

# Nylon 12-FR

# INDUSTRIAL GRADE MATERIALS FOR SLS 3D PRINTING



MATERIAL NAME
Nylon 12-FR

COLOR
White

PROCESS
SLS

## PRODUCT DESCRIPTION

Nylon 12-FR is a specially modified flame-retardant thermoplastic polyamide material, featuring excellent mechanical properties, dimensional stability, and outstanding flame retardancy. Modified with halogen-free, eco-friendly flame retardants, the material meets international fire safety standards such as UL 94 V-0 and EN 45545. It is particularly suitable for industries with stringent fire protection requirements, including electrical, electronics, automotive, and rail transportation.

## TYPICAL APPLICATIONS

- Electronic appliances
- The automotive industry

- Aerospace and military industry
- Industrial equipment and energy

## **PRODUCT SAFETY**

Most nylon products are biocompatible materials. There is no problem with normal skin contact. Only a small number of people will experience slight skin irritation.

## PRODUCT DELIVERY & WAREHOUSING

#### MOISTURE CONTROL

Nylon is highly hygroscopic. Store in a dry environment with humidity below 50% to prevent dimensional swelling and performance degradation.

Use sealed packaging with desiccants or vacuum storage.

#### TEMPERATURE CONTROL

Keep storage temperature between 5°C and 35°C. Avoid high temperatures (>60°C) that may cause deformation and low temperatures (<0°C) that may induce brittleness.

#### UV PROTECTION

Avoid exposure to UV light to prevent material aging, such as yellowing, brittleness, or loss of mechanical properties.

#### PHYSICAL PROTECTION

Prevent heavy stacking or impacts to avoid deformation or cracking.

## MATERIAL PROPERTIES

Properties	Test Method	Value
Hardness	/	/
Flexural modulus (Mpa)	ASTM D790	2200 MPa
Flexural strength (Mpa)	ASTM D790	73 MPa
Tensile modulus (Mpa)	ASTM D638	2550 MPa
Tensile strength (Mpa)	ASTM D638	46 MPa
Elongation at break	ASTM D638	4%
Poisson's Ratio	/	/
Impact strength notched Izod (J/m)	IS0 179/1eA	3 kJ/m²
Heat deflection temperature (°C)	ASTM D648	HDT @0.45 MPa: 176°C HDT @1.82 MPa: 105°C
Glass transition,Tg (°C)	/	/
Coefficient of themal expension(/°C)	/	/
Density (g/cm3)	DIN 53466	1.02 g/cm³

Tips: Want to explore a wider range of materials? Check out https://www.unionfab.com/materials

