



Product Overview

The 3D Printer Filament Set consists of high-performance engineering thermoplastics designed for functional prototyping, industrial manufacturing, mechanical components, research, and educational applications. The package includes **ASA, PETG, and Polycarbonate (PC)** filaments, offering excellent mechanical strength, durability, heat resistance, and dimensional stability for a wide range of additive manufacturing requirements.

Package Contents

ASA (Acrylonitrile Styrene Acrylate)

- Quantity: **15 kg**

PETG (Polyethylene Terephthalate Glycol-modified)

- Quantity: **10 kg**

Polycarbonate (PC)

- Quantity: **5 kg**

Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.



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Technical Specifications

1. ASA (Acrylonitrile Styrene Acrylate)

Mechanical & Physical Properties

- Tensile Strength: **40–50 MPa**
- Flexural Modulus: **Approx. 2,200 MPa**
- Heat Deflection Temperature (HDT): **88–96°C**
- UV Resistance: **Excellent**
- Superior weather resistance compared to ABS
- Suitable for long-term outdoor applications

Key Features

- High mechanical strength
- Excellent UV and weather resistance
- Good dimensional stability
- High impact resistance
- Durable outdoor performance
- Easy post-processing

Applications

- Outdoor components
- Automotive parts
- Functional prototypes
- Industrial enclosures
- Engineering models
- Weather-resistant products

2. PETG (Polyethylene Terephthalate Glycol-modified)

Mechanical & Physical Properties

- Tensile Strength: **40–60 MPa**
- Tensile Modulus: **1,500–2,400 MPa**
- Impact Resistance (Charpy Notched): **>20 kJ/m²**
- Density: **Approx. 1.27 g/cm³**

Key Features

- High impact resistance

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- Excellent layer adhesion
- Good flexibility
- Low warping
- Chemical resistance
- Easy to print
- Excellent surface finish

Applications

- Functional mechanical parts
- Food-safe containers (material dependent)
- Industrial fixtures
- Protective covers
- Engineering prototypes
- Educational projects

3. Polycarbonate (PC)

Mechanical & Physical Properties

- Tensile Strength: **55–72 MPa**
- Heat Deflection Temperature (HDT): **130–140°C (at 0.45 MPa)**
- Glass Transition Temperature (T_g): **Approx. 150°C**
- Transparency: **Naturally Transparent**

Key Features

- Extremely high mechanical strength
- Outstanding heat resistance
- High impact toughness
- Excellent dimensional stability
- Optical transparency
- Suitable for demanding engineering applications

Applications

- High-temperature components
- Mechanical fixtures
- Industrial tooling
- Machine guards
- Transparent engineering parts

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- Functional end-use products

Filament Summary

Material	Quantity	Tensile Strength	Heat Resistance	Special Feature
ASA	15 kg	40–50 MPa	88–96°C HDT	Excellent UV & Weather Resistance
PETG	10 kg	40–60 MPa	Good	High Impact Strength & Easy Printing
Polycarbonate (PC)	5 kg	55–72 MPa	130–140°C HDT	High Strength & High Temperature Resistance

Key Advantages

- Engineering-grade thermoplastic materials
- High mechanical strength
- Excellent dimensional stability
- Industrial-quality print performance
- Suitable for functional prototypes
- Durable and long-lasting printed parts
- Excellent impact resistance
- High thermal performance
- Compatible with professional FDM/FFF 3D printers
- Ideal for research, industrial, educational, and product development applications

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