



Technical Data Sheet

Filalab ABS

Product Information

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|---------------|---------------------------------|
| Product Name | Filalab ABS |
| Chemical Name | Acrylonitrile Butadiene Styrene |
| Diameter | 1.75 ± 0.05 mm |
| Manufacturer | Filalab, Vilnius, Lithuania |

General Description:

Filalab ABS Filament is a strong, durable, and versatile 3D printing material well-suited for functional parts, prototypes, and end-use products. ABS is known for its excellent mechanical properties, including impact resistance, toughness, and high-temperature resistance. It is widely used in industries such as automotive, consumer products, and engineering. ABS is suitable for parts requiring strength and durability, though it may require a heated bed and enclosure to minimize warping during printing.



Product Properties

| Property | Test Method | Result |
|-----------------------------------|-------------|------------------------|
| Density | ASTM D792 | 1.04 g/cm ³ |
| Vicat Softening Temperature | ASTM D1525 | 96°C |
| Melt Mass-Flow Rate | ASTM D1238 | 40g/10 min |
| Molding Shrinkage - Flow | ASTM D955 | 0.40-0.70% |
| Tensile Strength | ASTM D638 | 45 MPa |
| Tensile Elongation | ASTM D638 | > 10% |
| Flexural Strength | ASTM D790 | 74 MPa |
| Flexural Modulus | ASTM D790 | 2400 MPa |
| Notched Izod Impact | ASTM D256 | 250 J/m |
| Rockwell Hardness | ASTM D785 | 107 HRR |
| Deflection Temperature Under Load | ASTM D648 | 85°C |



Recommended Printing Settings

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|------------------------------------|---|
| Nozzle Temperature | 240-280°C (270°C for Bambu Lab printers) |
| Bed Temperature | 90-100°C |
| Fan Speed | 10-20% |
| Printing Speed | 40-250 mm/s |
| Bed Type | Textured PEI Sheet, Smooth PEI Sheet |
| Optional Adhesives for Build Plate | Bambu Lab Glue Stick, Magigoo |
| Filament Drying Recommendations | Temperature: 65°C, Drying Time: 6-12 hours, |

Safety Information:

Filalab ABS Filament is generally safe for 3D printing but should be used in a well-ventilated area due to the release of fumes during printing, which can be irritating if inhaled. Use an enclosure or air filtration system if printing in a confined space. Always handle the filament and printed parts with care, and consult the Safety Data Sheet (SDS) for more detailed safety guidelines.



Storage, Handling, and Drying Process:

ABS filament is hygroscopic, so proper storage and occasional drying are essential to maintain print quality and material properties.

Storage:

- **Environment:** Store in a cool, dry place away from direct sunlight.
- **Sealing:** Keep the filament in an airtight container with desiccants to prevent moisture absorption.
- **Desiccant Use:** Use silica gel packets or other desiccants inside the storage container to maintain low humidity levels.

Drying Process:

- **Drying Temperature:** 70-80°C (158-176°F)
- **Drying Duration:** 4-6 hours
- **Drying Equipment:** Use a filament dryer, convection oven, or food dehydrator.

After drying, immediately store the filament in an airtight container to prevent moisture reabsorption.



Features:

- **Durable and Tough:** Excellent impact resistance and mechanical strength.
- **Heat Resistant:** Maintains performance in high-temperature environments.
- **Good Surface Finish:** Produces smooth and polished prints with post-processing capability.
- **Widely Used:** Popular for functional prototypes and end-use parts.

Pros and Cons:

Pros:

- **Durable:** Strong and impact-resistant for functional parts.
- **Heat Resistant:** Withstands higher temperatures without deforming.
- **Smooth Finish:** Capable of producing polished surfaces with post-processing.

Cons:

- **Higher Warping:** Requires a heated bed and enclosure to minimize warping.
- **Moisture-sensitive:** Needs proper storage and drying.
- **Fumes:** Emits strong fumes during printing, requiring good ventilation.