

## FullCure<sup>®</sup> Materials

### Support Your Application

- Choice of materials enables a wide variety of applications
- Excellent surface smoothness and fine details of the cured model
- Instant curing models ready to use
- Diversified Finishing
- Environmental Safety
- Easy to remove gel-like support material for all modeling materials

# Materials



## Support your Applications

Objet's FullCure® Materials family of proprietary acrylic-based photopolymer materials enables Objet users to create highly accurate, finely detailed 3D models and parts for a wide range of Rapid Prototyping and Rapid Manufacturing applications. Based on Objet PolyJet™ Technology, FullCure materials produce fully cured models that can be handled immediately after being built. The wide variety of materials within the FullCure materials family, including transparent, colored, opaque, flexible and rigid properties, enables models that meet a wide range of fit, form, and functional requirements. FullCure Support material, used in combination with any FullCure Model material enables models with an unlimited array of complex geometries, including overhangs and undercuts. This gel-like support material, is easily removed with a water-jet or by hand. FullCure materials are environmentally safe, delivered in fully sealed 2kg or 3.6kg cartridges. In addition, Tango family materials as well as DurusWhite are also provided in 1.44kg in 3.6kg casing.

Based on PolyJet Matrix™ Technology, that is utilized on Connex family multi material 3D printers, FullCure materials are used in specific concentrations and structures to generate composite Digital Materials™ with improved mechanical and thermal properties.

FullCure model materials currently include the following families:

### General Purpose Family

Transparent - FullCure720 General-purpose transparent material, offering excellent properties including Tensile Strength of 60 MPa, Flexural Strength of 76MPa and HDT at 0.45MPa of 48C

## General Purpose

### FullCure720

Property	ASTM	Metric		Imperial	
		MPa		psi	
Tensile Strength	D-638-03	MPa	60	psi	8744
Modulus of Elasticity	D-638-04	MPa	2870	psi	416150
Elongation at Break	D-638-05	%	20	%	20
Flexural Strength	D-790-03	MPa	76	psi	10991
Flexural Modulus	D-790-04	MPa	1718	psi	249110
Izod Notched Impact	D-256-06	J/m	24	ft lb/in	0.4
Shore Hardness	Scale D	Scale D	83	Scale D	83
Rockwell Hardness	Scale M	Scale M	81	Scale M	81
HDT at 0.45 MPa	D-648-06	°C	48	°F	119
HDT at 1.82 MPa	D-648-07	°C	44	°F	112
Tg	DMA, E"	°C	49	°F	120
Ash Content	NA	%	<0.03	%	<0.03
Water Absorption	D570-98 24 Hr	%	1.53	%	1.53

## Durus

### DurusWhite - FullCure430

Property	ASTM	Metric		Imperial	
		MPa		psi	
Tensile Strength	D-638-03	MPa	21	psi	3089
Modulus of Elasticity	D-638-04	MPa	1136	psi	164691
Elongation at Break	D-638-05	%	44	%	44
Flexural Strength	D-790-03	MPa	33	psi	4814
Flexural Modulus	D-790-04	MPa	1026	psi	148785
Izod Notched Impact	D-256-06	J/m	44	ft lb/in	0.83
Shore Hardness	D-2240-03	Scale D	76	Scale D	76
Rockwell Hardness	D-785-03	Scale M	97	Scale M	97
HDT at 0.45 MPa	D-648-06	°C	36	°F	98
HDT at 1.82 MPa	D-648-07	°C	33	°F	91
Tg	DMA, E"	°C	36	°F	97
Ash Content	NA	%	<0.2	%	<0.2
Water Absorption	D570-98 24 Hr	%	1.7	%	1.7



\*See Objet Hearing Aid brochure



## Durus Family

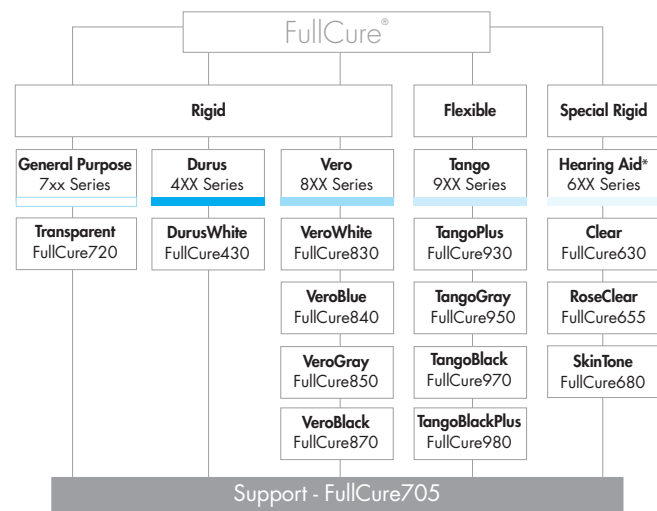
DurusWhite, FullCure430 Polypropylene-like Material addressing a broad range of applications requiring polypropylene-like appearance, flexibility, strength and toughness. Properties include Izod Notched Impact of 44 J/m, Elongation at break of 44% and Flexural Modulus of 1026 MPa.

## Vero Family

Opaque rigid materials offering toughness, dimensional stability and great detail visualization

## Tango Family

Rubber like flexible materials with various levels of elasticity: Elongation at break of 47% and 218%, Hardness Shore scale A values of 27, 61 and 75.



Support - FullCure705

**VeroWhite - FullCure830**

Property	ASTM	Metric		Imperial	
Tensile Strength	D-638-03	MPa	50	psi	7221
Modulus of Elasticity	D-638-04	MPa	2495	psi	361775
Elongation at Break	D-638-05	%	20	%	20
Flexural Strength	D-790-03	MPa	75	psi	10817
Flexural Modulus	D-790-04	MPa	2137	psi	309865
Izod Notched Impact	D-256-06	J/m	24	ft lb/in	0.45
Shore Hardness	Scale D	Scale D	83	Scale D	83
Rockwell Hardness	Scale M	Scale M	81	Scale M	81
HDT at 0.45 MPa	D-648-06	°C	43	°F	109
HDT at 1.82 MPa	D-648-07	°C	40	°F	104
Tg	DMA, E"	°C	58	°F	136
Ash Content	USP 28	%	<0.3	%	<0.3
Water Absorption	D570-98 24 Hr	%	1.15	%	1.15



**VeroBlue - FullCure840**

Property	ASTM	Metric		Imperial	
Tensile Strength	D-638-03	MPa	55	psi	7990
Modulus of Elasticity	D-638-04	MPa	2740	psi	397300
Elongation at Break	D-638-05	%	20	%	20
Flexural Strength	D-790-03	MPa	84	psi	12122
Flexural Modulus	D-790-04	MPa	1983	psi	287535
Izod Notched Impact	D-256-06	J/m	24	ft lb/in	0.4
Shore Hardness	Scale D	Scale D	83	Scale D	83
Rockwell Hardness	Scale M	Scale M	81	Scale M	81
HDT at 0.45 MPa	D-648-06	°C	49	°F	120
HDT at 1.82 MPa	D-648-07	°C	45	°F	113
Tg	DMA, E"	°C	49	°F	120
Ash Content	USP 28	%	<0.3	%	<0.3
Water Absorption	D570-98 24 Hr	%	1.5	%	1.5



**VeroGray - FullCure850**

Property	ASTM	Metric		Imperial	
Tensile Strength	D-638-03	MPa	60	psi	8700
Modulus of Elasticity	D-638-04	MPa	3000	psi	435000
Elongation at Break	D-638-05	%	15	%	1.5
Flexural Strength	D-790-03	MPa	95	psi	13775
Flexural Modulus	D-790-04	MPa	3000	psi	435000
Izod Notched Impact	D-256-06	J/m	25	ft lb/in	0.5
Shore Hardness	Scale D	Scale D	86	Scale D	86
Rockwell Hardness	Scale M	Scale M	49	Scale M	49
HDT at 0.45 MPa	D-648-06	°C	49	°F	120
HDT at 1.82 MPa	D-648-07	°C	47	°F	117
Tg	DMA, E"	°C	56	°F	134
Ash Content	USP 28	%	0.3	%	0.3
Water Absorption	D570-98 24 Hr	%	1.1	%	1.1



**VeroBlack - FullCure870**

Property	ASTM	Metric		Imperial	
Tensile Strength	D-638-03	MPa	51	psi	7352
Modulus of Elasticity	D-638-04	MPa	2192	psi	317840
Elongation at Break	D-638-05	%	18	%	18
Flexural Strength	D-790-03	MPa	80	psi	11542
Flexural Modulus	D-790-04	MPa	2276	psi	330020
Izod Notched Impact	D-256-06	J/m	24	ft lb/in	0.45
Shore Hardness	Scale D	Scale D	83	Scale D	83
Rockwell Hardness	Scale M	Scale M	81	Scale M	81
HDT at 0.45 MPa	D-648-06	°C	47	°F	117
HDT at 1.82 MPa	D-648-07	°C	43	°F	109
Tg	DMA, E"	°C	63	°F	145
Ash Content	USP 28	%	0.005	%	0.005
Water Absorption	D570-98 24 Hr	%	1	%	1



## Tango

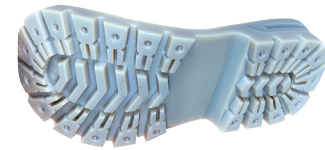
### TangoPlus - FullCure930 / TangoBlackPlus - FullCure980

Property	ASTM	Metric		Imperial	
Tensile Strength at Break	D-412	MPa	1.5	psi	211
Modulus of Elasticity at 20% Strain	D-413	MPa	0.1	psi	21
Modulus of Elasticity at 30% Strain	D-414	MPa	0.2	psi	27
Modulus of Elasticity at 50% Strain	D-415	MPa	0.3	psi	38
Elongation at Break	D-412	%	218	%	218.0
Compressive Set	D-395	%	4	%	4.4
Shore A Hardness	D-2240	Scale A	27	Scale A	27
Ross Flex	D-1052		Above 150,000		Above 150,000
Tensile Tear Resistance	D-624	Kg/cm	3	Lb/in	20
Tg	DSC (-80°C+100°C)	°C	-10	°F	15



### TangoGray - FullCure950

Property	ASTM	Metric		Imperial	
Tensile Strength	D-412	MPa	4	psi	632
Elongation at Break	D-412	%	47	%	47
Compressive Set	D-395	%	1	%	1
Shore A Hardness	D-2240	Scale A	75	Scale A	75
Tensile Tear Resistance	D-624	Kg/cm	10	Lb/in	54
Tg	DSC (-80°C+100°C)	°C	3	°F	37



### TangoBlack - FullCure970

Property	ASTM	Metric		Imperial	
Tensile Strength	D-412	MPa	2	psi	290
Elongation at Break	D-412	%	48	%	48
Compressive Set	D-395	%	1	%	1
Shore A Hardness	D-2240	Scale A	61	Scale A	61
Tensile Tear Resistance	D-624	Kg/cm	4	Lb/in	21
Tg	DSC (-80°C+100°C)	°C	-11	°F	13



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### About Objet Geometries

Objet Geometries Ltd., the innovation leader in 3D printing, develops, manufactures and globally markets ultra-thin-layer, high-resolution 3-dimensional printing systems and materials that utilize PolyJet™ polymer jetting technology, to print ultra-thin 16-micron layers.

The market-proven Eden™ line of 3D Printing Systems and the Alaris™30 3D desktop printer are based on Objet's patented office-friendly PolyJet™ Technology. The Connex™ family is based on Objet's PolyJet Matrix™ Technology, which jets multiple model materials simultaneously and creates composite Digital Materials™ on the fly. All Objet systems use Objet's FullCure® materials to create accurate, clean, smooth, and highly detailed 3D parts.

Objet's solutions enable manufacturers and industrial designers to reduce cost of product development and dramatically shorten time-to-market of new products. Objet systems are in use by world leaders in many industries, such as Education, Medical / Medical Devices & Dental, Consumer Electronics, Automotive, Toys, Consumer Goods, and Footwear industries in North America, Europe, Asia, Australia, and Japan.

Founded in 1998, Objet serves its growing worldwide customer base through offices in USA, Mexico, Europe, Japan, China and Hong Kong, and a global network of distribution partners. Objet owns more than 50 patents and patent pending inventions. Visit [www.objet.com](http://www.objet.com).

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