

Ultracur3D[®] SLA 7700

User Guideline



INTRODUCTION

The following user guideline is for professionals who use: Ultracur3D[®] SLA 7700.

The safety data given in this publication is for information purposes only and does not constitute a legally binding Material Safety Data Sheet (MSDS). The relevant MSDS can be obtained upon request from your supplier, or you may contact BASF directly at sales@basf-3dps.com.

For more information, please refer to the country specific MSDS for advice.

STORAGE CONDITIONS AND DISPOSAL CONSIDERATIONS

Keep container tightly closed in a room temperature, well-ventilated place. Keep container dry. If material is not being used, fill it back through a filter in the corresponding material canister. The filter prevents cured pieces or failed prints from going back into the canister. Humidity of less than 40% and room temperature between 20-25°C is recommended while using this material in a vat. Ultracur3D[®] SLA 7700 must be disposed of in accordance with local regulations.

For more information, please refer to the country specific MSDS for advice.

INTENDED USE

Ultracur3D® SLA 7700 is a versatile material specifically designed for easy and reliable processing on large-vat Stereolithography (SLA) machines. Working wavelength: 355nm. The combination of exceptional clarity, with excellent accuracy and processing speed makes this material ideal for aesthetic and functional prototypes in a multitude of industries ranging from consumer goods to automotive and aerospace. For more information contact BASF directly at sales@basf-3dps.com.

PRINTING PROCESS

The material should be processed at room temperature. Before usage, the material should be shaken well. Pour it slowly into the vat and mix it properly using the platform movement. Wait for a few minutes, until a smooth, bubble-free surface is obtained before starting the print job.

The fully optimized print settings should always be determined by the users themselves, according to their specific needs. Below is the suggested range of basic printing parameters. Based on the size of laser beam, hatching parameters, print parameters will vary. Please always refer to the user manual of the employed 3D printer for instructions on printer settings and handling.

Ec	9 mJ/cm ²
Dp	5 mils / 0.127 mm
Power	150-300mW
Beam size	0.06-0.1mm
Hatching Speed	6000 – 10000mm/s
Contour Speed	3500-5500mm/s
Support Speed	800-1200mm/s

Once the build job is completed, remove the parts carefully from the build platform with a suitable tool, for more information, refer to the user manual of the used 3D printer.

CLEANING AND POST CURING PROCESS

Ultracur3D® SLA 7700 can be easily cleaned with 2-propanol and/or a Glycol Ether based solvent like Ultracur3D® Cleaner, please refer to the following cleaning procedures.

Option 1: Cleaning with 2-propanol

- Step 1: Remove the supports and place the parts in a container filled with 2-propanol. Place this container in an Ultrasonic bath filled with water for 3-5 minutes. The cleaning time can vary depending on the complexity of the printed geometry.
- Step 2: Fine structures or holes may be better cleaned by using 2-propanol and a syringe or by separate brushing. If parts are still sticky and excess material is still present repeat step 1.
- Step 3: Blow dry the parts with pressurized air or nitrogen, until the parts are clean.
- Step 4: Place the parts into a warming cabinet at 40°C for 30 minutes to dry off any remaining cleaning solvent.

Option 2: Cleaning with Ultracur3D® Cleaner and 2-propanol

- Step 1: Remove the supports and place the parts in a container filled with Ultracur3D® Cleaner and place this container in an Ultrasonic bath filled with water for 3-5 minutes. The cleaning time can vary depending on the complexity of the printed geometry.
- Step 2: Rinse the parts with 2-propanol for a few seconds. Fine structures or holes may be better cleaned by using 2-propanol and a syringe or by separate brushing. Next, place the parts in a container filled with 2-propanol and place this container in an Ultrasonic bath filled with water for 3-5 minutes.
- Step 3: Blow dry the parts with pressurized air or nitrogen, until the parts are clean.
- Step 4: Place the parts into a warming cabinet at 40°C for 30 minutes to dry off any remaining cleaning solvent.

POST CURING PROCEDURE

Ultracur3D® SLA 7700 parts require adequate post-curing to achieve the optimal mechanical properties. After each post-curing cycle, the parts need to be flipped to achieve an even curing.

UV Post curing boxes with wide range of wavelengths can be used to get optimal mechanical properties. Depending upon the power of the post curing box, time can vary from 20-40minutes. In the end, the user has to determine the optimum post-curing procedure based on their specific requirements and the equipment used.

Note:

- The combination of the 3D printer, printing parameters and post-processing used will have an impact on the final mechanical properties.
- Depending on the post-curing unit and post-curing time used, the color of the printed parts may vary.
- The viscosity of this material may gradually increase when it stays in the machine vat for a long time. Therefore, it is important to check the viscosity regularly and intervene if a sudden increase is observed as this will affect the processability of the material.

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