



DES POSSIBILITÉS ILLIMITÉES POUR DES MATÉRIAUX PREMIUM

PRODWAYS

MATERIALS



Matières PLASTCure

WWW.PRODWAYS.COM

UNE MULTITUDE DE POSSIBILITÉS

La polymérisation UV à une longueur d'ondes de 365 nanomètres de matières liquides et composites sous forme de pâte **fortement chargées en céramique, métal, fibre ou nanoparticules** ouvre à Prodways de nouvelles voies pour développer des applications dont les propriétés mécaniques sont **inabordées à ce jour dans la fabrication additive**.

DES MATIÈRES BIOCOMPATIBLES, HYBRIDES ET COMPOSITES INNOVANTES

Prodways intègre au **cœur de son savoir-faire** la création de matériaux d'impression de fabrication additive **hybrides, composites et premium** de haute performance en termes de **propriétés mécaniques** (résistance et élasticité), **physiques et esthétiques** (couleur et transparence) et **de stabilité dans le temps**.

Grâce à des **partenariats industriels** et R&D, Prodways offre et développe continuellement des matériaux premium dont **les hautes performances** permettent d'imaginer de nouvelles applications **particulièrement prometteuses pour le monde industriel**.



MATIÈRES COMPATIBLES AVEC LES ProMaker Série L

Les matières PLASTCure ont été développées pour vous offrir la combinaison ProMaker-PLASTCure optimale pour votre application. De forts partenariats nous permettent de répondre aux exigences les plus extrêmes pour un large éventail d'applications et d'industries.

	PLASTCure Model 100	PLASTCure Model 200 *	PLASTCure Model 300 *	PLASTCure Clear 100	PLASTCure Cast 100	PLASTCure Cast 200 *	PLASTCure Flex 100	PLASTCure Rigid 10 500 *	PLASTCure ABS 3650 *
Appearance	Mat Opaque beige Mat opaque ivory	Hazy orange - skin color	Orange mat	Clear transparent - available in other colours	Red or transparent	Orange	Pink or clear transparent	Off-White	Translucent
Density (g/cm3) @ 25°C	1.1 - 1.2	1.0 - 1.2	1.1 - 1.2	1.1 - 1.2	1.1 - 1.2	1.1 - 1.2	1.1 - 1.2	1.5 - 1.6	1.15 - 1.2
Viscosity (mPa.s) @ 23°C	1150 - 1400	500 - 600	2300 - 2500	1000 - 1200	150 - 200	350 - 450	700 - 900	900 - 1100	150 - 400
Hardness Shore D	80 - 84	81 - 85	80 - 85	80 - 84	81 - 85	80 - 85	23°C: 70 - 80 Shore A 37°C: 50 - 70 Shore A	92 - 96	84 - 85
Tensile Strength (MPa)	N.A.	55 - 80 (ASTM D638)	N.A.	N.A.	N.A.	N.A.	6 - 10	38 - 42 (ASTM D638)	49 - 56 (ASTM D638)
Elongation @ break (%)	8 - 10	0.5 - 1.5 (ASTM D638)	1.2 - 2 (ASTM D638)	8 - 10	N.A.	1 - 5	90 - 95	0.5 - 1 (ASTM D638)	4 - 8 (ASTM D638)
Tensile Modulus (MPa)	N.A.	1900 - 2000 (ASTM D638)	1900 - 2100 (ASTM D638)	N.A.	N.A.	1800 - 2800	N.A.	10 000 - 11000 (ASTM D638)	3550 - 3650 (ASTM D638)
Tear Strength (N.mm ⁻¹)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	20 - 25	N.A.	N.A.
Cauterisation	Not relevant	Not relevant	Not relevant	Not relevant	Residual ash content <2% (at 470°C)	Residual ash content <0,1%	Not relevant	Not relevant	Not relevant
Flexural Strength (MPa)	90 - 115	N.A.	95 - 130 (ASTM D790)	90 - 115	81 - 85 (ASTM D790)	80 - 90	N.A.	145 - 155 (ASTM D790)	80 - 85 (ASTM D790)
Flexural Modulus (MPa)	1700 - 2200	1800 - 2100 (ASTM D790)	2150 - 2400 (ASTM D790)	1700 - 2200	2900 - 2950 (ASTM D790)	2200 - 3200	N.A.	10 000 - 11000 (ASTM D790)	2,300 - 2,500 (ASTM D790)
Notched Izod Impact (J/m)	N.A.	10 - 15 (ASTM D256)	N.A.	N.A.	N.A.	N.A.	N.A.	15 - 20 (ASTM D256)	14 - 26 (ASTM D256)
HDT @ 0.46 MPa (66 psi) (°C)	N.A.	90 - 100 (ISO 75-2)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	55 - 58 (ISO 75-2)
Biocompatibility	N.A.	N.A.	N.A.	DIN ISO 10993 - 5 DIN ISO 10993 - 10	N.A.	N.A.	DIN ISO 10993	N.A.	N.A.
Specification	<ul style="list-style-type: none"> • Easy to elaborate • High precision of the components • Quality look & feel • High workability 	<ul style="list-style-type: none"> • High temperature resistance • Smooth surfaces • Easy cleaning 	<ul style="list-style-type: none"> • High accuracy and excellent resolution • Ability to produce sharp edges and detailed parts • High green strength and good mechanical properties 	<ul style="list-style-type: none"> • Ultra clear material • Transparency • End products are biocompatible • Meet criteria regarding irritation, sensitisation and cytotoxicity for biological assessment of medical products (DIN ISO 10993) • Can be steam sterilised over longer period (>15 min.) 	<ul style="list-style-type: none"> • High reactivity & low viscosity • High green strength, excellent dimensional stability • Excellent burn out properties and low residue content • Can be placed directly into 800°C 	<ul style="list-style-type: none"> • Good reactivity and low viscosity • High accuracy • Ability to produce sharp edges parts • Outstanding burnout properties with nearly zero ash content 	<ul style="list-style-type: none"> • Unique flexible properties • High workability • End products are biocompatible • Meet criteria regarding irritation and cytotoxicity for biological assessment of medical products (DIN ISO 10993) 	<ul style="list-style-type: none"> • Excellent detail resolution & sidewall quality • Easy finishing • Superior thermomechanical properties 	<ul style="list-style-type: none"> • Good chemical resistance • High transparency • Fast & adaptable material to a wide broad of building conditions • May not require manual finishing
Typical application examples	Whole range of dental model applications from models for restorations to orthodontic applications	Models for thermoforming applications	Broad range of dental model applications	Wide range of medical application such like surgical patterns or operation models	Fulfills the high demands placed on the digital process chain	Highly suitable for direct investment casting or dental applications	Suitable for the manufacture of flexible objects for use in medical technology. Representation of the red and white aesthetics in a generatively fabricated dental model	Suitable for the manufacture of parts that require thermal stability, extreme accuracy and quick turnaround. Exceptional for parts that are designed for wind tunnel testing and unique application in rapid tooling or high temperature testing, electrical casings, automotive housings	Ideal for segments such like medical, electronic, aerospace and automotive markets that demand accurate RTV patterns, durable concept models, highly accurate and humidity & temperature resistant parts
By	Dreve	Prodways Material	Prodways Material	Dreve	Dreve	Prodways Material	Dreve	DSM Somos	DSM Somos

*Preliminary data. Performance characteristics of these materials may change according to product application, operating conditions, material combined or end use.



MATIÈRES COMPATIBLES AVEC LES ProMaker Série V

	PLASTCure Rigid 9500 *	PLASTCure Zirconia	PLASTCure Hydroxyapatite	PLASTCure Alumina	PLASTCure Tricalcium phosphate
Specification	<ul style="list-style-type: none"> • Material for direct fabrication of composite parts • High Mechanical resistance • Easy workability 	<ul style="list-style-type: none"> • Good mechanical strength to high temperature • Low thermal conductivity to ambient temperature • Electrical conductor up to 1000°C • High Hardness • Wear resistance • Chemical inertness • Resistance to molten metals 	<ul style="list-style-type: none"> • Close to bone's chemical structure • Biocompatible • Osteoconductive • Good mechanical properties • Non-resorbable 	<ul style="list-style-type: none"> • Good mechanical strength to high temperature • Good thermal conductivity • High electrical resistivity • High hardness • Wear resistant • Good chemical stability 	<ul style="list-style-type: none"> • Osteoconductive • Resorbable • Close to bone's chemical structure • Biocompatible • Good mechanical properties
Typical application examples	<ul style="list-style-type: none"> • Tooling • Wide range of industrial applications requiring high mechanical resistance 	<ul style="list-style-type: none"> • Crucibles • Nozzle casting • Heating element • Anti-thermal coating • Ion-conducting materials 	<ul style="list-style-type: none"> • Bone substitutes • Reconstructive surgery • PLASTCure Hydroxyapatite and PLASTCure Phosphate Tricalcium are commonly used in combination to achieve a good balance between resorbability and bone growth. 	<ul style="list-style-type: none"> • High temperature electrical insulators • Support of heating element • Grinding media • Mechanical component • Oil-seal 	<ul style="list-style-type: none"> • Bone substitutes • PLASTCure Hydroxyapatite and PLASTCure Phosphate Tricalcium are commonly used in combination to achieve a good balance between resorbability and bone growth.
By	Prodways Material	3D Ceram	3D Ceram	3D Ceram	3D Ceram

*Preliminary data. Performance characteristics of these materials may change according to product application, operating conditions, material combined or end use.



ZI Les Garennes - 1-3, rue Chappe 78130 les Mureaux
Tél.: +33 (0)1 30 90 44 12 - contact@prodways.com - www.prodways.com

Création: rouge202.com - Photos: ©Prodways - ©Thinkstock - ©Shutterstock

©Prodways 2014 - Les informations de ce document ne sont pas contractuelles et ne peuvent être reproduites sans l'accord de Prodways.

