

## Materials Simulating Engineering Plastics

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

	ASTM	Units	Metric	Units	Imperial
Tensile strength	D-638-03	MPa	55-60	psi	8000-8700
Elongation at break	D-638-05	%	25-40	%	25-40
Modulus of elasticity	D-638-04	MPa	2600-3000	psi	375,000-435,000
Flexural Strength	D-790-03	MPa	65-75	psi	9,500-11,000
Flexural Modulus	D-790-04	MPa	1700-2200	psi	245,000-320,000
HDT, °C @ 0.45MPa	D-648-06	°C	58-68	°F	136-154
HDT, °C @ 0.45MPa after thermal post treatment procedure A	D-648-06	°C	82-90	°F	180-194
HDT, °C @ 0.45MPa after thermal post treatment procedure B	D-648-06	°C	92-95	°F	198-203
HDT, °C @ 1.82MPa	D-648-07	°C	51-55	°F	124-131
Izod Notched Impact	D-256-06	J/m	65-80	ft lb/inch	1.22-1.50
Tg	DMA, E»	°C	47-53	°F	117-127
Shore Hardness (D)	Scale D	Scale D	85-87	Scale D	85-87
Rockwell Hardness	Scale M	Scale M	67-69	Scale M	67-69
Polymerized density	ASTM D792	g/cm3	1.17-1.18		

High Temperature Material (RGD525)

	ASTM	Units	Metric	Units	Imperial
Tensile strength	D-638-03	MPa	70-80	psi	10,000-11,500
Elongation at break	D-638-05	%	10-15	%	10-15
Modulus of elasticity	D-638-04	MPa	3200-3500	psi	465,000-510,000
Flexural Strength	D-790-03	MPa	110-130	psi	16,000-19,000
Flexural Modulus	D-790-04	MPa	3100-3500	psi	450,000-510,000
HDT, °C @ 0.45MPa	D-648-06	°C	63-67	°F	145-163
HDT, °C @ 0.45MPa after thermal post treatment procedure A	D-648-06	°C	75-80	°F	167-176
HDT, °C @ 1.82MPa	D-648-07	°C	55-57	°F	131-135
Izod Notched Impact	D-256-06	J/m	14-16	ft lb/inch	0.262-0.300
Water Absorption, %	D-570-98 24hr	%	1.2-1.4	%	1.2-1.4
Tg	DMA, E»	°C	62-65	°F	144-149
Shore Hardness D	Scale D	Scale D	87-88	Scale D	87-88
Rockwell Hardness	Scale M	Scale M	78-83	Scale M	78-83
Polymerized density	ASTM D792	g/cm3	1.17-1.18		
Ash content	USP281	%	0.38-0.42	%	0.38-0.42

## Materials Simulating Standard Plastics

### Transparent Materials

RGD720

	ASTM	Units	Metric	Units	Imperial
Tensile strength	D-638-03	MPa	50-65	psi	7250-9450
Elongation at break	D-638-05	%	15-25	%	15-25
Modulus of elasticity	D-638-04	MPa	2000-3000	psi	290,000-435,000
Flexural Strength	D-790-03	MPa	80-110	psi	12000-16000
Flexural Modulus	D-790-04	MPa	2700-3300	psi	390,000-480,000
HDT, °C @ 0.45MPa	D-648-06	°C	45-50	°F	113-122
HDT, °C @ 1.82MPa	D-648-07	°C	45-50	°F	113-122
Izod Notched Impact	D-256-06	J/m	20-30	ft lb/inch	0.375-0.562
Water Absorption	D-570-98 24hr	%	1.5-2.2	%	1.5-2.2
Tg	DMA, E»	°C	48-50	°F	118-122
Shore Hardness (D)	Scale D	Scale D	83-86	Scale D	83-86
Rockwell Hardness	Scale M	Scale M	73-76	Scale M	73-76
Polymerized density	ASTM D792	g/cm3	1.18-1.19		
Ash content	USP281	%	0.01-0.02	%	0.01-0.02

VeroClear RGD810

	ASTM	Units	Metric	Units	Imperial
Tensile strength	D-638-03	MPa	50-65	psi	7250-9450
Elongation at break	D-638-05	%	10-25	%	10-25
Modulus of elasticity	D-638-04	MPa	2000-3000	psi	290,000-435,000
Flexural Strength	D-790-03	MPa	75-110	psi	11000-16000
Flexural Modulus	D-790-04	MPa	2200-3200	psi	320,000-465,000
HDT, °C @ 0.45MPa	D-648-06	°C	45-50	°F	113-122
HDT, °C @ 1.82MPa	D-648-07	°C	45-50	°F	113-122
Izod Notched Impact	D-256-06	J/m	20-30	ft lb/inch	0.375-0.562
Water Absorption	D-570-98 24hr	%	1.1-1.5	%	1.1-1.5
Tg	DMA, E»	°C	52-54	°F	126-129
Shore Hardness (D)	Scale D	Scale D	83-86	Scale D	83-86
Rockwell Hardness	Scale M	Scale M	73-76	Scale M	73-76
Polymerized density	ASTM D792	g/cm3	1.18-1.19		
Ash content	USP281	%	0.02-0.06	%	0.02-0.06

Find material properties for color materials on the Color Digital Materials Data Sheet.

## Rigid Opaque Materials

VeroGray RGD850, VeroBlackPlus RGD875, VeroWhitePlus RGD835, VeroYellow RGD836, VeroCyan RGD841, VeroMagenta RGD851

	ASTM	Units	Metric	Units	Imperial
Tensile strength	D-638-03	MPa	50-65	psi	7250-9450
Elongation at break	D-638-05	%	10-25	%	10-25
Modulus of elasticity	D-638-04	MPa	2000-3000	psi	290,000-435,000
Flexural Strength	D-790-03	MPa	75-110	psi	11000-16000
Flexural Modulus	D-790-04	MPa	2200-3200	psi	320,000-465,000
HDT, °C @ 0.45MPa	D-648-06	°C	45-50	°F	113-122
HDT, °C @ 1.82MPa	D-648-07	°C	45-50	°F	113-122
Izod Notched Impact	D-256-06	J/m	20-30	ft lb/inch	0.375-0.562
Water Absorption	D-570-98 24hr	%	1.1-1.5	%	1.1-1.5
Tg	DMA, E»	°C	52-54	°F	126-129
Shore Hardness (D)	Scale D	Scale D	83-86	Scale D	83-86
Rockwell Hardness	Scale M	Scale M	73-76	Scale M	73-76
Polymerized density	ASTM D792	g/cm3	1.17-1.18		
Ash content VeroGray, VeroWhitePlus	USP281	%	0.23-0.26	%	0.23-0.26
Ash content VeroBlackPlus	USP281	%	0.01-0.02	%	0.01-0.02

VeroBlue RGD840

	ASTM	Units	Metric	Units	Imperial
Tensile strength	D-638-03	MPa	50-60	psi	7250-8700
Elongation at break	D-638-05	%	15-25	%	15-25
Modulus of elasticity	D-638-04	MPa	2000-3000	psi	290,000-435,000
Flexural Strength	D-790-03	MPa	60-70	psi	8700-10200
Flexural Modulus	D-790-04	MPa	1900-2500	psi	265,000-365,000
HDT, °C @ 0.45MPa	D-648-06	°C	45-50	°F	113-122
HDT, °C @ 1.82MPa	D-648-07	°C	45-50	°F	113-122
Izod Notched Impact	D-256-06	J/m	20-30	ft lb/inch	0.375-0.562
Water Absorption	D-570-98 24hr	%	1.5-2.2	%	1.5-2.2
Tg	DMA, E»	°C	48-50	°F	118-122
Shore Hardness (D)	Scale D	Scale D	83-86	Scale D	83-86
Rockwell Hardness	Scale M	Scale M	73-76	Scale M	73-76
Polymerized density	ASTM D792	g/cm3	1.18-1.19		
Ash content	USP281	%	0.21-0.22	%	0.21-0.22

## Polypropylene-like Materials

DurusWhite RGD430

	ASTM	Units	Metric	Units	Imperial
Tensile strength	D-638-03	MPa	20-30	psi	2900-4350
Elongation at break	D-638-05	%	40-50	%	40-50
Modulus of elasticity	D-638-04	MPa	1000-1200	psi	145,000-175,000
Flexural Strength	D-790-03	MPa	30-40	psi	4350-5800
Flexural Modulus	D-790-04	MPa	1200-1600	psi	175,000-230,000
HDT, °C @ 0.45MPa	D-648-06	°C	37-42	°F	99-108
HDT, °C @ 1.82MPa	D-648-07	°C	32-34	°F	90-93
Izod Notched Impact	D-256-06	J/m	40-50	ft lb/inch	0.749-0.937
Water Absorption	D-570-98 24hr	%	1.5-1.9	%	1.5-1.9
Tg	DMA, E»	°C	35-37	°F	95-99
Shore Hardness (D)	Scale D	Scale D	74-78	Scale D	74-78
Rockwell Hardness	Scale M	Scale M	no data	Scale M	no data
Polymerized density	ASTM D792	g/cm3	1.15-1.17		
Ash content	USP281	%	0.10-0.12	%	0.1-0.12

Endur RGD450

	ASTM	Units	Metric	Units	Imperial
Tensile strength	D-638-03	MPa	40-45	psi	5800-6500
Elongation at break	D-638-05	%	20-35	%	20-35
Modulus of elasticity	D-638-04	MPa	1700-2100	psi	246,000 – 305,000
Flexural Strength	D-790-03	MPa	52-59	psi	7500 - 8500
Flexural Modulus	D-790-04	MPa	1500-1700	psi	217,000 – 246,000
HDT, °C @ 0.45MPa	D-648-06	°C	49-54	°F	120-129
HDT, °C @ 1.82MPa	D-648-07	°C	45-50	°F	113-122
Izod Notched Impact	D-256-06	J/m	30-35	ft lb/inch	0.561-0.656
Tg	DMA, E»	°C	48-52	°F	118-126
Shore Hardness (D)	Scale D	Scale D	80-84	Scale D	80-84
Rockwell Hardness	Scale M	Scale M	58-62	Scale M	58-62
Polymerized density	ASTM D792	g/cm3	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	Metric	Units	Imperial
Tensile strength	D-412	MPa	0.8-1.5	psi	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	26-28	Scale A	26-28
Tensile Tear resistance	D-624	Kg/cm	2-4	Lb/in	18-22
Polymerized density	ASTM D792	g/cm3	1.12-1.13		

TangoBlack FLX973

	ASTM	Units	Metric	Units	Imperial
Tensile strength	D-412	MPa	1.8-2.4	psi	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	60-62	Scale A	60-62
Tensile Tear resistance	D-624	Kg/cm	3-5	Lb/in	18-24
Polymerized density	ASTM D792	g/cm3	1.14-1.15		

TangoGray FLX950

	ASTM	Units	Metric	Units	Imperial
Tensile strength	D-412	MPa	3-5	psi	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	73-77	Scale A	73-77
Tensile Tear resistance	D-624	Kg/cm	8-12	Lb/in	50-60
Polymerized density	ASTM D792	g/cm3	1.16-1.17		



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