



# Nylon 6 / PA 6

## Alternative Designations

Polycaprolactam

## Key Features

Tough • Resistant to wear and chemicals • High strength, rigidity, and lubricity

## Description

It is a linear, semi-crystalline polymer composed of repeating p-phenylene units. The number 6 in the name refers to the fact that there are six carbon atoms in the repeating unit. Nylon 6 is made by ring-opening polymerization of caprolactam. The fibers are tough but retain high tensile strength and elasticity. It is extremely resistant to wear and has low friction with good electrical insulation. In addition, it has excellent chemical resistance. It is ideal for components that move and slide such as bearings, gears, and electronic connectors.

## Mechanical Properties

Tensile strength	40 MPa
Elongation at break	60%
Flexural strength	20 – 150 MPa
Flexural modulus	1 GPa
Hardness (Shore D)	81

## Thermal Properties

Melting temperature (20°C/min)	230 – 280°C
Heat deflection temperature (1.80 MPa)	80°C
Heat deflection temperature (0.45 MPa)	200°C

## Physical Properties

Density	1.14 g/cm <sup>3</sup>
---------	------------------------

## 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.