

# Optiprint Durotec

optiprint durotec is a 3D printing resin designed for the additive manufacturing of printed, fracture-resistant bite splints.

## Available Sizes:

- 1000 g – Item No. 48460
- 500 g – Item No. 48461

## 1. Product Description

Optiprint Durotec 405 is a light-curing 3D printing resin used for the additive manufacturing of custom-made bite splints for various medical indications prescribed by dental professionals.

Suitable for devices with a 405 nm light wavelength, unless stated otherwise on the label. This Class I medical device is intended for adult and adolescent patients.

## 2. Intended Use

Designed for printing fracture-resistant bite splints via additive manufacturing.

## 3. Contraindications

- Do not use for purposes other than those described in the intended use.
- Do not use the polymerized material if allergic to any components (contains methacrylate monomers and oligomers).

## 4. Risk Mitigation & Safety Instructions

- Improper use or deviations from the recommended process can affect the quality, biocompatibility, and mechanical properties of the printed part.
- Biocompatibility is only ensured with proper application (post-curing in the absence of oxygen).
- Only fully polymerized parts should be further processed.
- Post-curing must be done in a suitable unit (e.g., otoflash G171 or Rapid Shape Cure).
- Clean parts after printing in an ultrasonic bath with a suitable solution (e.g., 99% isopropanol).
- Always record the LOT number during traceable procedures.
- Water storage for 24 hours is recommended before use.
- Follow all recommended printer and curing settings.
- Read and observe the Safety Data Sheet (SDS) before use.
- Observe proper material thickness for fracture safety (see 5.1).
- Wear PPE: nitrile gloves, safety goggles, protective clothing.
- Avoid skin and eye contact before curing.
- optiprint materials may irritate eyes and skin.

- Rare allergic reactions may occur—if so, rinse thoroughly with water and consult a physician (see SDS).
- For professional use only. Keep out of reach of children.

## 5. Processing Steps

### 5.1 Design

Minimum thickness should not be below:

- Occlusal:  $\geq 1.0$  mm
- Peripheral:  $\geq 1.3$  mm

### 5.2 Printing

- Follow printer and software instructions.
- Keep printer clean to avoid defects and tray damage.
- Download material parameters from your printer manufacturer's database.
- Shake resin bottle before use and fill printer tank accordingly.
- Stir resin in the tank before each print.
- For non-heated printers, warm resin and printer to 30°C before use.

### 5.3 Cleaning After Printing

- Due to high viscosity, resin doesn't fully drip off—remove residue with a wooden spatula.
- Detach parts from the build platform; remove supports before cleaning.

#### Pre-cleaning:

- 5 minutes in 99% isopropanol in an unheated ultrasonic cleaner.
- Brush can be used to assist.

#### Main Cleaning:

- Additional 5 minutes in fresh 99% isopropanol.
- Gently dry with compressed air.

If resin residues remain after drying, clean manually again with 99% isopropanol. A matte surface indicates proper cleaning.

Alternatively, use the Rapid Shape Wash program.

### 5.4 Post-Curing

Final properties and colour depend on post-curing.

#### Requirements:

- Cleaned and dried parts must be post-cured in oxygen-free conditions.

Recommended Unit:

- Otofash G171 (NK Optik) with nitrogen flushing and UVB-filtered Plexiglas chamber.

### **Settings:**

- 2 x 2000 flashes (rotate after 2000)
- Alternatively: 10 min in 200 W light unit (315–400 nm)

Rapid Shape Cure system can also be used.

### **6. Final Cleaning**

- Polish using conventional methods.
- Final rinse with water and dish soap in a cold ultrasonic bath (5 min) until all polishing residues are gone.
- Rinse under clear water for 30 seconds until all foam is gone.

### **7. Instructions for Lab/Dentist Before Delivering to Patient**

- Store in water for 24 hours before delivery.
- No disinfection required.
- Do not autoclave optiprint durotec 405.
- Material is thermoflexible – before fitting, submerge in ~40°C water for 2 minutes to improve fit.
- Prevent recontamination during water bath.
- Share usage instructions with patient and review at follow-ups.

### **Patient Instructions**

- Comfort: Material softens with body temperature. Soak in 40°C water for 2 minutes before wearing. Do not eat while wearing.
- Cleaning: Rinse with water and a soft toothbrush after use. Do not use toothpaste, denture cleaners, or alcohol-based products.
- Storage: Keep dry between uses.
- Avoid: Heat, cold, direct sunlight.

### **8. Technical Data**

- Elastic Modulus:  $\geq 800$  MPa
- Flexural Strength:  $\geq 30$  MPa
- Shore D Hardness:  $70 \pm 10\%$

### **9. Composition**

- Acrylate blend
- Photoinitiator
- Inhibitor

### **10. Storage**

- Store away from heat and light sources.
- Recommended temp: 5°C to 30°C

- Close bottle after use.
- Resin can remain in the tank if protected from light/dust.
- Do not use after expiration date.

## **11. Disposal**

- Dispose of liquid resin per local regulations.
- Do not throw in household waste or pour into drains.

## **12. Warranty Information**

If defects occur within the warranty period and are the manufacturer's fault, only material replacement is offered.

dentona AG is not liable for losses or damages, direct or indirect, caused by this material. Liability for product defects applies only to cases of intent or gross negligence.

Improper handling voids any liability.

## **13. Symbols Overview**

- Refer to Instructions for Use (also at [www.dentona.de](http://www.dentona.de))
- Article number
- Expiration date
- CE mark
- Protect from sunlight
- Manufacturer
- Warning: health hazard
- Temperature limit (5–30°C)
- Medical device
- Environmental hazard
- Lot number (batch code)