

ABS

P r o d u c t D e m o n s t r a t i o n



■ Material Overview

ABS+ is a modified version of standard ABS (Acrylonitrile Butadiene Styrene) created by blending additives with the base material. This enhancement improves the material's performance, making it highly suitable for 3D printing applications. The modifications provide a better balance between rigidity and toughness, making ABS+ a preferred choice for parts that require high durability and heat resistance.

Advantages

- **High Rigidity and Toughness:**
ABS+ combines the strength of ABS with enhanced toughness, making it ideal for applications requiring durability.
- **Excellent Heat Resistance:**
The modified material offers superior thermal stability, enabling it to withstand higher temperatures.
- **Shorter Processing Cycle:**
ABS+ benefits from a faster processing time, improving production efficiency.
- **Superior Hydrolysis Resistance and Product Stability:**
It is highly resistant to water absorption and maintains stability during long-term use.
- **Good Processability:**
The material can be easily processed, allowing for smoother production and easier post-processing.

Applications

 Prototyping
  Electronics
  Automotive
  Consumer Goods
  Industrial Parts
  Functional Prototypes
  End-Use Products

Properties

Property	Unit	Test Standard	Typical Value
Density	g/cm ³	ASTM D-792	1.01-1.04
Melt Index (220°C, 2160g)	g/10min	ASTM D-1238	6-12
Melting Point	°C	DSC	190-220
Vicat Softening Point A/120	°C	ASTM D-648	65
Tensile Strength	MPa	ASTM D-638	43
Elongation	%	ASTM D-638	15
Flexural Modulus	MPa	ASTM D-790	2320
Water Absorption	%	ASTM D-570	<0.8

* The above data are typical values and should not be interpreted as quality determination technical indicators.

Storage

During transportation and storage, the temperature should not exceed 65°C. This product should be stored in a dry, well-ventilated warehouse, and precautions should be taken against moisture.

■ Drying Procedure

It is recommended to test the moisture content of the resin before processing. If the moisture content exceeds 0.3%, pre-drying is required. Typical drying conditions: 3-4 hours at 60°C.

Before processing, it is recommended to keep the material dry for easier processing. Keep the material sealed before use and ensure the container is tightly closed after use.

■ Production Equipment

ABS+ modified raw material can generally be processed on standard equipment. The proper processing temperature is key to achieving good product quality.

■ Cleaning Procedure

ABS+ modified raw material is not compatible with certain petroleum-based materials. If traditional petroleum-based resins were previously used on the machine, cleaning is required before processing. To ensure cleanliness, follow the recommended machine cleaning procedures.

1. Preheat the extruder to the processing temperature used for the previously produced resin;
2. Use low-viscosity, low-melting-point LDPE clean the machine, and lower machine temperature to 150-180°C during cleaning process;
3. Clean the feeding system to prevent contamination;
4. Add ABS raw material to the extruder, use the raw material to completely remove the residual material, and then reduce the barrel temperature to the recommended temperature in the processing parameters below;
5. Once the equipment reaches the required temperature, production can begin.

■ Processing Parameters

ABS+ modified raw material is temperature-sensitive. At startup, keep the extruder temperature as low as possible. If the temperature is too low, the temperature can be adjusted by increasing it by 5 °C each time.

■ Reference Extrusion Temperatures for Cast Sheet

Zone	Temperature (°F)	Temperature (°C)
Feeding Zone	320-329°F	180-200°C
Compression Zone	329-338°F	190-200°C
Metering Zone	329-338°F	200-210°C
Die Zone	329-347°F	200-210°C