

PolyJet Materials

Data Sheet



Materials Simulating Engineering Plastics

Digital Materials

Digital ABSPlus, Green (RGD5160-DM, RGD5161-DM) made of RGD515 Plus & RGD535 Digital ABS Plus, Ivory (RGD5130-DM, RGD5131-DM) made of RGD515 Plus & RGD531

	ASTM	Units	Value
Tensile strength	D-638-03	MPa (psi)	55-60 (8000-8700)
Elongation at break	D-638-05	% (%)	25-40 (25-40)
Modulus of elasticity	D-638-04	MPa (psi)	2600-3000 (375,000-435,000)
Flexural Strength	D-790-03	MPa (psi)	65-75 (9,500-11,000)
Flexural Modulus	D-790-04	MPa (psi)	1700-2200 (245,000-320,000)
HDT, oC @ 0.45MPa	D-648-06	°C (°F)	58-68 (136-154)
HDT, oC @ 0.45MPa after thermal post treatment procedure A	D-648-06	°C (°F)	82-90 (180-194)
HDT, oC @ 0.45MPa after thermal post treatment procedure B	D-648-06	°C (°F)	92-95 (198-203)
HDT, oC @ 1.82MPa	D-648-07	°C (°F)	51-55 (124-131)
Izod Notched Impact	D-256-06	J/m (ft lb/inch)	90-115 (1.69-2.15)
Tg	DMA, E ₂	°C (°F)	47-53 (117-127)
Shore Hardness (D)	Scale D	Scale D (Scale D)	85-87 (85-87)
Rockwell Hardness	Scale M	Scale M (Scale M)	67-69 (67-69)
Polymerized density	ASTM D792	g/cm ³ (---)	1.17-1.18 (---)

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High Temperature Material

RGD525

	ASTM	Units	Value
Tensile strength	D-638-03	MPa (psi)	70-80 (10,000-11,500)
Elongation at break	D-638-05	% (%)	10-15 (10-15)
Modulus of elasticity	D-638-04	MPa (psi)	3200-3500 (465,000-510,000)
Flexural Strength	D-790-03	MPa (psi)	110-130 (16,000-19,000)
Flexural Modulus	D-790-04	MPa (psi)	3100-3500 (450,000-510,000)
HDT, oC @ 0.45MPa	D-648-06	°C (°F)	63-67 (145-163)
HDT, oC @ 0.45MPa after thermal post treatment procedure A	D-648-06	°C (°F)	75-80 (167-176)
HDT, oC @ 1.82MPa	D-648-07	°C (°F)	55-57 (131-135)
Izod Notched Impact	D-256-06	J/m (ft lb/inch)	14-16 (0.262-0.300)
Water Absorbtion, %	D-570-98 24hr	% (%)	1.2-1.4 (1.2-1.4)
Tg	DMA, E ₂	°C (°F)	62-65 (144-149)
Shore Hardness (D)	Scale D	Scale D (Scale D)	87-88 (87-88)
Rockwell Hardness	Scale M	Scale M (Scale M)	78-83 (78-83)
Polymerized density	ASTM D792	g/cm ³ (--)	1.17-1.18 (--)
Ash content	USP281	% (%)	0.38-0.42 (0.38-0.42)

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MATERIALS SIMULATING STANDARD PLASTICS

Rigid Opaque Materials

Veroblue RGD840

	ASTM	Units	Value
Tensile strength	D-638-03	MPa (psi)	50-60 (7250-8700)
Elongation at break	D-638-05	% (%)	15-25 (15-25)
Modulus of elasticity	D-638-04	MPa (psi)	2000-3000 (290,000-435,000)
Flexural Strength	D-790-03	MPa (psi)	60-70 (8700-10200)
Flexural Modulus	D-790-04	MPa (psi)	1900-2500 (265,000-365,000)
HDT, oC @ 0.45MPa	D-648-06	°C (°F)	45-50 (113-122)
HDT, oC @ 1.82MPa	D-648-07	°C (°F)	45-50 (113-122)
Izod Notched Impact	D-256-06	J/m (ft lb/inch)	20-30 (0.375-0.562)
Water Absorbtion, %	D-570-98 24hr	% (%)	1.5-2.2 (1.5-2.2)
Tg	DMA, E ₂	°C (°F)	48-50 (118-122)
Shore Hardness (D)	Scale D	Scale D (Scale D)	83-86 (83-86)
Rockwell Hardness	Scale M	Scale M (Scale M)	73-76 (73-76)
Polymerized density	D792	g/cm ³ (---)	1.18-1.19 (---)
Ash content	USP281	% (%)	0.21-0.22 (0.21-0.22)

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Rigur RGD450

	ASTM	Units	Value
Tensile strength	D-638-03	MPa (psi)	40-45 (5800-6500)
Elongation at break	D-638-05	% (%)	20-35 (20-35)
Modulus of elasticity	D-638-04	MPa (psi)	1700-2100 (246,000 – 305,000)
Flexural Strength	D-790-03	MPa (psi)	52-59 (7500 - 8500)
Flexural Modulus	D-790-04	MPa (psi)	1500-1700 (217,000 – 246,000)
HDT, oC @ 0.45MPa	D-648-06	°C (°F)	49-54 (120-129)
HDT, oC @ 1.82MPa	D-648-07	°C (°F)	45-50 (113-122)
Izod Notched Impact	D-256-06	J/m (ft lb/inch)	30-35 (0.561-0.656)
Tg	DMA, E ₂	°C (°F)	48-52 (118-126)
Shore Hardness (D)	Scale D	Scale D (Scale D)	80-84 (80-84)
Rockwell Hardness	Scale M	Scale M (Scale M)	58-62 (58-62)
Polymerized density	D792	g/cm ³ (---)	1.20-1.21 (---)
Ash content	USP281	% (%)	0.3-0.4 (0.3-0.4)

Rubber-Like Materials

TangoBlackPlus FLX980 and Tangoplus FLX930

	ASTM	Units	Value
Tensile strength	D-412	MPa (psi)	0.8-1.5 (115-220)
Elongation at break	D-412	% (%)	170-220 (170-220)
Compressive set	D-395	% (%)	4-5 (4-5)
Shore Hardness (A)	D-2240	Scale A (Scale A)	26-28 (26-28)
Tensile Tear resistance	D-624	Kg/cm (Lb/in)	2-4 (18-22)
Polymerized density	D792	g/cm ³ (---)	1.12-1.13 (---)

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Agilus30 FLX935 and Agilus30 Black FLX985

	ASTM	Units	Value
Tensile strength	D-412	MPa (psi)	2.4-3.1 348-450)
Elongation at break	D-412	% (%)	220-240 (220-240)
Compressive set	D-395	% (%)	6-7 (6-7)
Shore Hardness (A)	D-2240	Scale A (Scale A)	30-35 (30-35)
Tensile Tear resistance	D-624	Kg/cm (Lb/in)	5-7 (28-39)
Polymerized density	D792	g/cm3 (---)	1.14-1.15 (---)

TangoBlack FLX973

	ASTM	Units	Value
Tensile strength	D-412	MPa (psi)	1.8-2.4 (115-350)
Elongation at break	D-412	% (%)	45-55 (45-55)
Compressive set	D-395	% (%)	0.5-1.5 (0.5-1.5)
Shore Hardness (A)	D-2240	Scale A Scale A)	60-62 (60-62)
Tensile Tear resistance	D-624	Kg/cm (Lb/in)	3-5 (18-24)
Polymerized density	D792	g/cm3 (---)	1.14-1.15 (---)

TangoGray FLX950

	ASTM	Units	Value
Tensile strength	D-412	MPa (psi)	3-5 (435-725)
Elongation at break	D-412	% (%)	45-55 (45-55)
Compressive set	D-395	% (%)	0.5-1.5 (0.5-1.5)
Shore Hardness (A)	D-2240	Scale A (Scale A)	73-77 (73-77)
Tensile Tear resistance	D-624	Kg/cm (Lb/in)	8-12 (50-60)
Polymerized density	D792	g/cm3 (---)	1.16-1.17 (---)

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Rubber-Like Materials

TangoBlackPlus FLX980 and Tangoplus FLX930

	ASTM	Units	Value
Tensile strength	D-412	MPa (psi)	0.8-1.5 (115-220)
Elongation at break	D-412	% (%)	170-220 (170-220)
Compressive set	D-395	% (%)	4-5 (4-5)
Shore Hardness (A)	D-2240	Scale A (Scale A)	26-28 (26-28)
Tensile Tear resistance	D-624	Kg/cm (Lb/in)	2-4 (18-22)
Polymerized density	D792	g/cm3 (--)	1.12-1.13 (--)

Agilus30 FLX935 and Agilus30 Black FLX985

	ASTM	Units	Value
Tensile strength	D-412	MPa (psi)	2.4-3.1 (348-450)
Elongation at break	D-412	% (%)	220-240 (220-240)
Compressive set	D-395	% (%)	6-7 (6-7)
Shore Hardness (A)	D-2240	Scale A (Scale A)	30-35 (30-35)
Tensile Tear resistance	D-624	Kg/cm (Lb/in)	5-7 (28-39)
Polymerized density	D792	g/cm3 (--)	1.14-1.15 (--)

TangoBlack FLX973

	ASTM	Units	Value
Tensile strength	D-412	MPa (psi)	1.8-2.4 (115-350)
Elongation at break	D-412	% (%)	45-55 (45-55)
Compressive set	D-395	% (%)	0.5-1.5 (0.5-1.5)
Shore Hardness (A)	D-2240	Scale A (Scale A)	60-62 (60-62)
Tensile Tear resistance	D-624	Kg/cm (Lb/in)	3-5 (18-24)
Polymerized density	D792	g/cm3 (--)	1.14-1.15 (--)

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TangoGray FLX950

	ASTM	Units	Value
Tensile strength	D-412	MPa (psi)	3-5 (435-725)
Elongation at break	D-412	% (%)	45-55 (45-55)
Compressive set	D-395	% (%)	0.5-1.5 (0.5-1.5)
Shore Hardness (A)	D-2240	Scale A (Scale A)	73-77 (73-77)
Tensile Tear resistance	D-624	Kg/cm (Lb/in)	8-12 (50-60)
Polymerized density	D792	g/cm3 (---)	1.16-1.17 (---)

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