



2.85 mm filament
for the UltiMaker
print core BB

UltiMaker is committed to providing you
with the best possible experience when
printing with PVA.

Dry PVA is key to success

The most critical factor in printing UltiMaker PVA is having a dry filament. Out of the box the filament is ready to print with moisture level low enough (<1%) for reliable, high quality prints. Above 2% moisture content, a negative effect is visible, and above 4% moisture content PVA becomes basically unprintable.

Wet PVA may show the following symptoms:

- Soft and sticky feel
- Blobs and oozing during printing
- Crackling during printing and prone to clogging

When exposed to ambient air, PVA can rapidly absorb moisture. In our tests at room temperature, 20 °C and 55% relative humidity (RH), PVA moisture levels increased from 1% to 3% in 4 weeks.

- <1% H₂O Best print quality
- 2% H₂O Negative effects expected
- >4% H₂O Do not use; significant negative impact

*Moisture levels were determined using Precisa moisture analyzer XM50.
Print quality was tested using "oozing test" – see
ultimaker.com/check-pva for more details.*

To keep the moisture level of PVA as low as possible, please observe the following:

- Don't let it sit on the back of the printer when the print has finished
- Store after use in a closed bag with desiccant
- In the UltiMaker Material Station PVA can be stored for up to 2 months without a reduction in print quality

Drying wet PVA

The best way to dry PVA is by using a dedicated drying apparatus (oven or dry box) with precise temperature control, such as a PrintDry. Dry at 50 °C for 16 hours or for several days if the filament is very wet.

An alternative way is by placing the spool on the heated bed at 55 °C for a minimum of 24 hours. Use the original cardboard box, without plastic bag and including multiple bags of desiccant for optimal result.

Make sure that the filament has cooled to room temperature before loading the material in the printer.

Warning: Do not use a household oven without precise temperature control. This may result in temperature fluctuations and overshoots which may lead to crystallization and brittleness of the PVA.



Storage recommendations

- Environmental temperature: 0-30 °C
- Maximum relative humidity: 50 %
- Store in a sealed bag with the included desiccant when not in use
- Keep out of direct sunlight
- Before printing, to prevent moisture from condensing on the filament, bring the filament to the ambient temperature of the printing room while keeping the (re)sealed bag closed

Dissolving PVA steps

The most effective and fastest way to dissolve PVA is using the UltiMaker PVA Removal Station. Alternatively, use the following steps to dissolve your PVA.

- Submerge the print in lukewarm water (20-30 °C) for 5-10 minutes
- Remove most of the PVA support manually or use pliers
- Place the print back in the water to dissolve the remaining PVA
- Rinse the print in fresh running water
- Let the print dry completely
- Dispose of the water

UltiMaker PVA Removal Station



Simple post-processing.
Faster parts.

Learn more at ultimaker.com

Troubleshooting

Follow these steps to prevent under-extrusion and to keep both the filament and print core BB in optimal condition.

Brittle PVA

If you experience brittle PVA that easily breaks when bending the filament, this could be a result of degradation of the material – especially when it was exposed to fluctuating temperatures and humidity.

We recommend a maximum shelf life of one year for UltiMaker PVA and follow our storage and drying guidelines and/or consult our troubleshooting guidelines at support.ultimaker.com.

Cleaning and unclogging the print core BB

Using the UltiMaker cleaning filament is the most effective way to clean and unclog the print core BB. If you don't have the UltiMaker cleaning filament at your disposal, you can use PLA.

Navigate to the Maintenance menu on your printer and start the print core cleaning program. The display on your UltiMaker will guide you through each step of the process. Repeat this cleaning process regularly to ensure optimal print quality and reliability.

UltiMaker Cura

Always use the latest version of UltiMaker Cura for the most recent print settings. UltiMaker continuously improves print settings for all its materials. And recent Cura versions have seen great improvements in PVA printing reliability and print quality.

Download UltiMaker Cura via ultimaker.com/cura