

# PolyJet™ Dental Materials

## Advanced materials for superior digital dentistry and orthodontics.

The Stratasys Dental Series 3D printers use the superior accuracy, high precision and dimensional stability of PolyJet materials to create a range of dental appliances, restorations and models with consistency and exactness.

### Clear Biocompatible (MED610™)

Transparent, bio-compatible material that is medically approved for temporary in-mouth placement.

Ideal for: Orthodontic appliances, delivery and positioning trays and surgical guides

### Flexible Biocompatible (MED625FLX™)

Flexible, biocompatible material that is certified for temporary in-mouth placement.

Ideal for: Orthodontic indirect bonding trays and implant gingival masks

### Biocompatible VeroGlaze™ (MED620™)

Opaque white material with A2 shading designed to provide the best color match in the industry. VeroGlaze is medically approved for temporary in-mouth placement up to 24 hours.

Ideal for: Veneer try-ins and diagnostic wax-ups

### SUP711™

Gel like SUP711™ support material was specially designed to uphold overhangs and complicated geometries on DentaJet Series 3D printing LED curing process.

## Triple-Jetting technology

In addition, standard 3D printing materials provide composites with these advanced features: Gum-like textures, range of colors to represent natural tooth and gum shades, ability to render anatomy such as nerve canal, jaw and teeth in contrasting materials, all in one print

Property	Standard/ Procedure	Clear Biocompatible MED610	Biocompatible VeroGlaze MED620
Tensile Strength (MPa)	D-638-03	50 – 65	55 – 65
Elongation at break (%)	D-638-05	10 – 25	15 – 25
Modulus of elasticity (MPa)	D-638-04	2,000 – 3,000	2,300 – 3,300
Flexural Strength (MPa)	D-790-03	75 – 110	80 – 100
Flexural Modulus (MPa)	D-790-04	2,200 – 3,200	2,300 – 3,200
HDT 0.45 MPa (°C)	D-648-06	45 – 50	45 – 50
HDT 1.82 MPa (°C)	D-648-07	45 – 50	45 – 50
Izod Notched Impact (J/M)	D-256-06	20 – 30	20 – 30
Water Absorption (%)	D-570-98 24HR	1.1 – 1.5	.1 – 1.5
Tg (°C)	DMA E	52 – 54	52 – 54
Shore Hardness (D)	Scale D	83 – 86	83 – 86
Rockwell Hardness (scale M)	Scale M	73 – 76	73 – 76
Polymerized density (gr/cm³)	ASTM D792	1.17 – 1.18	1.17 – 1.18
Bio-compatibility	DIN EN ISO 10993-1:2009	Approved	Approved
Support Removal Type	–	WaterJet	WaterJet or soluble*

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Property	Standard/ Procedure	MED625FLX
Tensile Strength (MPa)	D-412	3 – 5
Elongation at break (%)	D-412	45 – 55%
Compressive Set (%)	D-395	0.5 – 1.5%
Shore Hardness (Scale A)	D-2240	73 – 77
Tensile Tear Resistance (kg/cm)	D-624	8 – 12
Polymerized density (gr/cm <sup>3</sup> )	D-792	1.16 – 1.17 g/cm <sup>3</sup>
Bio-compatibility	EN ISO 10993-1	Approved
Support Removal Type	–	WaterJet

For detailed material specifications of non-dental materials, please see the PolyJet Materials Data Sheet. All data provided herein, which is related to consumables, was collected from specific specimens and test conditions and is provided for information only. Characteristics may vary if different specimens and test conditions are applied. Unless expressly provided in writing, no warranties are made and warranties of merchantability or fitness for a particular purpose are expressly disclaimed.

\*Soluble support is available on the Eden260VS Dental Advantage™, Objet260 Dental™ and Objet260/500 Dental Selection™. No full bio-compatibility on soluble support.

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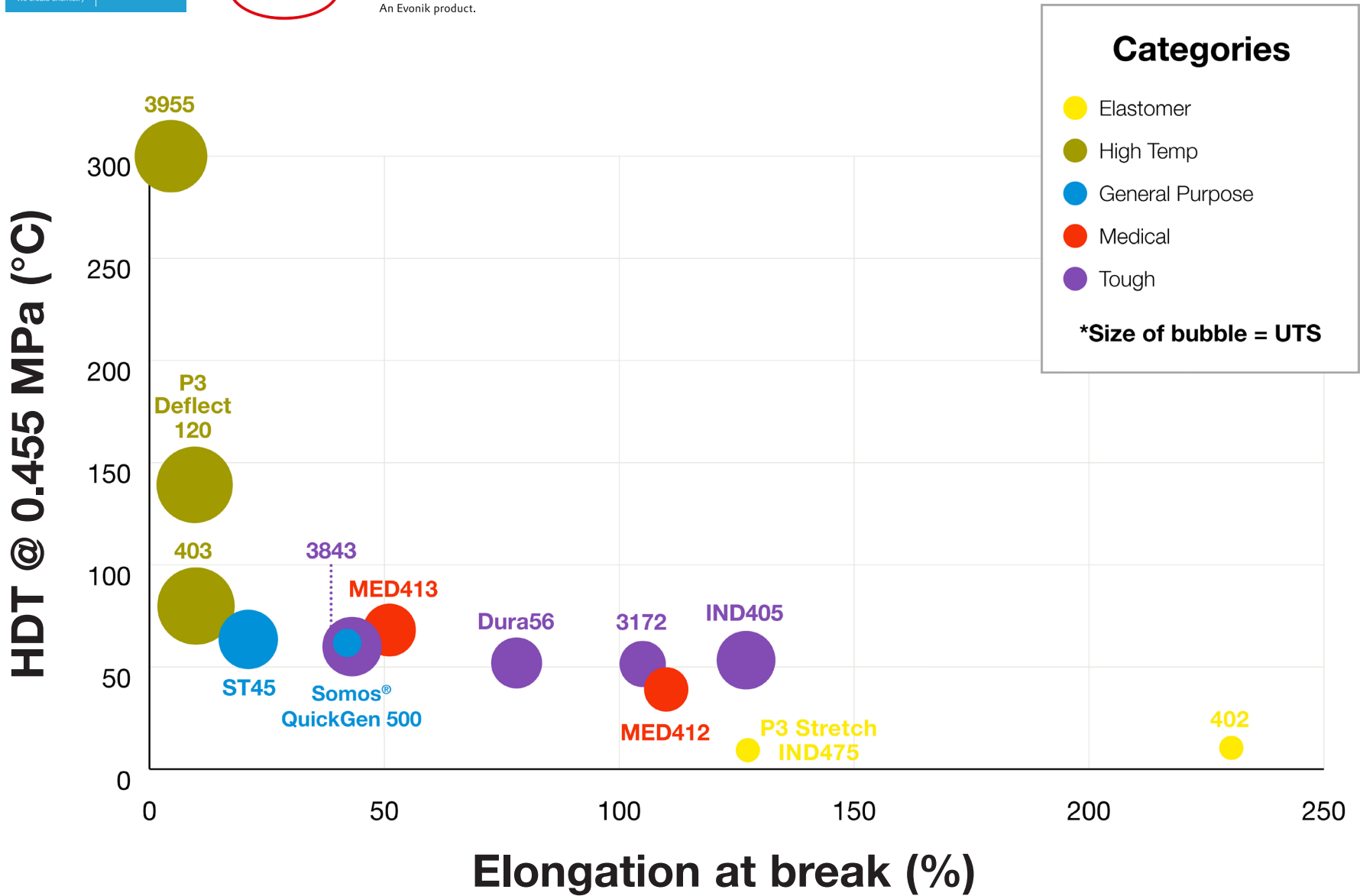
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# Origin® One Validated Materials Overview



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Material name	Description	Categories	Ultimate tensile strength	Elongation at break	Tensile modulus	HDT	Notched izod impact	Hardness	Colors	Consider replacing	Partner page
3955	Very high temperature, high stiffness FST	●	67 MPa	2.10%	<b>3556 MPa</b>	<b>&gt; 300 °C</b>	23 J/m	84 D	Black	Ultem, phenolic, PBT, aluminum	<a href="#">LOCTITE AM</a>
<b>P3 Deflect 120</b>	High temperature resistance and rigid material with good elongation at break	●	<b>100 MPa</b>	4%	3000 MPa	121 °C	15 J/m	<b>88 D</b>	Black	Nylon 6, PBT	<a href="#">EVONIK</a>
403	High strength, stiffness, and good HDT	●	72 MPa	10%	2572 MPa	80 °C	27 J/m	81 D	Black	Nylon 6/6	<a href="#">LOCTITE AM</a>
3843	Versatile, good all-around engineering polymer	●	53 MPa	43%	1806 MPa	60 °C	53 J/m	74 D	Black, Clear, White	ABS, delrin, polypropylene	<a href="#">LOCTITE AM</a>
<b>Dura56</b>	Durable, impact-resistant, exceptional surface finish, low cost per kg	●	44 MPa	78%	1595 MPa	52 °C	56 J/m	72 D	Black	ABS, delrin, polypropylene	<a href="#">TDS</a>
3172	Moderately flexible, ductile, great impact strength	●	39 MPa	105%	1494 MPa	51 °C	<b>73 J/m</b>	72 D	Cyan, Grey	Impact modified polypropylene, nylon 6, HDPE	<a href="#">LOCTITE AM</a>
<b>IND405</b>	Clear, moderately flexible, ductile, great impact strength	●	52 MPa	127%	1378 MPa	53 °C	72 J/m	79 D	Clear	Impact modified polypropylene, nylon 6, HDPE	<a href="#">LOCTITE AM</a>
<b>ST45</b>	Versatile, good all-around engineering polymer	●	53 MPa	21%	2000 MPa	63 °C	20 J/m	81 D	Black, Clear	ABS, delrin	<a href="#">BASF Forward AM</a>
<b>Somos QuickGen 500</b>	Uniquely flexible engineering material with great impact strength	●	20 MPa	42%	465 MPa	62 °C (Tg)	70 J/m	76 D	Clear	LDPE	
402	TPU-like elastomer with good tear strength and elongation at break	●	5.5 MPa	<b>230%</b>	42 MPa	--	--	75-90 A	Black	70-90 A TPU, flexible foam	<a href="#">LOCTITE AM</a>
<b>P3 Stretch 475</b>	Resilient, low shore hardness elastomer with good tear strength	●	2.4 MPa	122%	2.5 MPa	--	--	49 A, 45 A (0s, 5s)	Black	Low durometer TPU	<a href="#">LOCTITE AM</a>
<b>MED412</b>	Moderately flexible, ductile, great impact strength	●	37 MPa	110%	1305 MPa	39 °C	50 J/m	78 D	Clear	Medical-grade polypropylene	<a href="#">LOCTITE AM</a>
<b>MED413</b>	Versatile engineering medical grade material	●	46 MPa	51%	1673 MPa	68 °C	59 J/m	79 D	Clear, White	Medical-grade ABS	<a href="#">LOCTITE AM</a>

\*Bold blue values = Highest value in it's category. Material categories: ●Elastomer ●High temp ●General purpose ●Medical ●Tough

Material name	Temperature resistance	Flame	Chemical resistance	UV stability	Dielectric strength	Low water absorption	Strength	Stiffness	Toughness	Biocompatibility testing	Print speed	Material cost
3955	Strong	Strong	Refer to data sheet	Good	Strong	-	Strong	Strong	Low	-	Strong	\$\$\$
403	Strong	-	-	Good	Strong	-	Strong	Strong	Low	-	Good	\$\$
3843	Good	-	Refer to data sheet	Good	Strong	Good	Good	Good	Good	Cyto, irritation	Good	\$\$
Dura56	Low	-	-	Good	-	Low	Good	Good	Strong	-	Good	\$
3172	Low	-	-	Good	-	Good	Good	Good	Strong	Cyto, irritation	Good	\$\$
IND405	Low	-	-	Good	-	Good	Good	Good	Strong	Cyto, irritation	Good	\$\$
ST45	Good	Good	-	Good	Strong	-	Good	Strong	Low	Cyto, irritation, sensitization	Strong	\$
QG 500	Good	-	-	Good	-	Strong	Low	Low	Strong	-	Strong	\$\$
402	-	-	Refer to data sheet	Good	-	Low	Low	Low	-	Irritation	Low	\$\$
MED412	Low	-	-	Good	-	Strong	Good	Good	Good	Cyto, irritation, sensitization	Good	\$\$\$
MED413	Good	-	-	Good	-	Low	Good	Good	Strong	Cyto, irritation, sensitization	Good	\$\$\$
P3 Deflect 120	Strong	TBD	TBD	TBD	TBD	Strong	Strong	Strong	Low	TBD	Strong	\$\$
P3 Stretch 475	-	-	TBD	TBD	Strong	Low	Low	Low	-	TBD	Strong	\$\$

\*- = Data unavailable

Note: This guide should be used to compare Origin certified materials with each other. Please refer to individual material data sheets for more info.