ALPHASENSE DLP/SLA DENTAL MODEL RESIN USER INSTRUCTIONS

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NOTE!

The plaster filler materials may sink and stick to the bottom of the bottle. The user should use a long stirrer bar/stick to reach to the bottom of the bottle to fully agitate the filler materials before pouring it to the resin container. It is highly recommended to use an electric mixer/blender to ensure even mixing of the fillers in the resin before pouring it to the resin tank of the printer.

INTRODUCTION

ALPHASENSE DLP/SLA/LCD dental model resin is a broad- band photocurable polymer system that contains monomers, photoinitiators, dental plaster fillers and other additives. Upon light exposure, the photoinitiators generate radicals which promotes the polymerization reactions. The resin product can be cured with typical light sources found in common resin- based 3D printers (e.g. light bulbs and UV LEDs in DLP, and SLA/LCD printers, respectively). The resin is photocurable with UV wavelengths up to 420 nm. It is compatible with printing resolutions from 25 to 200 microns.

USAGE

- **3D PRINTING**

The most important parameter to fabricate a 3D model is the exposure time, which is mainly dependent on the following three factors: light intensity, the layer thickness and the cross-section area of the model (if a DLP source/printer is used). A relatively shorter exposure time can be used for a larger model, while longer exposure time is needed for smaller models, The following parameters are recommended to obtain a layer resolution of 100 microns with a DLP light flux of ~1500 lumens.

20 seconds for the first 10 layers and 15 seconds for subsequent layers;

A settling time of 2 to 5 seconds is recommended for each layer to allow uniform coverage of the fresh resin on previously printed layers. The user needs to fine tune these parameters

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which are specific to his/her own 3D printer. Also, if a different resolution/layer thickness is desired, the user needs to vary the light exposure time accordingly.

The following printing parameters are recommended for commonly used resin- based 3D printers:

1) **Anycubic Photon**

- Normal Exposure: 36, Off time: 2, Bottom Exposure Time: 80, Bottom Layers: 10

2) **B9 Creator**

- Base Exposure: 5, Attach Base: 40, Pre-exposure delay: 3