

Overview of filament types

The temperatures listed here are based on our printers and should be treated as a recommendation only. Please tweak them to your own needs as required.

3D printers need materials to create object from like „common“ printers. Depending on the printers technology you are able to use different types of materials.

[Thermoplastic](#), also known as a thermosoftening plastic, is a polymer that turns to a liquid when heated and freezes to a very glassy state when cooled sufficiently. Thermoplastic [polymers](#) differ from thermosetting polymers (Bakelite) in that they can be remelted and remoulded. Many thermoplastic materials are addition polymers; e.g., vinyl chain-growth polymers such as polyethylene and polypropylene.

Filament type	Melting point (C°) ¹	Extruder (C°) ²	Printbed (C°) ³	Surface ⁴	Stable (C°) ⁵
ABS	220°C	~ 230°C - 255°C	~ 110°C - 115°C	Carbon/PET/Kapton	~ 140°C
PLA - Polylactose	200°C	~ 180°C - 220°C	~ 55°C - 65°C	Carbon/PET/Kapton/Glas	~ 60°C
PS - Polystyrol	210°C	~ 190°C - 220°C	~ 80°C - 100°C	Carbon/PET/Kapton	-
PVA - Polyvinylalkohol⁶	210°C	~ 190°C - 220°C	~ 55°C - 115°C	Carbon/PET/Kapton	-
LAYWOOD - Holz	210°C	~ 180°C - 230°C	~ 0°C - 80°C	Carbon/PET/Kapton	-
LAYBRICK - Stein	160°C	~ 165°C - 210°C	~ 0°C - 80°C	Carbon/PET/Kapton	~ 60°C
PP	210°C	~ 210°C	kalt	PP	~ 150°C
Bendlay	200°C	~ 220°C	~ 60°C	PET	-
TPU93⁸	190°C	~ 190°C - 215°C	kalt	Glas	> 120°C
Carbon20⁹	235°C	~ 252°C	~ 45°C	PET	-
PC*	N/A	~ 250°C - 270°C	~ 80°C	N/A	> 120°C
PET-G	N/A	~240°C - 260°C	~ 60°C - 70°C	N/A	-
PA6	220°C	N/A	N/A	N/A	N/A
PA666	200°C	N/A	N/A	N/A	N/A

* Polycarbonate Remark: For an optimal printing, the Build Tak film is recommended as a printing substrate.

Download Material Safety Data Sheets

German versions:

[Materialsicherheits Datenblatt Übersicht](#)

English versions:

[Material Safety Data Sheet overview](#)

Download Technical Datasheets

German versions:

[Technisches Datenblatt ABS](#)

[Technisches Datenblatt ABS EL](#)

[Technisches Datenblatt Bendlay](#)

[Technisches Datenblatt Carbon](#)

[Technisches Datenblatt HIPS Natur](#)

[Technisches Datenblatt Laybrick](#)

[Technisches Datenblatt Laywood](#)

[Technisches Datenblatt PC](#)

[Technisches Datenblatt PETG](#)

[Technisches Datenblatt PLA](#)

[Technisches Datenblatt PP](#)

[Technisches Datenblatt TPU64D](#)

[Technisches Datenblatt TPU93 Transparent](#)

English versions:

[Technical Datasheet ABS](#)

[Technical Datasheet ABS EL](#)

[Technical Datasheet Bendlay](#)

[Technical Datasheet Carbon](#)

[Technical Datasheet HIPS Natural](#)

[Technical Datasheet Laybrick](#)

[Technical Datasheet Laywood](#)

[Technical Datasheet PC](#)

[Technical Datasheet PETG](#)

[Technical Datasheet PLA](#)

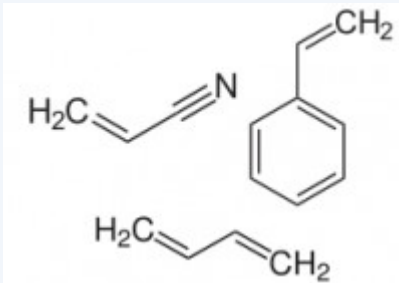
[Technical Datasheet PP](#)

[Technical Datasheet TPU64D](#)

[Technical Datasheet TPU93 clear](#)

Materialinfo

ABS (Acrylonitrile butadiene styrene-copolymer)



Acrylonitrile butadiene styrenecopolymer
(ABS)

Acrylonitrile butadiene styrene-copolymer (short ABS) is a synthetic terpolymer of three different kinds of monomers, acrylonitrile, 1.3 butadiene and styrene and belongs to the amorphous thermoplastics. The proportions can vary from 15 to 35% acrylonitrile, 5 to 30% butadiene and 40 to 60%.

Specification

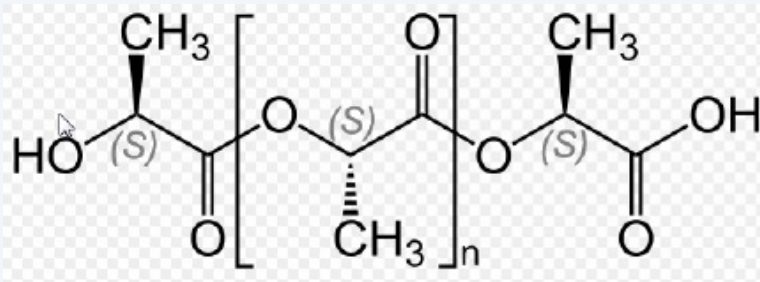
The following specification refers to the ABS distributed by us.

- **Density:** 1,05 g/cm³
- **Melt mass flow rate MFR:** 5-9 (220 °C/10 kg), g/10 min
- **Melt volume rate MVR:** 5-9 (220 °C/10 kg), cm³/10 min
- **Tensile strength:** 2400 MPa (23°C)
- **Impact strength:** 130 (bei 23°C), 100 (bei 30 °C) kJ/ m²
- **Notched bar impact test Izod:** 25 (bei 23°C), 12 (bei -30°C) kJ/m²
- **Vicat-softening temperature:** - 100 °C
- **Melting temperature:** from - 220 °C

Source

[Acrylonitrile butadiene styrene](#)

PLA (Polylactic acid)



PLA (Polylactic acid)

Polylactic acid or polylactide (short PLA) are plastics, malleable by heat supply (also called thermoplastics). They are made of many chemically bound lactic acid molecules, so they belong to the polymers. Polylactide plastics are biocompatible.

Specification

The following specification refers to the PLA distributed by us.

- **Density:** 1,24 g/cm³
- **Melt mass flow rate MFR:** n/a (220 °C/10 kg), g/10 min
- **Melt volume rate MVR:** n/a (220 °C/10 kg), cm³/10 min
- **Tensile strength:** n/a MPa (23°C)
- **Impact strength:** n/a kJ/ m²
- **Notched bar impact test Izod:** n/a kJ/m²
- **Vicat- softening temperature:** n/a* °C
- **Melting temperature:** from - 180 °C

Source

[Polylactic acid](#)

Register

- 1) manufacturer's information
- 2), 3), 5) our recommendation
- 4) cover of printbed
- 6) material is hygroscopic and therefore limited storable
- 7) material is hygroscopic and therefore limited storable, in case of bubbles during print it can be dried in an oven at about 80°C for ca. 3-4 hours
- 8) Material kann nur mit dem DD3 Extruder verarbeitet werden!
- 9) Sollte dauerhaft nur mit einer Edelstahldüse verarbeitet werden, da extrem abrasiv