

Instruction for Use

Ultracur3D® DM 2304

The following Instruction for use is for dental professionals who use: **Ultracur3D® DM 2304** as a non-medical gingiva mask material.

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 for more than 1 day 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® DM 2304 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® DM 2304 is available in the following packaging sizes: 1 kg.

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Intendent Use

These instructions are intended to produce non-medical flexible gingiva masks in connection with 3D printed dental models. Due to Ultracur3D® DM 2304 flexibility it can be used to print certain parts of the model that need to be soft and flexible like the gingiva masks for implant models. Ultracur3D® DM 2304 is a technical material based on (meth-)acrylate resin for suggested DLP systems. Working wavelength: 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.

Available Color

- Pink

Suitable 3D Printer and Settings

PRINTER	MIICRAFT ULTRA 125
Wavelength	385 nm
Power in mW / cm ²	4.5 mW/cm ²
Curing time	3 s
Voxel depth	75 µm

If you cannot find your printer in the table, you can use the values below as starting parameters. These are only approximations, different 3D-Printers may require different curing times and further optimization, but these values should be a good starting point.

The given values are all for printing at a layer thickness / voxel depth of 100 µm. If you need starting parameters for a different layer thickness, please contact us.

405 nm WAVELENGTH 3D-PRINTER

Power *	5 mW/cm ²	4 mW/cm ²	3 mW/cm ²	2 mW/cm ²
Suggested curing time	2 s	2.5 s	3.3 s	5 s

385 nm WAVELENGTH 3D-PRINTER

Power *	5 mW/cm ²	4 mW/cm ²	3 mW/cm ²	2 mW/cm ²
Suggested curing time	3.2 s	4 s	5.3 s	8 s

*Power measured directly on the glass

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Design Information:

For designing the non-medical gingiva masks, we recommend using only certified Software. For some gingiva masks, support structures might be needed.

Printing Process

Preparation of Resin

The material should be processed at room temperature. Before usage the material should be rolled on a e.g. bottle roller (roller bench) with suitable ceramic beads/balls for at least 30 minutes. Pour it slowly and carefully in the vat and wait a couple minutes, until the bubbles are gone before starting the print job. Make sure to not pour the ceramic beads/balls into the vat. Ultracur3D® DM 2304 should be well mixed before each print job, color deviation or failed print might occur when not mixed thoroughly.



Printing Process

Suitable 3D printer and setting are guidelines the optimal setting must be defined by the user himself. Please see Instruction for Use of the used 3D-Printer for the printer settings and handling.



Removing parts

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

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Cleaning and Post-curing process

Most flexible photopolymer materials are very sensitive to chemical changes in the green state. To obtain the highest consistency in final part performance, especially for lattices, we recommend to keep the post-processing procedure as constant as possible. This includes the washing and drying methods and time, but also the time kept between printing, washing, drying and UV post-curing steps. In addition, to achieve the mechanical properties listed in our TDS, it is best to stay as close as possible to the exact post-processing methods listed in this Instruction for use.

Cleaning Process

Ultracur3D® DM 2304 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 4 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 4 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® DM 2304 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.

Example of post curing procedure

MiiCraft Ultra 125

Post-curing unit	Dymax ECE 2000 flood	Otoflash G171
Amount of cycles	2	2
Duration of one curing cycle	300 seconds	2000 flashes

Finishing Process

Supports can be removed with a conventional dental handpiece and a dental grinding tool for plastics, if needed.

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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