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PETG HF

A high-flow PETG built for speed: matte finish, 300 mm/s, the same everyday toughness — bought for production runs, and now being phased out by its maker.

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VERFÜGBARKEIT	Ab Lager – Versand in 1 Werktag
MINDESTBESTELLWERT	8,90 € · Versand 4,90 €, frei ab 59 € · Abholung in Berlin kostenlos
DATEIEN	STL, OBJ, 3MF, PLY, AMF, STEP, IGES, BREP bis 100 MB
SOFORTPREIS	Datei hochladen auf www.3ddruckberlin.org – Preis in Sekunden, ohne Konto
INHALT DIESES DATENBLATTS	9 Seiten: Eigenschaften, Alltag, Druckparameter, Kennwerte (TDS), Vergleich mit anderen Marken

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A high-flow PETG built for speed: matte finish, 300 mm/s, the same everyday toughness — bought for production runs, and now being phased out by its maker.

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PETG HF is PETG with a flow modifier that lets the melt move through the nozzle about half again as fast as an ordinary PETG at the same temperature. That is what puts its speed limit at 300 mm/s rather than 200, and it is why a print shop reaches for it when a deadline and a quantity collide. The finish is matte rather than glossy, the colours are muted, and the everyday character — toughness, heat tolerance around 65–70 °C, outdoor tolerance — is that of PETG. The datasheet shows the cost of the flow package: lower stiffness and strength than the current PETG Basic, and a few degrees less heat resistance. The manufacturer announced in June 2026 that this grade will not be restocked once sold out, having relaunched PETG Basic in its place; existing spools print exactly as before.

FEELS LIKE

Matte, dry, faintly soft

A powder-coated look rather than PETG's usual gloss

THE POINT

Speed

Up to 300 mm/s; the manufacturer's own preset runs at 258 mm/s

STRENGTH

Ordinary PETG, a little softer

34 MPa tensile, 1810 MPa modulus — below PETG Basic 2026

HEAT

Around 65–70 °C

Glass transition 66 °C; a few degrees below other PETGs

COLOUR RANGE

Shrinking

14 colours at launch; fewer as stock runs down

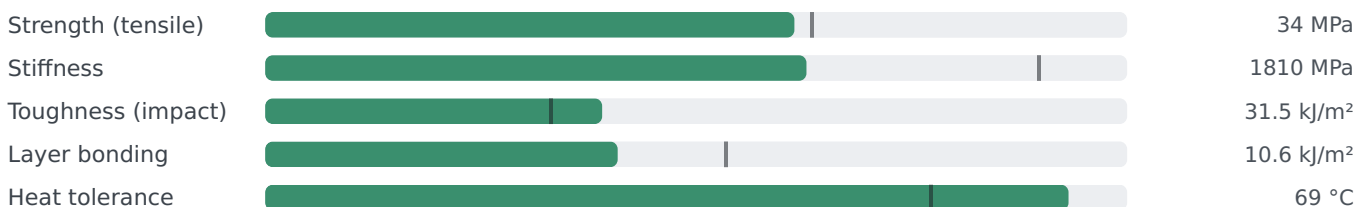
STATUS

Being discontinued

Not restocked after mid-2026; PETG Basic is the replacement

Where it sits in the range

Each bar shows this material against the strongest value found anywhere in this series of guides, PLA and PETG together (bar full = best in the series). The dark tick marks plain PLA Basic, the material most people know, so you can see at a glance where this one gives up or gains something. Values come from the manufacturer's own datasheets, measured on test bars printed flat (X-Y).



■ PETG HF ■ PLA Basic reference

Good for

- Small production runs of functional parts against a deadline
- Enclosures, brackets and fixtures where a matte finish is wanted without post-processing

Not the right choice for

- Long-term projects that will need colour-matched reorders — the range is winding down
- Parts that need the stiffness of the 2026 PETG Basic or the heat margin of PolyLite PETG

- Jigs, tool holders and workshop parts that get knocked about
- Outdoor and damp-environment parts kept below 65 °C
- Anything you would print in PETG, when the printer's time matters more than a few MPa

- Food contact; no certification
- Real heat above 65 °C
- Printers without a drying routine — the high-flow melt strings readily when wet

What "high flow" means, and what it costs

Melt flow index is the mass of molten plastic that passes through a standard die in ten minutes under a fixed weight. At 210 °C PETG HF measures 28 g/10 min against 19 for the old PETG Basic — about half again as runny — and that headroom is what lets the extruder keep up at high speeds without under-extruding or overheating. Additives that lower melt viscosity also tend to lower stiffness and heat resistance in the solid, and the datasheet confirms it: Young's modulus 1810 MPa against 2780 for the 2026 PETG Basic, bending strength 64 against 75 MPa, glass transition 66 against 69 °C. Toughness is similar. The manufacturer's claim of "twice as fast" is explicitly qualified as depending on model size and geometry; the practical experience is that small, detailed parts gain little and large, simple ones gain a lot. The matte finish comes from the same additive package, not from a separate filler.

2 · Living with a PETG HF print

Living with a PETG HF print is living with a PETG print: relaxed about knocks, damp and sunlight, careful about real heat and strong solvents.

Heat	Softens from about 66 °C. Parked cars and hot tap water are fine; hobs, ovens, dishwashers and hot lamps are not. A few degrees less margin than PETG Basic.
Sunlight	Outdoor tolerant; the matte surface hides slow fading well. The manufacturer's UV claim is not backed by published test data — expect years, not decades.
Water and damp	Insoluble and unaffected in use; planters, garden fittings and bathroom parts are fine.
Chemicals	Resists most oils and greases; not strong acids or alkalis; some solvents cloud it. Isopropyl alcohol is safe.
Food	No food-contact certification; the safety data sheet makes no food claim.
Children and pets	Not classified as hazardous; small parts are a choking hazard.
Load over time	Holds up well at room temperature; creeps under sustained load when warm, and is less stiff than PETG Basic to begin with.
End of life	General waste or 3D-print recycling.

Looks and feel

An even matte surface in muted colours, closer to PLA Matte in appearance than to glossy PETG. Layer lines are softened. The finish scuffs to a slight sheen where handled heavily.

Care

- Wipe with a damp cloth; hand-wash only
- Keep away from heat above 65 °C
- Sanding polishes the matte finish; avoid unless painting
- Primer and acrylic paint adhere well to the matte surface

- Superglue and epoxy bond normally

Reorders

Because the range is being run down, a colour bought today may not be available for a matching reorder next year. For a product that will be reprinted over time, choose PETG Basic or specify a colour that exists in both.

What PETG actually is

PETG is the plastic of the clear drinks bottle, adapted for printing. The base polymer is PET — polyethylene terephthalate — and the G stands for glycol, a second building block added to the chain so that the material no longer crystallises when it cools. That one change gives PETG its character: it stays clear or evenly tinted instead of going milky, it is noticeably tougher than PLA and yields before it breaks, and it has no true melting point, only a softening range. Its glass transition sits around 65–80 °C, some ten to twenty degrees above PLA, which is enough to survive a parked car, hot tap water and most sunny windowsills.

The same chemistry brings three habits every PETG user learns. It is hygroscopic: a spool left open for a day or two absorbs enough moisture to string and bubble, so drying is part of the routine rather than a fix. Its melt is sticky, which is why it strings between towers and why it bonds so well to a smooth print bed that it can pull chips out of the surface — glue on the plate acts as a release layer, not an adhesive. And it dislikes strong cooling: fan speeds that suit PLA weaken PETG's layer bonds. PET is one of the most recycled plastics in the world, but a printed PETG part is not accepted in household bottle recycling; it goes to general waste or a dedicated 3D-print recycling stream. Every PETG in this series is the same polymer with a different additive package, flow modifier, colourant or fibre, and each guide explains what that change does.

3 · How it is printed

PETG HF prints on standard hardware with PETG habits and one difference: it will actually use the speed a fast printer offers. Drying is essential — the manufacturer says so explicitly for prints over six hours.

Manufacturer print window

Nozzle temperature	230–260 °C (specimens printed at 255 °C)
Bed temperature	65–75 °C (manufacturer's product page: 60–80 °C)
Build plates	Smooth PEI, Textured PEI, Cool Plate SuperTack; the plain Cool Plate is not recommended
Bed adhesive	Glue stick or liquid glue recommended — a release layer on smooth PEI
Chamber	35–50 °C; door closed helps layer bonding
Print speed	Up to 300 mm/s (preset 258 mm/s)
Part cooling fan	0–60 %
Retraction	0.8–1.4 mm at 30–60 mm/s
Max overhang without support	About 70°
Max unsupported bridge	About 30 mm

Support material	Support for PETG; PETG HF is the one PETG cleared for PLA/PETG mutual support on the H2D
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Hardware and compatibility

Nozzle sizes	0.2, 0.4, 0.6 and 0.8 mm
Nozzle material	Any; hardened steel not required
Abrasive	No
Automatic material systems	AMS compatible with RFID profiles; the manufacturer advises against leaving PETG in the unsealed AMS lite long-term
Spool identification	RFID tag
Format	Spool and spool-free refill

Moisture, drying and storage

The high-flow melt is less forgiving of moisture than a standard PETG: wet PETG HF strings and blobs quickly. The manufacturer states it must be dried before use, especially for prints longer than six hours.

Forced-air oven or filament dryer	65 °C for 8 hours
Heated print bed method	75–85 °C for 12 hours, covered
AMS 2 Pro / AMS HT	Not stated on the V1.0 sheet; 65 °C for 8 hours is the figure the manufacturer gives for PETG Basic
Storage	Sealed with desiccant, below 20 % relative humidity
Annealing	Not recommended; if attempted, 75–80 °C for 4–8 hours

Tips that make a visible difference

- Use the speed for large, simple geometry; on small detailed parts set outer walls to 100–150 mm/s and let infill run fast
- Community experience puts the practical volumetric ceiling around 16 mm³/s — a 0.6 mm nozzle makes better use of the flow than 0.4
- Glue on smooth PEI every time; the matte surface hides glue residue better than glossy PETG shows it
- Fan at 30–40 % as a default; PETG HF bonds poorly when blasted
- Dry before any print over six hours, and keep desiccant in the AMS

Known problems and their fixes

Stringing and blobs after a few hours

Moisture. Dry at 65 °C for 8 hours; the manufacturer specifically flags long prints.

Weak layers at high speed

Cooling or chamber temperature. Fan below 40 %, door closed, and slow the outer walls; almost all PETGs lose layer strength at 300 mm/s.

Damaged smooth PEI plate

Over-adhesion without glue. Glue every time, bed 60–65 °C, cool before removal.

White residue or ghosting on textured PEI

Reported by users for both PETG grades. Glue stick or hairspray as a release layer; wash the plate.

Colour no longer available

The grade is being discontinued. Switch the design to PETG Basic for continuity.

4 · The numbers — technical datasheet

Figures are from the PETG HF Technical Data Sheet V1.0 (specimens printed at 255 °C / 70 °C bed / 200 mm/s, 100 % infill). Melt flow was measured at 210 °C, the same condition as the PLA sheets and the retired PETG Basic V2.0.

Physical and thermal properties

Property	Test method	Value
Density	ISO 1183	1.28 g/cm ³
Melt flow index (210 °C, 2.16 kg)	ISO 1133	28.2 ± 2.7 g/10 min
Melting temperature	DSC, 10 °C/min	214 °C (reported; PETG is essentially amorphous)
Glass transition temperature	DSC, 10 °C/min	66 °C
Vicat softening temperature	ISO 306	70 °C
Heat deflection temperature, 0.45 MPa	ISO 75	69 °C
Heat deflection temperature, 1.8 MPa	ISO 75	62 °C
Saturated water absorption (25 °C, 55 % RH)	—	0.40 %

Mechanical properties

Property	Test method	X-Y (flat)	Z (across layers)
Young's modulus	ISO 527	1810 ± 190 MPa	1540 ± 130 MPa
Tensile strength	ISO 527	34 ± 4 MPa	23 ± 4 MPa
Elongation at break	ISO 527	8.6 ± 1.2 %	5.1 ± 0.8 %
Bending modulus	ISO 178	2050 ± 120 MPa	1810 ± 140 MPa
Bending strength	ISO 178	64 ± 3 MPa	48 ± 4 MPa
Charpy impact, unnotched	ISO 179	31.5 ± 2.2 kJ/m ²	10.6 ± 1.2 kJ/m ²
Charpy impact, notched	ISO 179	6.2 ± 1.8 kJ/m ²	not published

What the mechanical numbers mean in practice

PETG HF is a middleweight: 34 MPa tensile and 1810 MPa modulus are close to PLA Basic's, not to the 2026 PETG Basic's 51 MPa and 2780 MPa. Its advantage over PLA is not raw strength but behaviour — elongation and impact figures similar to PLA Basic on paper, yet a ductile, whitening failure rather than a clean snap, and a heat deflection temperature twelve degrees higher. Z-direction tensile strength is 68 % of flat, which is typical PETG and better than most filled PLAs. The notched impact of 6.2 kJ/m² is the number to respect: sharp inside corners are where PETG HF parts crack, so radius them.

Product format

Diameter	1.75 mm ± 0.03 mm
Net weight	1 kg

Spool	ABS, 200 × 67 mm, rated to 70 °C; spool-free refill also offered
Colours	14 at launch (US); 8 in the EU store at the time of writing, decreasing
Identification	RFID tag
Datasheet version	V1.0; safety data sheet dated July 2025

Safety, certifications and chemical resistance

- Safety data sheet (July 2025): PETG 85–99 %, additives 1–15 %; not classified as hazardous under EU CLP; not hazardous waste
- Odourless, no skin hazard listed; flammable; combustion products water and carbon oxides
- RoHS and REACH compliance stated across the filament line
- No food-contact certification; no emissions data published
- Resistant to most oils and greases; not to strong acids, alkalis or some organic solvents
- Marketing claims of water and UV resistance are not supported by published test data

5 · Compared with Polymaker and SUNLU

High-speed PETG is where the market moved in 2025–26. Polymaker's answer is its new Polymaker PETG; SUNLU's is a high-speed matte grade. Neither is discontinued.

Polymaker

Polymaker PETG (new, high-speed) · PolyLite PETG (legacy)

The new Polymaker PETG is the most direct rival: rated to 300 mm/s stock and beyond with a high-flow hotend, 22 mm³/s volumetric flow, and — on the datasheet — stronger and stiffer than PETG HF with remarkable layer retention (Z tensile 95 % of flat). It is glossy rather than matte, ships on a cardboard spool with reinforced edges for material systems, and comes in 25-plus colours including clear. Drying and fan figures conflict between Polymaker's own documents (55 or 60 °C; fan off or 20–60 %).

Tensile X-Y / Z	48.0 / 45.7 MPa
Young's modulus X-Y	2311 MPa
Bending strength X-Y	80 MPa
Charpy unnotched / notched X-Y	20.2 / 4.95 kJ/m ²
Tg / HDT 0.45 MPa	71 / 69 °C
Max speed / flow	300 mm/s / 22 mm ³ /s
Nozzle / bed	240–260 °C / 60–70 °C
Spool	cardboard, 1 kg

SUNLU

SUNLU High Speed Matte PETG

Also matte, also marketed on speed — up to 400 mm/s on the product page, 600 in advertising — but its published melt flow index (4.4 g/10 min) is lower than SUNLU's own standard PETG, so the speed claim is not supported by the datasheet. Strength figures are respectable (46 MPa tensile, 75 MPa bending, HDT 70 °C) with a low notched Izod of 3 kJ/m² and no Z data. Cheapest of the three by a wide margin.

Density	1.28 g/cm ³
Tensile	46 ± 5 MPa
Flexural strength	75 ± 6 MPa
Izod notched	3 ± 1.5 kJ/m ²
HDT	70 ± 2 °C
Nozzle / bed	240–260 °C / 70–80 °C
Max speed (claimed)	≤ 400 mm/s
Diameter	1.75 ± 0.02 mm

Reading cross-brand numbers fairly

Manufacturer datasheets are produced by different labs on different printers, and two numbers are comparable only when the test standard, specimen orientation and impact method match. Charpy and Izod impact results are not interchangeable; notched and unnotched results differ by a factor of three or more; and Polymaker publishes Z-direction data where SUNLU publishes none. Treat cross-brand figures as an indication of class, not a ranking. Where a brand's marketing claim is not backed by its own datasheet, this guide says so.

Bottom line. For a matte PETG on Bambu hardware with RFID presets, PETG HF does the job while stock lasts. For a high-speed PETG with a future and better published numbers, the new Polymaker PETG is the stronger choice; SUNLU's matte grade is the budget option whose speed rating should be taken with caution.

How to read the datasheet

X-Y vs Z	A 3D print is a stack of layers. X-Y describes a test bar printed lying flat, where the load runs along the extruded lines. Z describes a bar printed standing up, where the load tries to pull the layers apart. Z values are always lower, and the ratio between them tells you how well the layers have fused. Real parts fail along layer lines far more often than through them.
Tensile strength (MPa)	The stress at which a bar pulled from both ends breaks. Megapascals are newtons per square millimetre: a 10 mm × 10 mm cross-section of a 35 MPa material holds roughly 3.5 kN, about 350 kg, before it snaps in a slow pull.
Young's modulus (MPa)	Stiffness — how much force it takes to stretch the material by a given amount. Higher means more rigid. It says nothing about strength: a stiff material can still be brittle.
Elongation at break (%)	How far the bar stretched before it broke, as a percentage of its original length. Low values (under 5 %) mean the material snaps with little warning; higher values mean it yields and bends first.
Bending (flexural) strength and modulus	The same two ideas measured by pressing down on the middle of a bar supported at both ends — closer to how brackets, clips and shelves are actually loaded.
Charpy impact (kJ/m²)	A pendulum hammer strikes the bar; the energy it absorbs before breaking is divided by the fracture area. This is the best single indicator of toughness — resistance to drops and knocks. Unnotched bars measure the bulk material; notched bars have a small cut that concentrates stress and give much lower numbers. Never compare a notched figure with an unnotched one, or a Charpy figure with an Izod one (a different test geometry).
Glass transition, T_g (°C)	The temperature at which the polymer's chains gain enough mobility for it to change from glassy and rigid to leathery and soft. Above T _g a loaded part will slowly creep and deform. For PLA and PETG this is the single most important thermal number.
Heat deflection temperature, HDT (°C)	The temperature at which a bar under a fixed bending load sags by a set amount. Quoted at 0.45 MPa (light load) and 1.8 MPa (heavy load); the light-load figure is always the higher of the two. Practical rule: keep loaded parts well below the 0.45 MPa figure.
Vicat softening point (°C)	The temperature at which a needle under load penetrates 1 mm into the material. Another measure of when the surface stops being hard.

Melting temperature, T_m (°C)	Where the crystalline regions melt, measured by DSC (a calorimeter). Printing happens well above T _m so the polymer flows freely.
Melt flow index, MFI (g/10 min)	How much molten material flows through a standard die in ten minutes under a fixed weight (210 °C for PLA; PETG sheets use 210–250 °C, so compare only at equal temperature). Higher means runnier and easier to push at speed; lower means more viscous, which is why some variants have lower speed limits.
Water absorption (%)	How much moisture the filament takes up from air at 55 % relative humidity. Absorbed water boils in the nozzle, causing pops, bubbles, stringing and rough surfaces — hence the drying recommendations.
Density (g/cm³)	Mass per volume. A 1 kg spool of a 1.31 g/cm ³ material contains about 5 % less printable length than a 1 kg spool at 1.24 g/cm ³ — heavier fillers cost you metres.
Annealing	Baking a finished print at a temperature just above T _g to let it crystallise further. It can raise heat resistance and stiffness but usually shrinks and sometimes warps the part.

Data notes and sources

Where sources disagree

- Discontinuation: the US store notice of 2 June 2026 states PETG HF will not be restocked once sold out; PETG Basic was relaunched in March 2026 as the mainstream grade.
- Fan: datasheet 0–60 %; the manufacturer's product page 0–80 %. The datasheet is used.
- Bed: datasheet 65–75 °C; product page 60–80 °C.
- AMS 2 Pro / AMS HT drying figures are absent from the V1.0 sheet; the PETG Basic V3.0 figure (65 °C, 8 h) is quoted as the manufacturer's PETG guidance.
- The manufacturer's "twice as fast" claim is qualified on its own page as highly dependent on model size and geometry; the datasheets show only a 50 % higher melt flow than the retired PETG Basic.

Sources

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