

3D Printing Guidelines

Eastman Amphora™ AM3300

PETG

GRADE CODING

Eastman Amphora™ AM3300 is a transparent polymer, low-odor and styrene-free material which enables printing within a wide range of processing temperatures.

SAFETY

For the safety properties of the material, please refer to our SDS which can be downloaded from our website (www.nexeo3D.com) in the “Documents” tab for each material. During practical operation wear personal safety protections for hand/eye/body. Prior start printing you should read the entire document.

STARTUP/SHUT DOWN

Production has to start with a clean machine. Start the machine, feed it with dried material and extrude at least 50 mm of new filament through the nozzle. Be sure to calibrate the build plate. We recommend to use a feeler gauge of 0.15mm to do the leveling. Prior to applying an adhesive promotor, any surface must be free from dirt and grease. Therefore cleaning with ethanol or acetone is recommended. Remove the filament from the machine before shutting down the printer, and store the unused filament properly. Clean the build plate after printing.

Production Breaks: If there are production interruptions exceeding a few minutes, purge the nozzle adequately. Production Breaks: If there are production interruptions exceeding a few minutes, purge the nozzle adequately.

GENERIC MACHINERY SETTINGS

The following settings are a generic guide. Geometrical requirements of the application or the printer used could make adjustments necessary to obtain the best result. Common fused filament fabrication (FFF) equipment should work with Eastman Amphora™ AM3300 filaments, direct drive as well as Bowden type extruders. Typical settings for any slicing software (e.g. Cura, Simplify3D) are listed below. These generic settings are established for a 0.4mm Nozzle Diameter and a Glass Build Plate surface.

Note: Different nozzle diameters and/or a different build plate surface, the settings should be changed accordingly.

Print Speed: 50 mm/s

Layer Height: Layers: 0.2 mm

Brim/Skirt: 15 outlines with 1 layer

Extrusion temperatures: Eastman Amphora™ AM3300 can be used with a range of nozzle temperature (230–250 °C / 446–482°F). Preferred temperature to obtain optimal mechanical properties will be achieved at 240°C/ 464°F.

Build plate Temperature: 85°C / 185°F.

Note: prior to removing the printed part from the bed, the bed temperature should be lowered to ambient to avoid severe deformation of the part.

Build plate adhesion: For the best adhesion with Eastman Amphora™ AM3300 it is essential to use PrintaFix as an adhesive promotor. Adding a (large) skirt/brim to the print will help in establishing build plate adhesion during the print as well.

Cooling Fan: Off

TROUBLESHOOTING

Most common defects:

- **Warping:** Corners of the print lift and detach from the platform. Advice is to increase the Skirt/Brim and/or print the part in another direction. Wait long enough to allow the heat to dissipate to the top of the surface of the substrate.
- **First layer not sticking / parts coming loose:** the first layer of your print does not seem to want to stick or your parts come loose partway through the print. Remedies: check bed levelling and first layer thickness, increase size of brim, add appropriate adhesion promotor (Printafix) to the build plate.
- **Filament grinding:** The feeder wheels have ground a groove into the filament. Remove the damaged filament and start again, reduce printing speed, reduce retraction speed and length. Increase the extruder temperature.
- **Stringing:** Unwanted strands of plastic span across the print. Enable retraction, or increase the retraction length and/or speed. Be sure that the material is completely dried.

MATERIAL HANDLING

Storage: In order to prevent moisture pick up and contamination, supplied packaging should be kept closed and undamaged. For the same reason, partially used bags should be sealed before re-storage.

Allow the material that has been stored elsewhere to adapt to the temperature in the processing room while keeping the bag closed.

Packaging: Eastman Amphora™ AM3300 is supplied in plastic airtight, moisture-proof packaging.

Moisture content as delivered: Eastman Amphora™ AM3300 is packaged at a moisture level <0.05 w%.

Drying: In case the filament has become wet, it should be dried. Using a hot air oven at 80°C for at least 4h is recommended. When storing the filament after printing, it is advised to seal the bag and add silica gel to the bag to keep the filament as dry as possible.

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