

Which material for what?

You know what you need — we tell you which plastic fits best. No technical jargon.

In 3D printing there is no single "best" material — there is a right one for each purpose. **This page helps you choose.** If unsure: just describe what the part is for, and we'll recommend the right material.

QUICK CHOICE BY PURPOSE

Decoration & figurines **PLA** — cheap, many colours, great detail. For finest miniatures: **resin (SLA)**.

Technical part, load-bearing **PETG** for robust & tough. For high load or heat: **ABS** or reinforced material.

Outdoors / weather / sun **ASA** — UV- and weather-resistant. PLA quickly becomes brittle outdoors.

Flexible / rubber-like **TPU** — bendable, ideal for seals, protective covers, buffers.

Finest detail / miniatures **Resin (SLA)** — sharpest detail, smooth surface. For collectors & model-making.

Must last long in the sun **ASA** with optional UV clear coat. Resin and PLA yellow/age in light.

THE MATERIALS IN BRIEF

PLA

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The all-rounder from plant starch

IDEAL FOR DECOR &
MODELS

Strengths cheap, easy, many colours, fine detail, low odour

Weaknesses not heat-resistant (soft from ~55 °C), not for outdoors

Perfect for figurines, decor, prototypes, gifts, model-making

PETG

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The robust all-purpose choice

IDEAL FOR
FUNCTIONAL PARTS

Strengths tough, impact-resistant, chemical-resistant, slight gloss

Weaknesses not fully UV-stable long-term

Perfect for holders, housings, mechanical parts, spare parts

ABS

ABS / ASA

Technical, heat-resistant, ASA also outdoor

IDEAL TECHNICAL &
OUTDOOR

Strengths hard, heat-resistant, ASA UV/weatherproof

Weaknesses more demanding to print, ABS not for permanent sun

Perfect for technical parts, outdoor (ASA), car-interior mounts

TPU

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The flexible rubber plastic

IDEAL FOR FLEXIBLE

Strengths bendable, elastic, shock-absorbing, durable

Weaknesses not rigid/dimensionally stiff, slower to print

Perfect for seals, protective covers, buffers, flexible holders

UV

Resin (SLA)

Highest detail fidelity

IDEAL FOR FINE
DETAIL

Strengths sharpest detail, smooth surface, ideal for miniatures

Weaknesses more brittle, ages under UV light, higher price

Perfect for miniatures, collectibles, jewellery masters, fine prototypes

Good to know: 3D-printed parts are somewhat less load-bearing in one direction (between the layers). For load-bearing or mechanically stressed parts we select material *and* print orientation to suit — just tell us how the part will be loaded.

What doesn't work: No material is suitable for permanent food contact without a special coating, and 3D printing does not replace approved medical or safety components. More in our safety information.

WHERE DO THESE RECOMMENDATIONS COME FROM?

This guide is the plain-language summary of our technical references. For the full detail (material properties, process technology, sources) see our freely available technical publications:

→ [Engineering Reference FDM](#) · → [Engineering Reference SLA](#) · → [Scientific Monograph](#)

Unsure about the choice?

Describe your part and its purpose — we'll recommend the right material and process.

Ask about material

Start a print order

No cooperation with the weapons, military or defence industry

Schichtwerk · contract manufacturer · Vienna · product responsibility rests with the customer
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Recommendations to the best of our knowledge, no substitute for case-by-case technical advice