulus, XY	1700 MPa
Flexural modulus, Z	1700 MPa
Notched Izod impact strength (at 3.2 mm, 23 °C), XYZ	2 kJ/m ²
Hardness (Shore D)	D 75 - 80
Dielectric permittivity	3,5 - 4,0
Dielectric strength	~15 kV/mm

Heat resistance

Heat deflection temperature (at 0.45 MPa), XY	165 °C
Heat deflection temperature (at 0.45 MPa), Z	165 °C
Heat deflection temperature (at 1.82 MPa), XY	95 °C
Heat deflection temperature (at 1.82 MPa), Z	95 °C

Liquid resistance

Exposure to alkaline environment	Has little affect
Exposure to gasoline	Has little affect
Exposure to acetone	Has little affect
Exposure to methyl alcohol	Has little affect
Exposure to acetic acid	Has little affect
Exposure to carbon dioxide	Doesn't affect
Exposure to motor oil	Doesn't affect
Exposure to UV radiation	Has little affect
Exposure to IR radiation	Doesn't affect
Exposure to bleach	Has little affect
Exposure to sulfuric acid	Affects
Exposure to hydrochloric acid, 20% solution	Affects
Exposure to phosphoric acid, 10% solution	Affects

*Note: Actual performance may vary depending on printing, post-processing, and operating conditions. For more information, please consult official HP technical documents.