User Guideline
Ultracur3D® ST 45 B

The following User guideline is for professionals who use: **Ultracur3D® ST 45 B**.

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.

Manufacturer

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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 bottle. The filter prevents to fill cured pieces or failed prints back into the bottle. Ultracur3D® ST 45 B must be disposed of or incinerated in accordance with local regulations.

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

Delivery units

Ultracur3D® ST 45 B is available in the following packaging sizes: 1 kg, 5 kg, 10 kg and possible larger volume packaging are also available upon request.

Intended Use

Ultracur3D® ST 45 B is a technical material based on (meth-)acrylate resin for suggested LCD and DLP systems. Working wavelength: 355nm, 385 nm or 405 nm. Attached a list of suggest 3D printer and Printing parameters. For more information contact BASF directly at sales@basf-3dps.com.

The data contained in this publication are based on our current knowledge and experience. They do not constitute an agreed contractual quality of the product and, in view of the many factors that may affect processing and application of our products, do not relieve processors from carrying out their own investigations and tests. The agreed contractual quality of the product at the time of transfer of risk is based solely on the data in the specification data sheet. Any descriptions, drawings, photographs, data, proportions, weights, etc. given in this publication may change without prior information. The customer and/or user is responsible to consider and respect all hazard and safety issues according to the MSDS of Ultracur3D® ST 45 B and take, implement and/or install adequate measures and precautions to avoid any personal injuries, property damages and/or environmental pollution. Therefore, BASF3D Printing Solutions GmbH shall not be liable for any personal injury, property damages and/or environmental emissions arising out of or related to the testing, handling or usage, storage and possession of Ultracur3D® ST 45 B. It is the sole responsibility of the recipient of our product to ensure that any proprietary rights and existing laws and legislation are observed (02/2020)

Example of Suitable 3D-Printers and Settings

PRINTER	MIICRAFT ULTRA 125	ORIGIN ONE (ORIGIN)
Wavelength	385 nm	385 nm
Power	5.5 mW / cm²	5 mW / cm²
Curing time	2.25 s	4.5 s
Voxel depth	75 µm	100 µm

Printing Process

Preparation of Resin

The material should be processed at room temperature. Before usage the material should be shaken well. Pour it slowly in the vat and wait a couple minutes, until smooth, bubble-free surface is obtained before starting the print job.

Printing Process

As the suitable 3D printer examples and setting parameters stated above are only for general guidance purpose, user should always define the optimal settings according to his needs by himself. Please refer to Instruction of Use or User Guide of the employed 3D-Printer for the printer settings and handling.

Removing parts

Remove the parts carefully from the build platform with a suite able tool, for more information see the Instruction for Use of the used 3D-Printer.

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Cleaning and Post curing process

Cleaning Process

Ultracur3D® ST 45 B can be cleaned with a Glycol Ether based solvent like Ultracur3D® Cleaner & 2-propanol, please refer to the following cleaning procedure.

Cleaning with Ultracur3D® Cleaner & 2-propanol

Step 1: Place the parts in a container filled with Ultracur3D® Cleaner and *place this container* in an Ultrasonic bath filled with water for 3 minutes.

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 minutes.

Step 3: Blow dry the parts with pressure air/nitrogen, until the parts are clean.

Drying

Place the parts into a warming cabinet @40°C for 30 minutes.

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Post curing

Ultracur3D® ST 45 B parts require adequate post curing to achieve the optimized final mechanical properties. After each post-curing cycle, the part needs to be flipped to achieve an even curing.

Examples of post curing procedures

MiiCraft Ultra 125

Post-curing unit	**Dymax ECE 2000 flood**
Amount of cycles	2
Duration of one curing cycle	600 seconds

Origin One (Origin)

Post-curing unit	**Dymax ECE 2000 flood**
Amount of cycles	2
Duration of one curing cycle	900 seconds

Finishing Process

Remove, if necessary, support structures and smoothing the surface.

These proceedings are only general guidelines, the optimal printing settings as well as curing time must be defined by the user himself. The post-curing might differ by using different 3D-Printers and different post-curing units may require different settings.

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