

optiprint[®] zero

Germany's favorite 3D Resin



Colour: *red*

Processing guide

1. Product description and indication

Optiprint zero is a light curing 3D printing resin for the production of CAD/Cast objects which are converted into alloy using the lost wax process. Optiprint zero is suitable for the use in 3D printers with light sources in the range from 385 nm to 405 nm. Composition: acrylate mixture, filler mixture, photoinitiator.

2. Printing

2.1. Processing steps

Observe the IFU (instructions for use) of the printer and the software. Pay attention to clean work. Contamination on the 3D printer can cause defects in the printed part and damage the material tray. Check whether you can download the relevant material parameters for optiprint resins from your printer manufacturer's database.

If you are using a printer without integrated heating, it is recommended that both the printer and the optiprint product are heated to an operating temperature of 30 ° C / 86 ° F. A cold start should be avoided (you can find information on heating the product in the FAQ). Shake the optiprint bottle before use and sufficiently fill the printer material tray.

Positioning and supporting the objects to be printed with the auto support function

Position and support the objects as shown in Figures 1-4 below.

Important: Make sure to align the telescopic crowns at a 45 ° angle (Fig. 3) Add a base plate (thickness 0.5 mm) to the supported objects. In the case of a fully nested build platform, it is advisable to select a continuous base plate with a hole pattern. Then start the printing process by following the printer instructions.

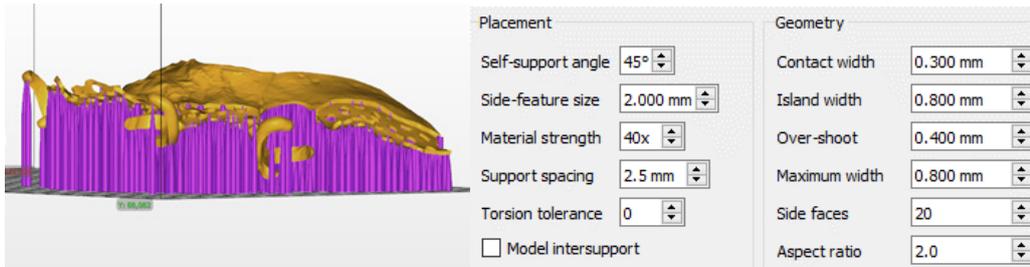


Fig. 1-2: Positioning of model casts, crowns and bridges (yellow) with supports (pink) and recommendation for setting the support parameters

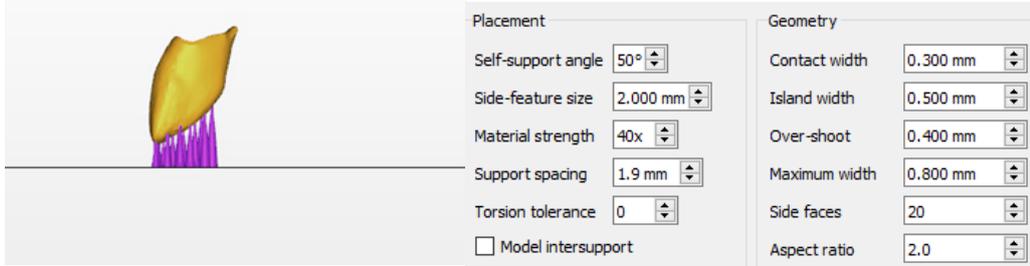


Fig. 3-4: Positioning of telescopes (yellow) with supports (pink) and recommendation for setting the support parameters

For Asiga Max / Pro 4K users: The „Fast Print Mode“ and the „Separation Detect“ must be activated. Then start the printing process by following the printer instructions.

2.2 Cleaning

Due to its high viscosity, optiprint zero does not drip completely off the build platform after the printing process. Wipe off any resin residues with a clean, disposable spatula. Then take the build platform out of the printer.

Cleaning with isopropanol: First clean the printed parts and then remove them from the construction platform with a suitable instrument (cutter knife). Then cut off the supports.

1. Blow off excess resin with compressed air.
2. Cleaning the surface with isopropanol (99%) and a soft, long-haired brush.
3. Drying with compressed air and checking of the cleaning result. You can recognize sufficient cleaning by a matt surface. Shiny areas require spot cleaning with cleaning liquid and a brush. Keep cleaning until no more shiny areas occur.
4. Separate the supports with the fingers or a scalpel.
5. Clean the upper side of the object and check the cleaning result.

Cleaning with optiprint clean: Remove the printed parts from the construction platform with a suitable instrument (cutter knife) and cut off the supports.

1. Blow off excess resin with compressed air.
2. Pour the cleaning liquid and the printed part into a sealable container. Clean in a non-heated ultrasonic bath (2 minutes).
3. Drying with compressed air and checking of the cleaning result. You can recognize sufficient cleaning by a matt surface. Shiny areas require spot cleaning with cleaning liquid and a brush. Keep cleaning until no more shiny areas occur.
4. Post-cleaning of the printed part with isopropanol (99%) and a brush. Subsequent control of the cleaning result.

! Complete the post-treatment of the printed parts quickly and adhere to the time specifications. Above all, avoid an unnecessarily long bath in the cleaning liquid and long waiting times between the steps. Isopropanol (99%) and optiprint clean can be used as cleaning liquids (if optiprint clean is used, a 2-minute subsequent cleaning with isopropanol is always required. optiprint clean is not suitable for cleaning surfaces and devices).

2.3. Light curing

To achieve the desired material properties, the completely cleaned and dried print objects must be light cured. Recommendation: flash light unit Otofash G171 (NK Optik) with nitrogen flooding, 2x 500 light flashes. Turn the parts in between.

! The final properties as well as the final color depend on the light curing process. When light curing in other light curing devices, a comparably high energy input must be ensured (200 W). This depends on the light source used and the exposure time (UVA radiation source (315-400 nm), 2 minutes)).

2.4. Investing

! optiprint zero is suitable for both the speed casting process and the conventional heating. To invest non-precious metals and cobalt-chrome alloys, use a phosphate-bonded investment material (Provest RM + Superfluid; dentona AG). Observe the processing instruction of the investment material. When fabricating crowns and bridges, we recommend investing with a muffle ring.

3. Storage

Protect this product from strong light and heat sources. The recommended storage temperature is between 5 ° C and 30 ° C. Close the packaging after each use. If storage protected from light and dust is ensured, optiprint zero can remain in the material tray after printing. Due to its high viscosity, optiprint zero cannot be filtered.

4. Disposal

Disposal according to official regulations. Liquid resin must not be disposed of together with household waste. Do not empty into drains.

FAQ

How can I heat the optiprint product to operating temperature?

By heating to operating temperature, you increase the security of your printing and produce printed parts of consistent quality. In addition, the optiprint product is less viscous when heated, which makes it easier to shake in the bottle.

- Pre-heat the optiprint product in its bottle in a water bath. The label should not come off the bottle during this process.
- Alternatively, fill the optiprint product into the material tray and leave it protected from light and dust until it has reached room temperature.

How do I clean my printed parts with isopropanol if I don't want to leave them on the build platform?

· Place the object in a flat container with isopropanol and brush over its surface. Keep the contact with the cleaning liquid as short as possible and check your cleaning result (see also point 2.2. Cleaning with isopropanol).

Are there any white spots on the surface of the printed object after cleaning?

- The object has been in contact with the cleaning liquid for too long.
- This can lead to an unclean cast surface.

Are there grooves on the surface of the printed object?

- Was a soft brush used? Hard bristle brushes are rather unsuitable.

How do I deal with the viscosity of the optiprint product?

- Once heated, the optiprint product is less viscous (please see our information on heating).
- If you warm the product in the bottle, it can be shaken better.

How do I keep the material loss during printing as low as possible?

- You can wipe off resin residues on the build platform with a disposable spatula once heating is complete.
- Place the opened and eventually heated optiprint bottle in the printer upside down on the build platform in order to allow the printing resin to run completely into the material tray.

The muffle cracks in the furnace?

- Did the muffle come into contact with water (e.g. when roughening on the trimmer)?
- Have the edges of the muffle been broken?
- Tensions can arise at the edges of the investment material, which may cause the muffle to crack.

Did you miss the correct setup time?

- When speed casting, the muffle must be placed in the hot furnace at the highest setting temperature which can be different depending on the room conditions.

Bad cast surface (orange peel)?

- During preheating the muffle was lying or had contact to the furnace wall?
- This leads to different temperatures within the muffle and this may result in good and bad cast objects in a muffle.

Bad cast surface (sandpaper structure)?

- Did you sufficiently clean and correctly light cure?
- Uncured resin can react with the investment material and cause an unclean cast surface.
- Did you use a wax relaxer?
- Let the relaxation agent dry off completely.
- Has the mixing time been kept?
- Phosphate-bonded investment materials should be stirred as long as possible under full vacuum. Therefore please exactly observe eventually the mixing times.
- The difference between preheat and cast temperature shouldn't exceed 400°C. Has the liquidus point and cast temperature been observed? Do not overheat the alloy when melting.

Didn't this guide answer your question or did we forget something?

Send us your question or suggestion by email with the subject „IFU - optiprint zero“ to support@dentona.de

We will be pleased to help you!



www.dentona.de

λ 385 –
405 nm

