



# Nylon 12 / PA 12 (SLS)

## Alternative Designations

Polyamide 12

## Key Features

Good impact strength • Tough • Can be slightly flexed without fracture • High thermal resistance • Biocompatible

## Description

Nylon PA 12 is one of the most popular 3D printing materials. It has good mechanical properties such as toughness, tensile strength and impact strength. This material can also be flexed without fracture. It has a melting point of 176°C with low water absorption. It is broadly used for sterilized films for packaging materials in the food and pharmaceutical fields.

## Mechanical Properties

Tensile modulus	1650 MPa
Tensile strength	48 MPa
Elongation at break	15 – 20%
Flexural strength	41 MPa
Flexural modulus	1.73 GPa

## Thermal Properties

Melting temperature (20°C/min)	176°C
Heat deflection temperature (1.80 MPa)	70°C
Heat deflection temperature (0.45 MPa)	154°C
Softening temperature	155°C

## Physical Properties

Density	0.93 g/cm <sup>3</sup>
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## Reference

Datasheets provided by Xometry contain materials sourced through trusted OEMs, material distributors, and databases. Please visit [Materialdatacenter.com](https://Materialdatacenter.com) for further information on this material.



# Nylon 12 / PA 12 (MJF)

## Alternative Designations

Polyamide 12

## Key Features

Good impact strength • Tough • Can be slightly flexed without fracture • High thermal resistance • Biocompatible

## Description

Nylon PA 12 is one of the most popular 3D printing materials. It has good mechanical properties such as toughness, tensile strength and impact strength. This material can also be flexed without fracture. It has a melting point of 176°C with low water absorption. It is broadly used for sterilized films for packaging materials in the food and pharmaceutical fields.

## Mechanical Properties

Tensile modulus	1800 MPa
Tensile strength	48 MPa
Elongation at break	15 – 20%
Flexural strength	65 MPa
Flexural modulus	1.73 GPa

## Thermal Properties

Melting temperature (20°C/min)	187°C
Heat deflection temperature (1.80 MPa)	95°C
Heat deflection temperature (0.45 MPa)	175°C
Softening temperature	155°C

## Physical Properties

Density	1.01 g/cm <sup>3</sup>
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## Reference

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