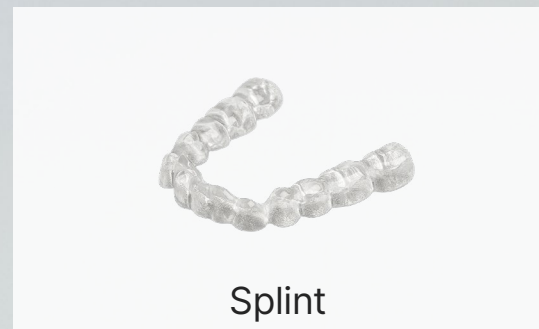
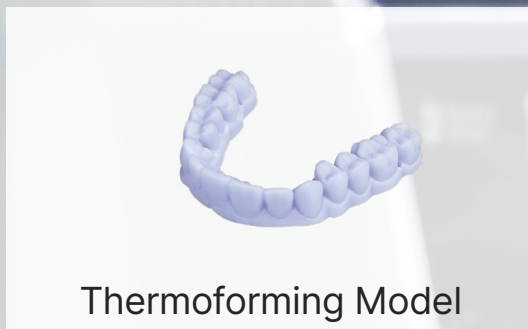




Primeprint Solution™ Materials



Splint



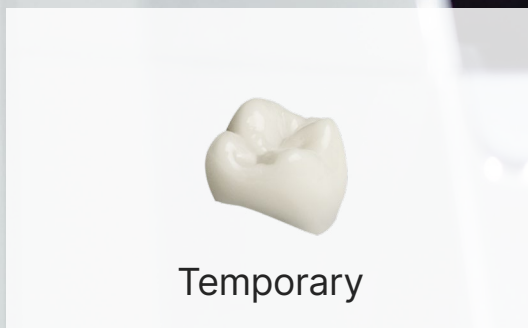
Thermoforming Model



Surgical Guide



Solid and Working Model



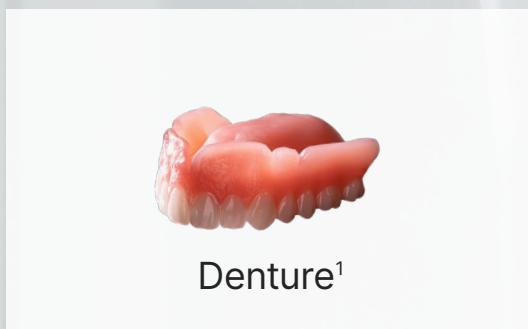
Temporary



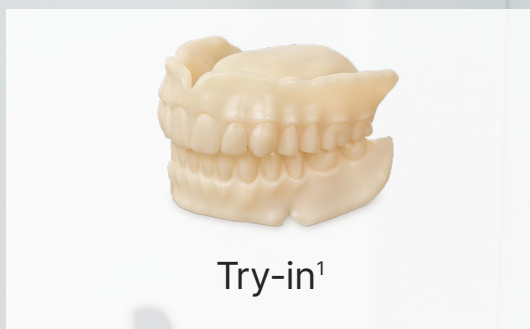
Impression Tray



Cast



Denture¹



Try-in¹

Find out more >



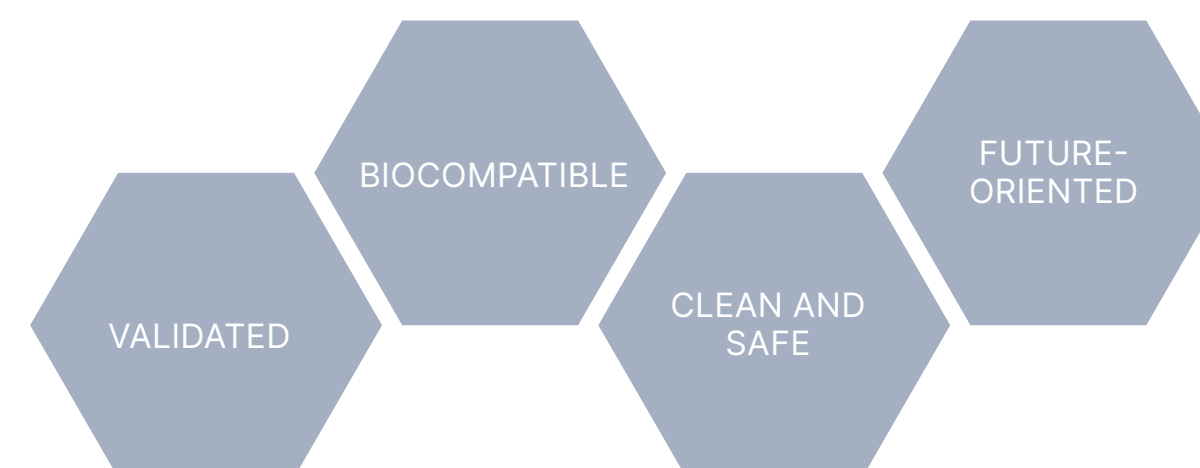
Introduction

Dentsply Sirona enables an easy and delegable additive manufacturing workflow

The process starts with a scan, either with Primescan® or a third-party scanner. After designing with CEREC® or inLab® CAD Software the data is transferred into the inLab CAM Software. An alternative is to use the design service DS Core™ Create for ready-to-print designs or to import a third-party STL file. In the inLab CAM Software, the file is processed to be printed. The printing process is based on photopolymerization with a fast 385 nm DLP light engine. Post-processing takes place in a fully automated and validated process in Primeprint PPU (Post Processing Unit) with two washing cycles, air drying and light curing. The properties of the final product depend, among others, on the finishing process. Correct post-curing is very important for biocompatibility.

In this process, material plays a significant role. Besides material in-house development, Dentsply Sirona maintains a strong relationship with material partners like DETAX. The processes for each material are fully validated so that the user can expect biocompatible, reproducible and accurate results¹. A particular long-term documentation collects the parameters for each 3D printing process (e.g. manufacturing date, material temperature etc.).

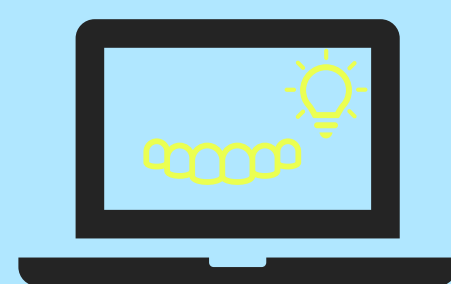
The material cartridge system of Primeprint Solution provides a safe working environment: The user is to no point of time in contact with uncured resins. The following pages are filled with the high-quality and -performing materials offered by Dentsply Sirona. The portfolio is continuously being expanded with new materials together with existing and new partners as well as research in-house.



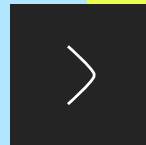
Do you want to experience our biocompatible and reproducible results? Ask your sales rep for the master model.

[Find out more >](#)

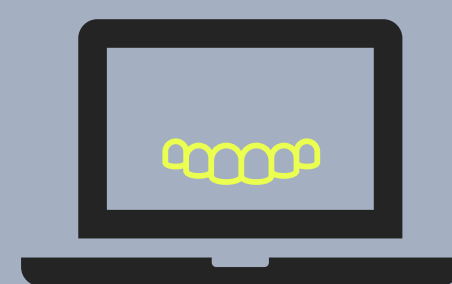
¹ Reich S, Berndt S, Kuhne CH, Herstell H. Accuracy of 3D-Printed Occlusal Devices of Different Volumes Using a Digital Light Processing Printer Appl. Sci. 2022, 12(3), 1576; <https://doi.org/10.3390/app12031576> Berndt S, Herstell H, Raith S, Kuhne CH, Reich S. Accuracy of 3D-Printed Master Cast Workflow Using a Digital Light Processing Printer. Appl. Sci. 2022, 12(5), 2619; <https://doi.org/10.3390/app12052619>



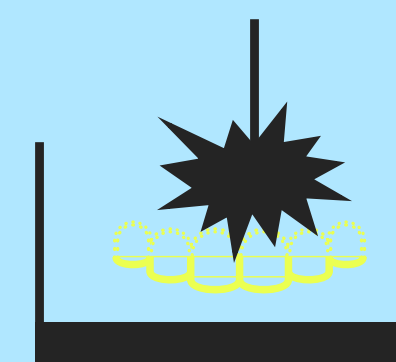
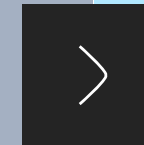
CASE



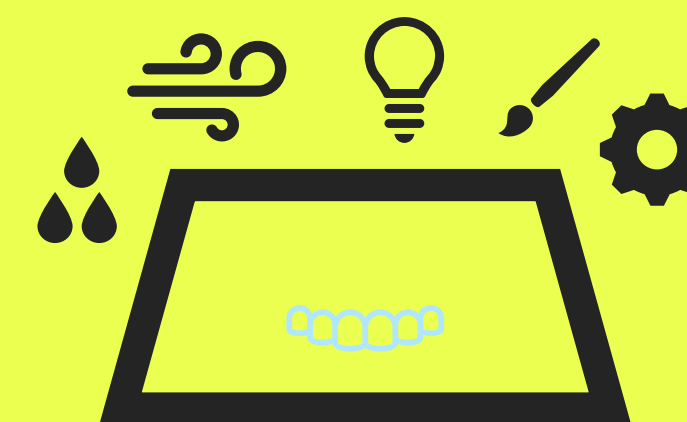
CREATION OF DATA



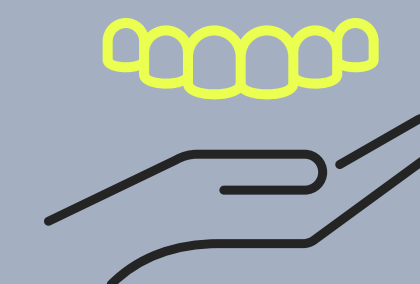
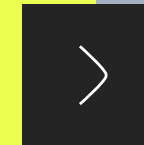
CAD/CAM PREPARATION



ADDITIVE MANUFACTURING



POST-PROCESSING



FINISHED COMPONENT

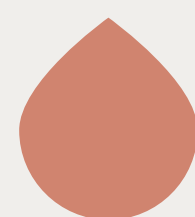


Product overview

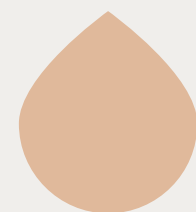
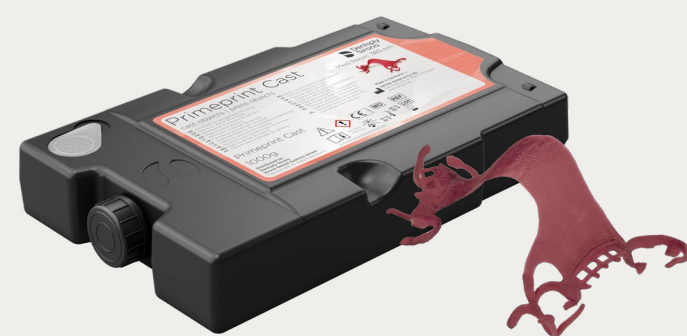
3D printing material delivered in validated DS Cartridges

Primeprint comes with validated materials and RFID-supported, automated material management. The Primeprint material concept offers user-friendly support with its color-coded material cartridge system. Each print material type is associated with a different color, which is mirrored in the inLab CAM Software for quick orientation, for correct material selection and easily identifiable storage. Once the cartridge is inserted into its Material Unit, the inLab CAM Software automatically pairs and identifies them as a unit. Thanks to the RFID tags, the software monitors the fill level of each material unit to indicate when a replacement is required.

[Find out more >](#)



Primeprint Cast



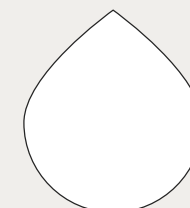
Primeprint Guide



Primeprint Model



Primeprint Model T



Primeprint Splint



Primeprint Temp



Primeprint Tray



Click on each material to learn more



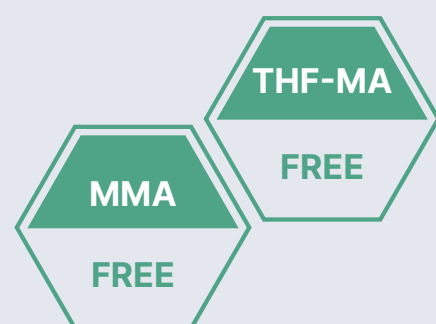
Light-curing formulation for the 3D printing of high precision casting objects.

Colour: red-transparent

Wavelength: 385 nm

Technical Product

- Residue-free burning out
- Distortion-free and precise, even for delicate constructions
- Suitable for phosphate-bonded embedding materials
- Low viscosity for fast cleaning
- MMA & THF-MA free

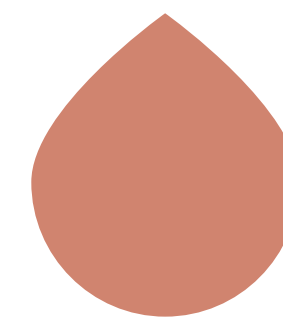


Property	Standard	Unit measurement	Result
Flexural strength	DIN EN ISO 178) ¹	MPa	> 70
Flexural modulus	DIN EN ISO 178) ¹	MPa	> 1700
Heating temperature	-	-	1 h @ 800 °C
Cauterisation residual ash content	-	-	< 0,1 %



Primeprint Cast 1000g, SKU: 6740265

¹Plastics: Determination of flexural properties (in accordance with the norm at room temperature)



Primeprint Cast

Casting Objects



Allow reliable precision for cast objects.

Any corrections or repairs after printing are possible with easyform gel[®] LC.

Distortion-free and stable, even with delicate frameworks. Enables direct FIT CHECK.

Tips & recommendations

- Preheating temperature of 800 °C for 30-45 minutes, depending on the mold size
- Adjustments or repairs possible with easyform gel LC by DETAX



Light-curing formulation for the 3D printing of surgical guides.

Colour: clear-transparent

Wavelength: 385 nm

Medical Device Class MDR IIa

Medical Device Class FDA I

- Validated for autoclave sterilization according to EN ISO 17664!
- Very high mechanical stability
- Compatible with FREEFORM® plast
- MMA free, tasteless



Property	Standard	Unit measurement	Result
Flexural strength	DIN EN ISO 20795-2) ¹	MPa	> 75
Flexural modulus	DIN EN ISO 20795-2) ¹	MPa	> 1650
Water sorption	DIN EN ISO 20795-2) ¹	µg/mm ³	< 32
Water solubility	DIN EN ISO 20795-2) ¹	µg/mm ³	< 5
Hardness	–	Shore D	> 82
Biocompatibility	DIN EN ISO 10993-1) ²	–	complies

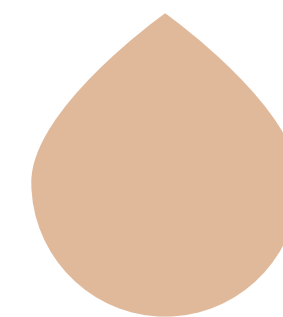


Watch how to finalize a Primeprint Guide



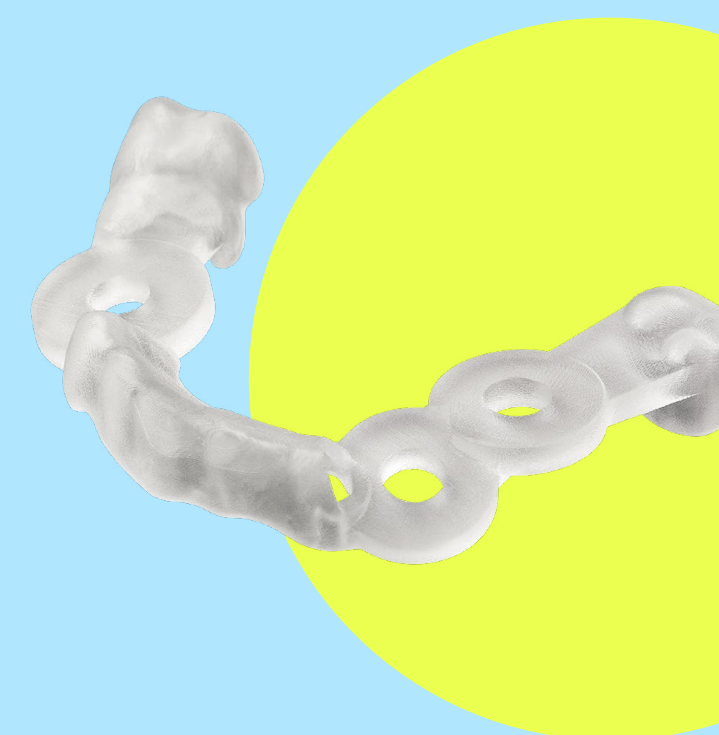
Primeprint Guide 1000g, SKU: 6740232

¹Dentistry – Part 2: Orthodontic base polymers (in accordance with the norm at room temperature)
²Biological evaluation of medical devices – Part 1: Evaluation and testing within a risk management process



Primeprint Guide

Surgical Guides



The crystal-clear material allows reliable control of the working area during drilling.

For printing hard plastic parts of orthodontic appliances.

Supports precise positioning and fixation of the drill sleeves enable safe positioning for the patient.

Tips & recommendations

- Approved sterilization in autoclaves with: 121°C for 15 min according EN ISO 17664
- Expandable and compatible with FREEFORM® plast by DETAX
- Drill sleeves can be easily implemented
- Primeprint Guide is validated for the “W&H Lisa 522, Program UNIVERSAL 121” sterilization process (see “technical data on sterilization process [1.10]”)
- Steam sterilization may only be performed with equipment that complies with the standards EN 13060 and EN 285



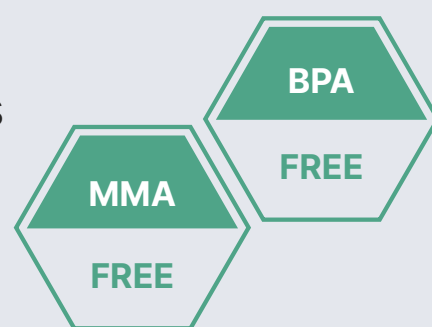
Light-curing formulation for the 3D printing of dental master and working models.

Colour: caramel

Wavelength: 385 nm

Technical Product

- Fast-printing
- Extremely high surface hardness
- Dimensionally stable
- BPA & MMA free



Property	Standard	Unit measurement	Result
Flexural strength	DIN EN ISO 178) ¹	MPa	> 70
Flexural modulus	DIN EN ISO 178) ¹	MPa	> 1500
Hardness	-	Shore D	> 80

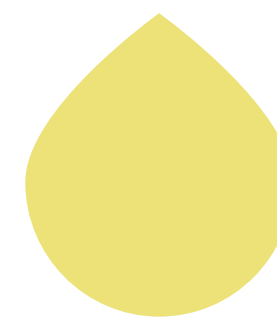


Watch how to finalize a Primeprint Model



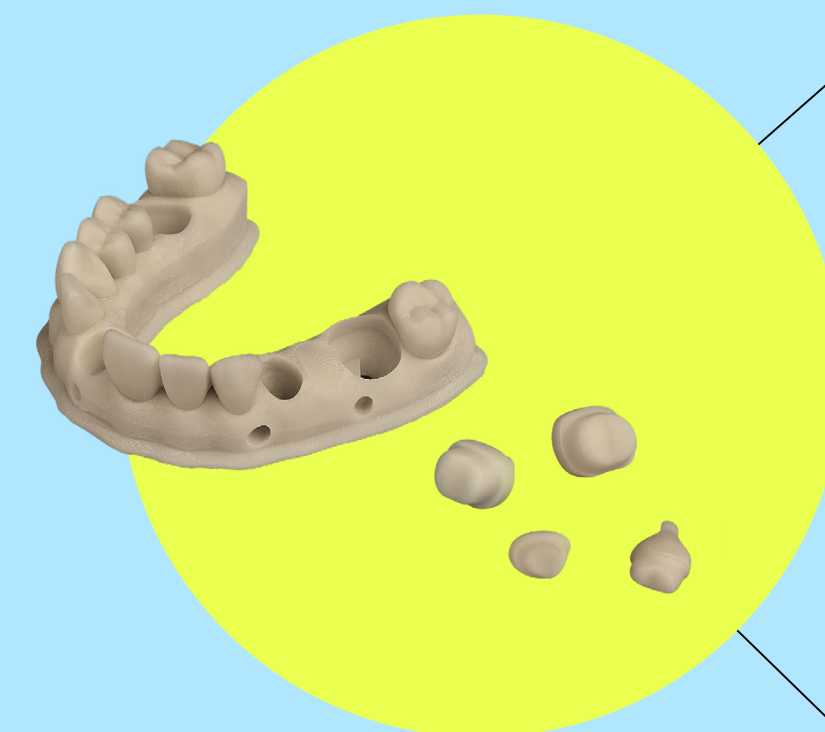
Primeprint Model 1000g, SKU: 6740257

¹Plastics: Determination of flexural properties (in accordance with the norm at room temperature)



Primeprint Model

Model Production, Working Models, Situation Models and Control Models



Haptics and stability meet the high requirements in model making.

High mechanical strength helps to ensure the functionality and loading of the models.

Excellent detail reproduction due to plaster-like colour "caramel"

Tips & recommendations

- Easy detachment of the support structure
- Hollow models help to save material and achieve better curing results
- Not suitable for thermoforming



Light-curing formulation for the 3D printing of dental models for the thermoforming technique.

Colour: light blue

Wavelength: 385 nm

Technical Product

- High temperature resistance
- Very high edge strength
- Plaster-like appearance & haptics
- Precise detail reproduction
- MMA-free



Property	Standard	Unit measurement	Result
Working temperature for thermoforming foils		°C	< 195
Flexural strength	DIN EN ISO 178) ¹	MPa	> 80
Flexural modulus	DIN EN ISO 178) ¹	MPa	> 1700
Hardness	-	Shore D	> 83

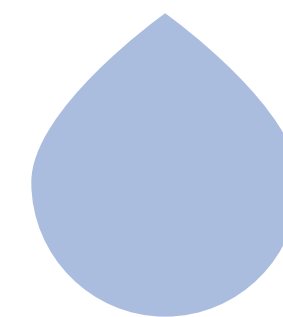


Watch how to finalize a Primeprint Model T



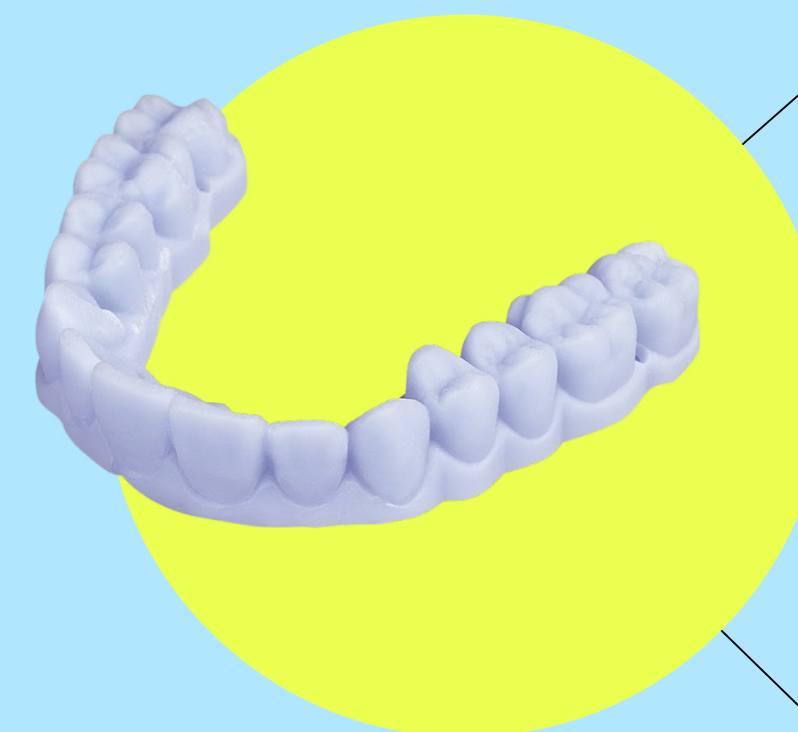
Primeprint Model T 1000g, SKU: 6740224

¹Plastics: Determination of flexural properties (in accordance with the norm at room temperature)



Primeprint Model T

Model Production and Thermoforming Technique



Great surface hardness and edge strength of the models.

The stability of the models is preserved even during heating in thermoforming.

The pronounced intrinsic stability enables manufacture of hollow thermoformed models.

Tips & recommendations

- Easy detachment of the support structure
- No further treatment necessary
- Suitable and validated for thermoforming sheets up to 195°C (short contact)
- The model does not distort during thermoforming process (hollow models) and can also be used multiple times



Light-curing formulation for the 3D printing of hard splints.

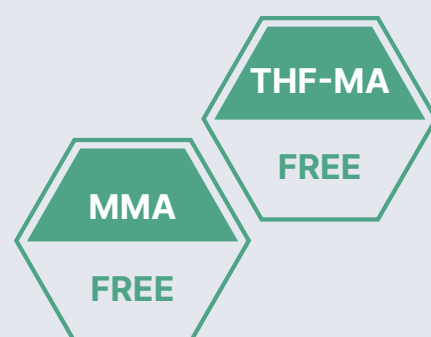
Colour: clear-transparent

Wavelength: 385 nm

Medical Device Class MDR IIa

Medical Device Class FDA I

- Easy to polish
- Highest bending & breaking strength
- High accuracy of fit
- MMA & THF-MA free, tasteless



Property	Standard	Unit measurement	Result
Flexural strength	DIN EN ISO 20795-2) ¹	MPa	> 80
Flexural modulus	DIN EN ISO 20795-2) ¹	MPa	> 2000
Water sorption	DIN EN ISO 20795-2) ¹	µg/mm ³	< 32
Water solubility	DIN EN ISO 20795-2) ¹	µg/mm ³	< 5
Hardness	-	Shore D	> 82
Biocompatibility	DIN EN ISO 10993-1) ²	-	complies

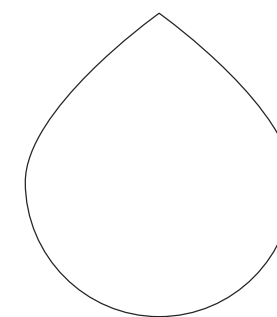


Watch how to finalize a Primeprint Splint



Primeprint Splint 1000g, SKU: 6740240

¹Dentistry - Part 2: Orthodontic base polymers (in accordance with the norm at room temperature)
²Biological evaluation of medical devices – Part 1: Evaluation and testing within a risk management process



Primeprint Splint

Hard Splints



Hard occlusal splint, rigid type, with high efficiency.

Transparent, mouth-resistant and easy to clean.

Compatible with FREEFORM[®] gel for additional occlusal design in practice.

Tips & recommendations

- Easy detachment of the support structure
- Very easy to polish
- Expandable with FREEFORM[®] gel by DETAX
- Wearing time follows the recommendation for class 2a resins
- Splints can be repaired with FREEFORM[®] gel by DETAX



Light-curing formulation for 3D printing of temporary crowns & bridges.

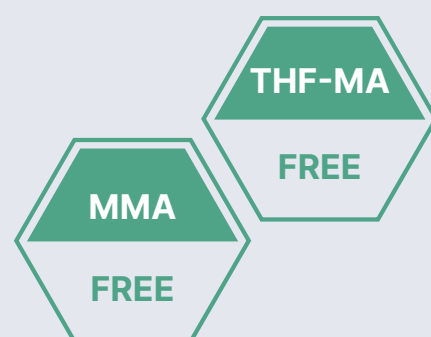
Colours: A1, A2, A3

Wavelength: 385 nm

Medical Device Class MDR IIa

Medical Device Class FDA I

- High breaking strength
- Short post-processing
- Low material consumption
- MMA & THF-MA free



Property	Standard	Unit measurement	Result
Flexural strength	DIN EN ISO 10477) ¹	MPa	> 100
Flexural modulus	DIN EN ISO 10477) ¹	MPa	> 2300
Water sorption	DIN EN ISO 10477) ¹	µg/mm ³	< 40
Water solubility	DIN EN ISO 10477) ¹	µg/mm ³	< 7,5
Hardness	-	Barcol	> 40
Biocompatibility	DIN EN ISO 10993-1) ²	-	complies

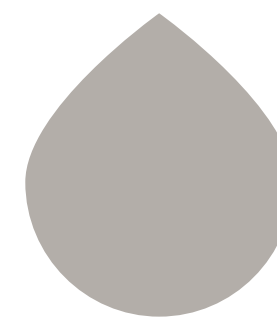


Watch how to finalize a Primeprint Temp



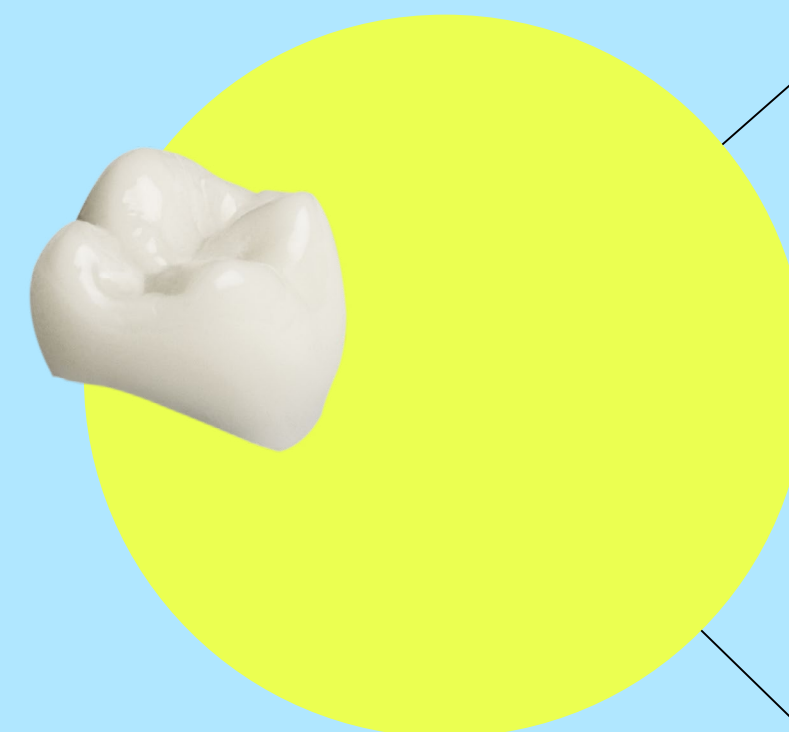
Primeprint Temp 1000g, SKU: A1: 6740281, A2: 6740299, A3: 6740307

¹ Polymer-based crown and bridge materials (in accordance with the norm at room temperature)
² Biological evaluation of medical devices – Part 1: Evaluation and testing within a risk management process



Primeprint Temp

Temporary Crowns and Bridges as well as Anterior and Posterior Tooth Restorations



The natural-looking translucent colours (according to VITA classical A1-A3 shade guide) can be aesthetically modified for single crown and bridge restorations.

Temporary restorations provide a high level of oral stability and in conjunction with tempolink[®], enable excellent marginal seal during a period of wear.

Easy polishing results in very high surface quality with exceptional abrasion resistance.

Tips & recommendations

- Easy detachment of the support structure
- Very easy to polish
- Expandable with SMARTREPAIR[®] SYSTEM by DETAX or composite
- Primeprint Temp contains fluorescent properties for natural light effects
- Indicated for the use up to 30 days



Light-curing formulation for the 3D printing of individual impression and functional trays, base plates.

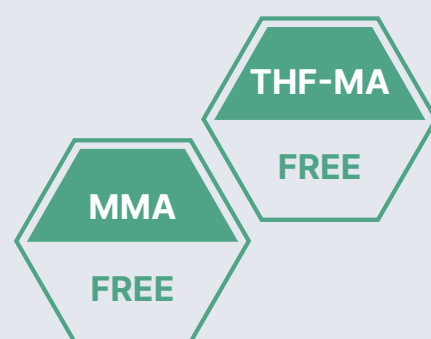
Colour: green

Wavelength: 385 nm

Medical Device Class MDR I

Medical Device Class FDA I

- High bending and breaking strength
- Low viscosity
- Printable with 200 µm layer thickness
- MMA & THF-MA free, tasteless



Property	Standard	Unit measurement	Result
Flexural strength	DIN EN ISO 178) ¹	MPa	> 90
Flexural modulus	DIN EN ISO 178) ¹	MPa	> 1900
Heating temperature	-	Shore D	> 84
Biocompatibilitynt-	DIN EN ISO 10993-1) ²	-	complies

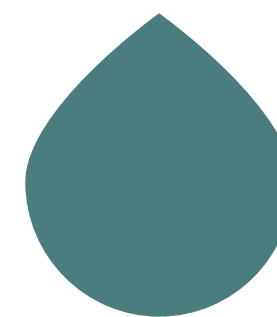


Watch how to finalize a Primeprint Tray



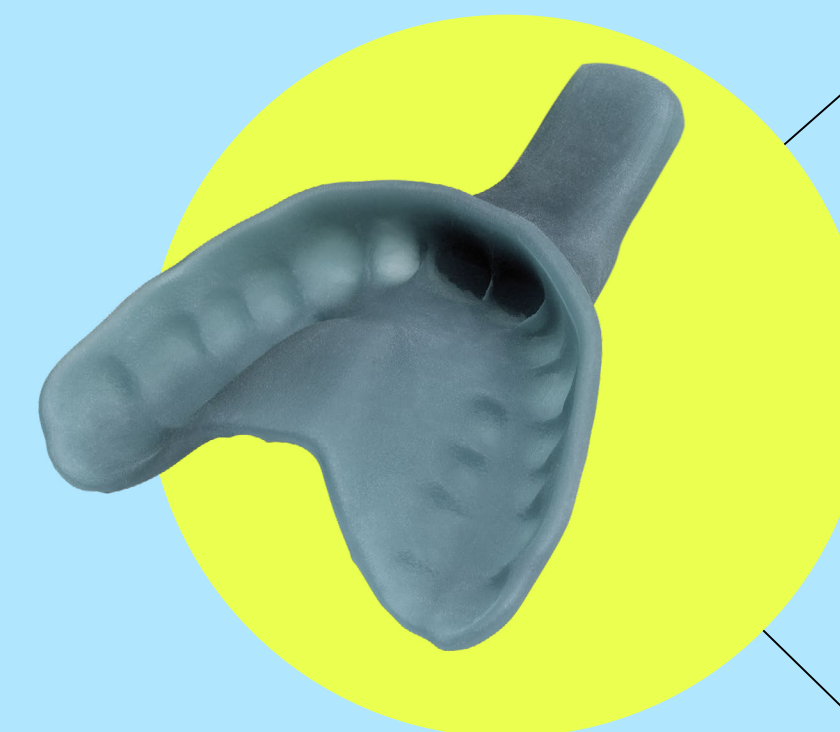
Primeprint Tray 1000g, SKU: 6740216

¹Plastics: Determination of flexural properties (in accordance with the norm at room temperature)
²Biological evaluation of medical devices – Part 1: Evaluation and testing within a risk management process



Primeprint Tray

Individual Impression Trays



Very high dimensional stability and torsional rigidity for accurate and distortion-free impressions.

Very suitable for implant impression taking within the digital workflow.

Compatible for many tray adhesives and impression materials.

Tips & recommendations

- Easy detachment of the support structure
- No further re-work necessary
- Only steam and clean



Resin handling recommendations

Storage

Exposure of photopolymer plastics to any type of solar radiation or light should be strictly avoided. Resin-filled cartridges should always be stored between 15 °C und 28 °C irrespective of whether their seal has been broken. The storage instructions are printed on the packaging and the cartridge.

The resin has an expiry date printed on the packaging and the cartridge. Primeprint detects when the expiry date of the resin in the cartridge or vat has been exceeded and notifies the user.

Here you can find the Primeprint Material IFUs at a glance:



Opened cartridges

Once the seal label has been opened, the ventilation opening is exposed. The cartridge must be stored with its ventilation opening facing upward, as resin can otherwise leak.

> Avoid applying pressure to the cartridge.

Material Units

Store the Material Unit only with a cartridge inserted. Do not expose it to sunlight and take basic steps to prevent UV light incidence on the Material Unit filled with resin.



Figure 1: Packaging label

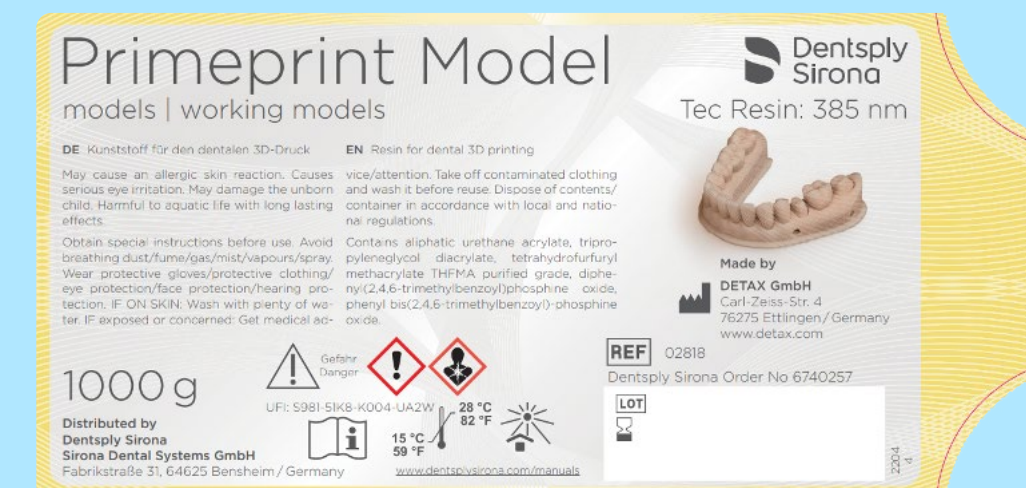


Figure 2: Cartridge label

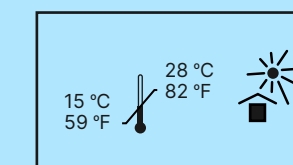


Figure 3: Message on the display



Figure 4: Message on the display



Comissioning

There are a few steps to follow when installing a new cartridge. Primeprint will guide the user through the necessary steps.

1.

Shake the cartridge for about 10 seconds so that the contents are well mixed.

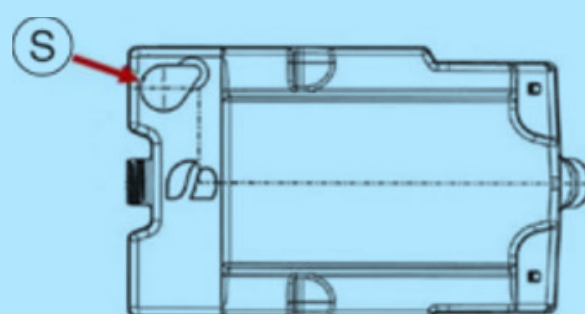
2.

The valve must be pressed in once to relieve the outlet valve for the first time. To do this, stand the cartridge upright and briefly press the valve in. The valve tappet should then move back to its original position.



3.

Remove the seal label (S) from the cartridge.



4.

Insert the cartridge into the Material Unit. With an RFID tag on Cartridge and Primeprint Material Unit, the unit automatically pairs these two components. The name of vat assigned ex works can be found on the white sticker on the right side of the material unit vat. The name corresponds to the numerical value assigned to the RFID code.

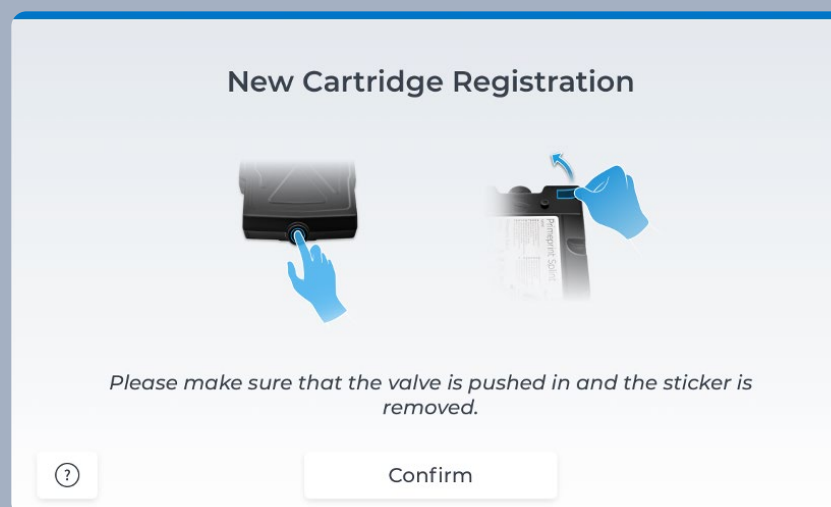


Figure 5: Message on the display

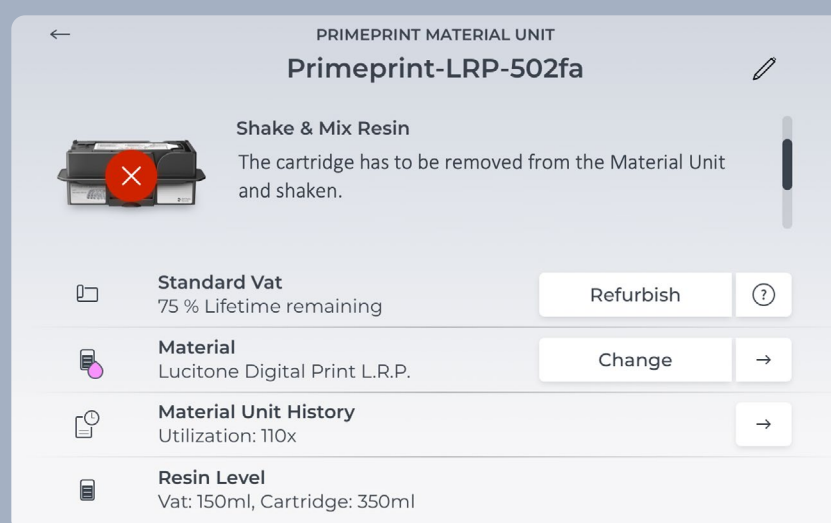


Figure 6: Message on the display

Shelf lifetime

The shelf lifetime is 24 months. Primeprint detects when the shelf life has been exceeded and notifies the user. To achieve reliable printing results, the printing resin is heated to a defined minimum temperature and the resin is automatically conditioned in the tank for every printing process. The resin in the cartridge is mixed through the intelligent design of the cartridge when the cartridge is tilted up in the unit. The minimum resin temperature for printing is currently about 30°C. Resin temperatures above 30°C do not affect the printing result.

If a combination of cartridge and material unit has not been used in Primeprint for more than 1 month, a notice to shake the cartridge appears on the display and an increased conditioning of the resin in the tray takes place compared to the normal printing process.

Disposal

Liquid resin is classified as hazardous waste and must therefore not be disposed of down the drain or in household waste. Disposal of the resin and isopropanol must be carried out in accordance with local, regional, national and international regulations. Information on disposal is included in the Safety Data Sheet of the resin and can be obtained from local authorities. In some cases, small containers can be disposed of free of charge if the safety data sheet is submitted. Cooperation with disposal service providers is also often possible. Contaminated packaging must be treated in the same way as the material.

Cured resin can be disposed of in normal waste. Curing of the resin can be induced by exposure to sunlight. Resin bound in isopropanol can also be cured under the exposure to sunlight and then filtered out of the isopropanol. Gloves and paper towels contaminated with resin can also be cured under the exposure to sunlight and then disposed of with household waste.



Dentsply Sirona

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dentsplysirona.com

Subject to technical changes and errors within the text, Order No. M43-C264-01-7600, 03/2023.

Procedural Solutions

Preventive
Restorative
Orthodontics
Endodontics
Implants
Prosthetics

Enabling Technologies

CAD/CAM
Imaging
Treatment Centers
Instruments