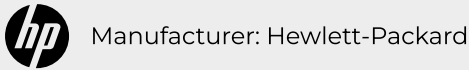




MATERIAL HP PA 12 W — POLYAMIDE

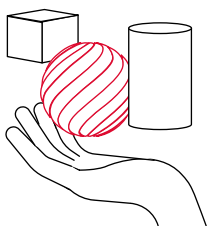


HP PA 12 W is a high-density thermoplastic with balanced mechanical properties and a strong part structure. The material's white color interacts well with dyes, paints and other finishing methods, making it easy to tailor the final products to aesthetic or functional requirements.

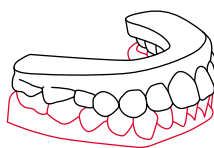
The material is characterized by resistance to oils, greases, aliphatic hydrocarbons and alkalis, which ensures reliability in various operating conditions. Its mechanical properties combine biocompatibility, low durometer, and tear resistance, and its tensile modulus is about 1900 MPa. This makes HP PA 12 W suitable for the manufacturing of complex assemblies, housings and hermetic structures. It also enables its use in the manufacturing of biocompatible products, including medical devices, prosthetics and other products that come into contact with unaltered skin (in accordance with USP Class I-VI and US FDA guidelines).

Application areas include the manufacture of biocompatible prostheses, medical devices, decorative lighting elements, fashion items and accessories, and household appliances. The material is suitable for rapid prototyping as well as small and medium-sized production runs, ensuring the accuracy and consistency of the parts' geometric characteristics.

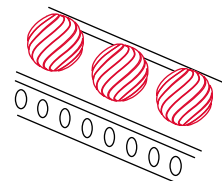
Application areas:



Consumer goods



Medicine



Industry

Basic properties

Powder melting point (according to DSC)	~188°C
Particle size	57 μm
Powder bulk density	~0,43 g/cm ³
Finished parts density	~1,01 g/cm ³

Mechanical characteristics

Tensile strength, max. load, XY	49 MPa
Tensile strength, max. load, Z	45 MPa
Elastic modulus in tension, XY	1900 MPa
Elastic modulus in tension, Z	1850 MPa
Elongation at break, XY	17%
Elongation at break, Z	9 %
Bending strength (at 5 %), XY	70 MPa
Bending strength (at 5 %), Z	70 MPa
Flexural modulus, XY	1800 MPa
Flexural modulus, Z	1800 MPa
Notched Izod impact strength (at 3.2 mm, 23 °C), XYZ	4,1 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	175 °C
Heat deflection temperature (at 0.45 MPa), Z	175 °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	No 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.