



# Polyamide PA-6 C

Cast Polyamide | Kestamid | PA6-C

⚠ Certain Types Are Food Compatible

Material Type

**PA 6 (Copolymer)**

Form: Flat / Plate / Rod / Pipe

Combustion Class: **HB (UL 94)**

## MATERIAL DESCRIPTION

Polyamide PA-6 C (Kestamid, Cast Polyamide) is an engineering plastic produced in large diameters and with high smoothness by centrifugal casting method. It is a strong structural alternative that can replace metallic materials with its high yield stress (70-85 MPa), high modulus of elasticity (3000-3300 MPa) and high melting temperature (220 °C). Its ability to operate without requiring lubrication is preferred in gear, pulley and bearing applications.

## MECHANICAL AND PHYSICAL PROPERTIES (ISO/ASTM)

Feature	Unit	Value	Feature	Unit	Value
Intensity	g/cm <sup>3</sup>	1.14 - 1.15	Shore D Hardness	—	<b>80 - 83</b>
Yield Stress	MPa	70 - 85	Friction Coefficient	—	<b>0.35 - 0.40</b>
Yield Elongation	%	5 - 10	Melting Temperature	°C	<b>~ 220</b>
Breaking Stress	MPa	50 - 60	Softening Temperature	°C	<b>180 - 190</b>
Elongation at Break	%	50	Work. Gene. Coefficient	10 <sup>-4</sup> K <sup>-1</sup>	<b>0.9</b>
Elasticity Modulus	MPa	3000 - 3300	Dielek. Strength	kV/mm	<b>~ 25</b>
Impact Resistance	kJ/m <sup>2</sup>	Unbreakable	Surface Resistance	Ohm	<b>10<sup>12</sup></b>
Water Absorption (24h/Sat.)	%	2.5 - 3.0 / 8 - 9	Service Temperature	°C	<b>-40 / +100</b>

## AREAS OF APPLICATION

Large Diameter Gear Systems

Crane and Pulley Wheels

Bearing Shell and Bushings

Guide and Guide Rails

Structural Mechanical Parts

Heavy Machinery Components

## CHEMICAL RESISTANCE AND GENERAL PROPERTIES

It shows excellent resistance to oils, greases and hydrocarbon derivatives; It can operate in dry or slightly oily conditions without requiring lubrication. While it offers good resistance to bases and salt solutions, it is weak to strong acids and oxidizing agents. Its most critical feature is high water absorption (2.5-3% normal, 8-9% at saturation); This affects dimensional stability and requires attention to tolerances in humid environments. Due to limited weldability, mechanical joining is preferred in large constructions. It is preferred as a light and corrosion-resistant alternative to bronze and steel in high-load bearing parts of machinery manufacturing, heavy construction machinery, ship industry and automotive industry.

The technical information specified in this document reflects the reference values of international ISO/ASTM standards. Water absorption can significantly affect dimensional stability; Preconditioning is recommended in applications with critical tolerances.