Order your free of charge 3D sample print now!
www.voco.dental/en/form/3d-sample-print

V-Print®

V-Print®

3D PRINTING MATERIALS FOR THE DENTAL PRACTICE AND DENTAL LABORATORY

Integrated with exocad

VOCO
THE DENTALISTS

CONTENTS

Introduction · · · · · · · · · · · · 2
Advantages of all V-Print® materials · · · · · · · · · · · · · · 3
Overview of V-Print® printing materials · · · · · · · · 4
V-Print® SG · · · · · · · · · · · · 6
V-Print® splint 2.0 · · · · · · · 7
V-Print® splint comfort · · · · 8
V-Print® dentbase · · · · · · · · 9
V-Print® c&b temp · · · · · · 10
V-Print® tray · · · · · · · · · · · 11
V-Print® Try-In · · · · · · · · · 12
V-Print® IBT · · · · · · · · · · · 13
V-Print® model 2.0 · · · · · · 14
V-Print® cast · · · · · · · · · · · 15
Printer and material compatibilities for optimum flexibility · · · · · · · · · · · · · 16

VOCO – The Dentalists
Manufacturing dental products is our passion

For four decades, VOCO has been known around the world as an innovative manufacturer of dental products with particular expertise in the field of light-curing resins for direct and indirect restorative dentistry. VOCO applies this knowledge and experience to the field of digital dentistry and has successfully launched a wide variety of products for additive and subtractive fabrication techniques worldwide. Alongside materials for the subtractive workflow, such as Grandio blocs and Structur CAD, VOCO offers professional users V-Print, a tried and tested range of top-quality dental materials for 3D printing.
All the 3D printing materials are developed at VOCO headquarters in Cuxhaven, Germany, by an interdisciplinary research team comprising dental technicians, dental engineers and chemists all along the digital process chain. This guarantees optimal user-friendliness and performance in the dental surgery. V-Print printing materials from VOCO also offer practical advantages to facilitate your day-to-day work.

How do they do it?!

VOCO uses nothing but the best raw materials which comply fully with the strict quality standards it sets itself. In combination with research expertise acquired over decades in the field of light-curing resins, VOCO is thus able to produce printing resins of the very highest quality. This is achieved by using special dental monomers which form extremely stable three-dimensional networks during the light-curing process.
Consequently, all V-Print products yield homogeneous printed objects with high stability. This homogeneity has multiple advantages. The products do not need to be shaken before printing starts, resin vats are easy to clean, and excellent physical properties of the final printed objects are achieved. Selected raw materials are employed to prevent discoloration of the splint materials, with the result that they are barely visible when worn. This contributes considerably to the success of treatment.
You can benefit from the expertise of a certified manufacturer of dental materials when fabricating your dental workpieces.

Advantages of all V-Print® materials!

TPO free

Ready for use immediately and without shaking – V-Prints are sedimentation-stable
All V-Print printing materials are sedimentation-stable! This means that fillers and dyes do not settle out over time, either in the bottle or, far more importantly, during the printing process. The V-Print bottle does not need to be shaken before use, so no air bubbles enter the material. This allows immediate filling of the vat and start of the printing. Unsupervised printing overnight is possible. The printing process runs reliably from the first step to the last, and the final product properties are reproducible. You can decide when each print job is started and reduce your preparation time. No need to invest in homogenisation equipment because V-Print printing materials do not require time-consuming preparation.

Rapid and reliable printing, including easy cleaning of the vat – optimum flowability
During the development of V-Print materials, the focus was on good final material properties along with good flow properties for an optimal printing process. The flowability of V-Print not only ensures an optimal printing process but also makes it easier to return the material to the bottle if necessary. The developed flow characteristics also make it easier for you to clean the vat with minimum wastage

Safe removal from the build platform – high green strength
The printed objects have yet to be post-cured when removed from the build platform, meaning they have not attained their final physical properties. The high green strength of all objects printed with V-Print is required for safe and deformation-free removal from the build platform.

Fast and cost-effective – post-curing without protective gas
Objects made from V-Print materials can be post-cured without protective gas. One of the aims when developing V-Print was to achieve a high surface quality without the use of protective gas. Fewer working steps means time savings for you. The handling is simpler and the streamlined process saves the expense of nitrogen or a more high-end light polymerisation unit.

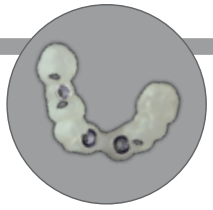
Safe for users and patients alike – thanks to biocompatible dental products
That goes without saying.

You'll love it! – odourless and low-odour
All V-Print printing materials are very low-odour even in their liquid state, which makes their processing very pleasant for the user. You've surely already produced a denture base conventionally from PMMA? Then you'll love digital fabrication with V-Print dentbase.
In their cured state, all objects made from V-Print printing material are completely odourless or very low-odour. This increases customer acceptance and thus treatment success, e.g., in the case of long-term splint therapy.

Overview – V-Print® printing materials

	Colour	Indications	Class
V-Print SG	clear	Dental drilling templates	MD IIa
V-Print splint 2.0	clear	Therapeutic splints Auxiliary parts and functional parts for diagnostics Bleaching splints (home bleaching)	MD IIa
V-Print splint comfort	clear	Therapeutic splints Auxiliary parts and functional parts for diagnostics Bleaching splints (home bleaching) Palatal plates	MD IIa
V-Print dentbase	pink	Removable denture bases	MD IIa
V-Print c&b temp	A1, A2, A3, A3.5, B1, BL	Long-term temporaries like crowns, bridges and mock-ups	MD IIa
V-Print Try-In	beige	Try-ins for full and partial dentures Transfer and grinding templates Correction and occlusal impressions	MD IIa

	Colour	Indications	Class
V-Print tray	green	Individual impression and function trays Bases for bite templates and wax assemblies for full dentures Occlusal registrations	MD I
V-Print IBT	clear	Orthodontic transfer splints for bracket placement	MD I
V-Print model 2.0	beige	Dental working and presentation models	Tec Resin
V-Print cast	blue	Fabrication of objects which can be burned out without leaving any residues for casting processes and pressable ceramics	Tec Resin



V-Print® SG

Light-curing resin for the generative production of dental drilling templates

Indications

Dental drilling templates

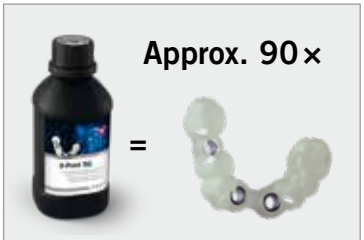
Advantages

- **Classified as MD IIa** – for optimal safety
- **High customer acceptance** – flavourless and odourless
- **Optimum patient safety** – can be steam sterilised at 134°C for 5 minutes before use
- **Dimensionally stable** – perfect fit even after steam sterilisation
- **Biocompatible** – that goes without saying

REF 6043	Bottle 1,000 g clear

Colour	Clear	
Viscosity	1,550 mPa·s	Internal test
Flexural strength	95 MPa*	Equivalent to DIN EN ISO 20795-2
Modulus of elasticity	2,660 MPa*	Equivalent to DIN EN ISO 20795-2
Water absorption	16 µg/mm³*	Equivalent to DIN EN ISO 20795-2
Water solubility	1.9 µg/mm³*	Equivalent to DIN EN ISO 20795-2

(autoclaved 134°C, 5 mins) *see page 16



Depending on object volume, support structures, etc.

Dimensionally stable, steam-sterilised drilling template with accurate fit of drill sleeves

Guided implantation: Medical device class IIa – approved for wound contact

V-Print® splint 2.0

Light-curing resin for the generative production of dental, therapeutic splints

Indications

Therapeutic splints

Auxiliary parts and functional parts for diagnostics

Bleaching splints (home bleaching)

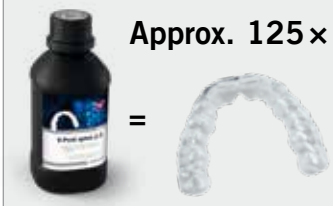
Advantages

- **High overall performance**
- **High impact resistance combined with high flexural strength** – for durable splints
- **No shaking** – V-Print splint 2.0 is ready for immediate use
- **No nitrogen required for post-exposure**
- **Low water absorption and solubility**
- **Easy to polish**
- **Odourless and flavourless**

REF 6124 Bottle 1,000 g clear

Colour	Clear	
Viscosity	2,300 mPa·s	Internal test
Flexural strength	121 MPa*	DIN EN ISO 4049
Impact strength (Izod, unnotched)	408 J/m	Equivalent to ASTM D4812
Water absorption	29 µg/mm³*	Equivalent to DIN EN ISO 20795-2
Water solubility	0.6 µg/mm³*	Equivalent to DIN EN ISO 20795-2

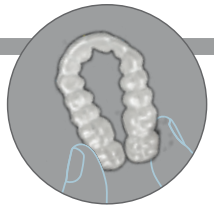
*See page 16



Depending on object volume, support structures, etc.

Splint with support structures

Splint-model combination from 3D printer



V-Print® splint comfort

Light-curing resin for the generative production of thermoflexible dental, therapeutic splints

Indications

Therapeutic splints

Auxiliary and functional parts for diagnostics

Bleaching splints (home bleaching)

Palatal plates

Advantages

- **Highly flexible and abrasion-resistant** – extremely fracture-resistant and durable
- **Thermoflexible and flavourless** – for excellent wearing comfort
- **Transparent** – for hardly visible splints
- **Low-odour and easy to polish** – for pleasant processing
- **Biocompatible and flavourless** – for excellent customer acceptance
- **Classified as MD IIa** – for safety and long-term therapy use

REF 6126 Bottle 1,000 g clear

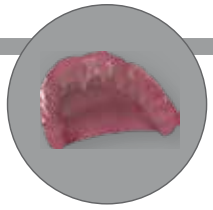
Colour	Clear	
Viscosity	1,250 mPa·s	Internal test
Tensile elongation	46 %*	Equivalent to DIN EN ISO 527
Impact strength (Izod, notched)	62 J/m*	Equivalent to ASTM D256
Shore D	80*	Equivalent to DIN 53505
Water absorption	15 µg/mm³*	Equivalent to DIN EN ISO 20795-2
Water solubility	2.5 µg/mm³*	Equivalent to DIN EN ISO 20795-2

For VOCO/W2P printers, only combinable with PowerVat *See page 16

Very flexible splint from 3D printer

View of bite elevation in anterior region

View of bite elevation in posterior region



V-Print® dentbase

Light-curing resin for the generative production of denture bases for removable dentures

Indications

Removable denture bases

Advantages

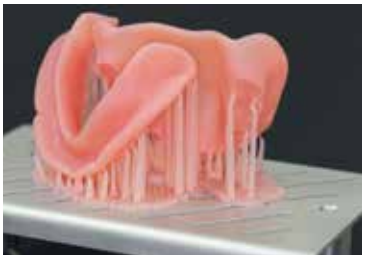
- **Classified as MD IIa** – for safety and long-term use
- **Highly aesthetic** – with natural gingiva Colour
- **High wearing comfort** – thanks to precise, custom-fit fabrication
- **Compatible** – with commercially available lining materials
- **Safe removal from the build platform** – thanks to high green strength
- **Optimal customer acceptance** – flavourless and odourless
- **Biocompatible** – that goes without saying

REF 6048	Bottle 1,000 g pink

Colour	Pink	
Viscosity	1,700 mPa·s	Internal test
Flexural strength	90 MPa*	Equivalent to DIN EN ISO 20795-2
Modulus of elasticity	2,450 MPa*	Equivalent to DIN EN ISO 20795-2
Water absorption	24 µg/mm³*	Equivalent to DIN EN ISO 20795-2
Water solubility	< 0.1 µg/mm³*	Equivalent to DIN EN ISO 20795-2

*See page 16

Depending on object volume, support structures, etc.



Additively fabricated denture bases

Rapid removal of support structures (design possible with SolFlex 3D printers)

Grinding of support attachments and problem areas

V-Print® c&b temp

Light-curing resin for the generative production of highly aesthetic temporaries/long-term temporaries

Indications

Long-term temporaries like crowns, bridges and mock-ups

Advantages

- **High-filled printing material** – especially for long-term application
- **Excellent physical properties**
  - high flexural strength and moduls of elasticity for stable temporaries
  - high abrasion resistance for long wearing time
  - low water absorption and solubility for mechanical stability
  - discolouration resistant – no discolouration with long wearing time
- **Natural fluorescence** – for high aesthetic demands
- **Easy to process and polish**
- **Composite printing material** – quick to characterise or adapt

REF 6897	Bottle 500 g A1
REF 6898	Bottle 500 g A2
REF 6899	Bottle 500 g A3
REF 6900	Bottle 500 g A3.5
REF 6901	Bottle 500 g B1
REF 6902	Bottle 500 g BL

Shades	A1, A2, A3, A3.5, B1, BL	
Viscosity	2,800 mPa·s	Internal test (10 s^{-1} at 23 °C)
Flexural strength	132 MPa*	Equivalent to DIN EN ISO 10477
Modulus of elasticity	4,400 MPa*	Equivalent to DIN EN ISO 178
Water absorption	18 µg/mm^3*	Equivalent to DIN EN ISO 10477
Water solubility	0.7 µg/mm^3*	Equivalent to DIN EN ISO 10477
Vickers hardness (HV1)	24	Internal test

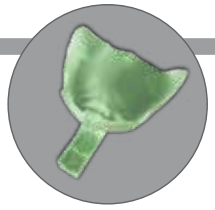
*/**See page 16

Depending on object volume, support structures, etc.

Easy removal of the support structures

Easy to polish

Final prosthetic restoration on printed model



V-Print® tray

Light-curing resin for the generative production of individual trays, base plates and occlusal registrations

Indications

Individual impression and function trays

Bases for bite templates and wax assemblies for full dentures

Occlusal registrations

Advantages

- **Saves time** – printable in high layer thicknesses (up to 200 µm)
- **Distortion-free impressions** – thanks to very strong material
- **Universal** – can be used with all types of impression material
- **Fast and efficient** – object printing including shaping of margins, retention elements and recesses for implant impressions

REF 6039 Bottle 1,000 g green

Colour	Green	
Viscosity	1,500 mPa·s	Internal test
Flexural strength	100 MPa*	Equivalent to DIN EN ISO 178**
Modulus of elasticity	2,720 MPa*	Equivalent to DIN EN ISO 178**

*/**See page 16

Depending on object volume, support structures, etc.

Partial tray printed in thick layers

3D-printed partial tray on printed model

V-Print® Try-In

Light-curing resin for the generative production of try-ins for prosthetics

Indications

Try-ins for full and partial dentures

Transfer and grinding templates

Correction and occlusal impressions

Advantages

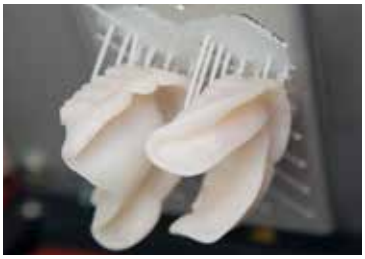
- **Advance checks** – verifying and, if necessary, adapting the fit, occlusion, function, phonation and aesthetics **before** the permanent denture is fabricated

REF 6049 Bottle 1,000 g beige

Colour	Beige	
Viscosity	850 mPa·s	Internal test
Flexural strength	85 MPa*	Equivalent to DIN EN ISO 20795-1
Modulus of elasticity	2,500 MPa*	Equivalent to DIN EN ISO 20795-1
Water absorption	18 µg/mm³*	Equivalent to DIN EN ISO 20795-1
Water solubility	< 0.1 µg/mm³*	Equivalent to DIN EN ISO 20795-1

*See page 16

Depending on object volume, support structures, etc.



Printed monolithic try-in

Try-ins made from V-Print Try-In after polishing – ready for insertion!

Corrective impression-taking with V-Posil Mono Fast is possible

V-Print® IBT

Light-curing resin with a high resilience for the generative production of dental transfer splints

Indication

Orthodontic transfer splints for bracket placement

Advantages

- **No shaking** – V-Print IBT is immediately ready for use
- **Efficient** – virtually planned brackets are bonded precisely, securely and more quickly
- **Treatment on the patient is significantly more ergonomic with indirect bonding**
- **Flexible splint** – increased comfort during application and removal even with strong dysgnathia
- **High resilience** – precise bracket application even with divergent insertion direction

REF 6127 Bottle 1,000 g

Colour	Clear	
Viscosity	1.800 mPa·s	Internal test
Tensile elongation	54 %*	Equivalent to DIN EN ISO 527**
Shore D	43*	Equivalent to DIN 53505

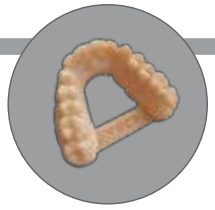
*/**See page 16

Depending on object volume, support structures, etc.

Printed tray for holding the bracket

Applied brackets with V-Print IBT

Partial tray with brackets



V-Print® model 2.0

Light-curing resin for the generative production of dental models

Indications

Dental working and presentation models

Advantages

- **Fast and precise** – optimal fit also with layer thicknesses of 100 µm
- **Precisely grindable** – no unwanted changes on the work-piece (e.g. due to instrumental heat input)
- **Scratch-resistant surface** – high hardness enables fitting without deformation
- **Suitable for thermoforming technique** – precise working, aligner or retainer models from one material without changing the vat

REF 6128	Bottle 1,000 g beige

Colour	Beige	
Viscosity	1,270 mPa·s	Internal test
Flexural strength	96 MPa*	Equivalent to DIN EN ISO 178**
Modulus of elasticity	2,600 MPa*	Equivalent to DIN EN ISO 178**
Surface hardness	19 HV1*	Internal test

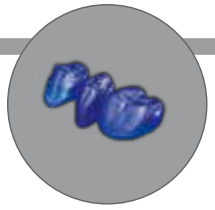
*/**See page 16

Depending on object volume, support structures, etc.

Simple separating cuts without clogging

Scratch-proof for safe trial fitting

Printed model casting for fit check on the dental model



V-Print® cast

Light-curing resin for the generative production of burn-out objects for casting and pressing processes

Indications

Production of objects which can be burned out without leaving any residues for casting processes and press ceramics

Advantages

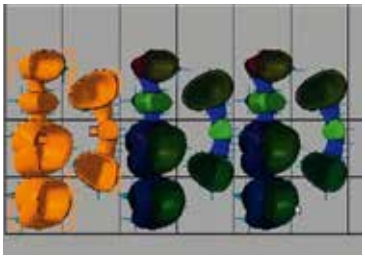
- **Reproducible** – simple duplication before casting
- **Quick finishing** – precision-printed objects give high quaity of reproduction
- **High dimensional stability and edge strength** – reliable checking of the occlusion and lateral movements
- **Finishing at an early stage** – instrument-friendly finishing of objects even in the green state
- **Excellent compatibility** – can be used with commercially available, phosphate-bonded investment materials
- **Restorations free of impurities** – V-Print cast burns out without residues

REF 6045 Bottle 1,000 g blue

Colour	Blue	
Viscosity	1,550 mPa·s	Internal test
Flexural strength	78 MPa*	Equivalent to DIN EN ISO 178**
Modulus of elasticity	2,470 MPa*	Equivalent to DIN EN ISO 178**

*/** See page 16

Depending on object volume, support structures, etc.



Digitally simple duplication of objects

Good grindability without formation of smear film

Printer and material compatibilities for optimum flexibility

Perfect solutions for the digital world of modern dentistry – that's the goal of the Dentalists at VOCO, achieved in cooperation with numerous renowned 3D printer manufacturers. A comprehensive list of printer and material compatibilities can be found at **www.voco.dental/3dprintingpartners**.

VOCO	SolFlex 170 / 170 HD / 350 / 650 / SMP
ACKURETTA	SOL / SOL Plus
ASIGA	MAX UV / PRO 4K / Max 2 / Ultra
formlabs | dental	Form 4B
MICROLAY 3D PRINTERS	Versus
MIICRAFT	Prime150Y / Ultra 125Y / 150Y / Hyper 125Y / Profession 250Y / Alpha
rapidshape	D20 II / D30 II / D40 II / D10+ / D20+ / D30+ / D50+
SHINING 3D DENTAL	AccuFab-L4D / AccuFab CEL
straumann	P20 / P30 / P40 / P10+ / P20+ / P30+ / P50+
W2P	SolFlex 163 HD / 170 / 350 / 650 / Plus

VOCO TRUSTED PARTNER

www.voco.dental/ 3dprintingpartners

Ackuretta, Asiga, Formlabs, Microlay, MiiCraft, rapidshape, Shining 3D, straumann, W2P are not registered trademarks of VOCO GmbH.

General information: The measured values do not represent target values within the scope of the product's continuous quality control.
*Manufacturing note: SolFlex 3D printer / OtoFlash G171. Other approved printers/post-curing units may differ slightly.
**Test specimen dimensions 80.0 x 4.0 x 10.0 mm

VOCO GmbH
Anton-Flettner-Straße 1-3
27472 Cuxhaven
Germany

Freecall: 00 800 44 444 555
Fax: +49 (0) 4721-719-2931

info@voco.com
www.voco.dental

Available from: