



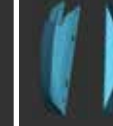

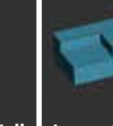
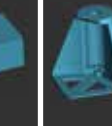


Figure 4[®] Material Properties and Applications Guide



Figure 4* Material Properties and Applications Guide

		SUITABILITY FOR PART GEOMETRIES (% PRINTABILITY POTENTIAL)*								MECHANICAL PROPERTIES			
		 Fine Details and Features	 Thin Wall Parts	 Fitted Part Assemblies	 Medium Cover Parts	 Large Cover Parts	 Non-Uniform Wall Thickness Parts	 Large Cross Sectional Area Parts	 Jigs and Fixtures	Tensile Modulus MPA	Elongation @ Break %	Impact Strength (Notched) J/M	HDT @ 0.455 MPA °C
PROTOTYPING AND DESIGN VERIFICATION	TOUGH-GRY 10	75	85	45	75	85	35	15	25	2180	25	29	59
	TOUGH-BLK 20	95	90	85	85	90	75	35	65	1780	36	27	55
PRODUCTION	Rigid White	95	95	95	95	95	95	95	95	2100	20	21	65
	Rigid Gray	95	95	95	95	95	95	95	95	2400	30	21	72
	High Temp 150C Black	95	95	95	95	95	95	95	95	2600	4	10	>150
	HI TEMP 300-AMB	95	95	90	95	95	95	65	95	4100	2.3	10	300
	MED-AMB 10	95	95	90	95	85	95	65	90	2765	4	18	119
	RUBBER-65A BLK	50	50	65	90	85	85	65	65	23	126	8.5**	65***
	RUBBER-BLK 10	80	80	85	95	85	90	65	90	540	80	76**	97***
APPLICATION SPECIFIC													

* Top 8 types of part geometries based on years of additive experience. Each part was printed with the suite of Figure 4 materials and assigned a % of parts in that category that the material was well suited for producing. ** Tear Strength Type-C kN/m *** Shore A Hardness

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- = VERY HIGH
- = HIGH
- = MEDIUM
- = LOW

		PERFORMANCE							NOTES
		Long Term Indoor Environmentally Stable	Long Term Outdoor Environmentally Stable	Differential Shrink	Bottom Surface	Warp	1st Article Success	Supports	
PROTOTYPING AND DESIGN VERIFICATION	TOUGH-GRY 10			● ● ●	● ● ●	● ● ●	● ● ●	● ● ● ●	<ul style="list-style-type: none"> Fast printing prototyping material Good surface quality for prototyping Light gray material good for contrast and definition
	TOUGH-BLK 20	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	<ul style="list-style-type: none"> Long-term stable material for UV and humidity Better accuracy from low differential shrink & bottom surface quality No settling in resin tray
PRODUCTION	Rigid White	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	<ul style="list-style-type: none"> Biocompatible, capable of meeting ISO 10993-5 and -10 standards for cytotoxicity, sensitization and irritation Long term stable material for UV and humidity
	Rigid Gray	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	<ul style="list-style-type: none"> Long term stable material for UV and humidity Better accuracy from low differential shrink and bottom surface quality
	High Temp 150C Black	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	<ul style="list-style-type: none"> Long term stable material for UV and humidity UL 94 V0 @ 2mm, 3mm and FST 2mm, 3mm capable Long term stable material for UV and humidity
	HI TEMP 300-AMB			● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	<ul style="list-style-type: none"> Very high HDT at both low and high pressure (>300 °C) Better accuracy from low differential shrink & bottom surface quality

Note: Not all products and materials are available in all countries – please consult your local sales representative for availability

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		PERFORMANCE								
		Long Term Indoor Environmentally Stable	Long Term Outdoor Environmentally Stable	Differential Shrink	Bottom Surface	Warp	1st Article Success	Supports	NOTES	
PRODUCTION	MED-AMB 10	<div><div></div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div><div></div></div>	<ul style="list-style-type: none">• Biocompatible, capable of meeting ISO 10993-5 & -10 standards for cytotoxicity, sensitization and irritation• Better accuracy from low differential shrink & bottom surface quality
	RUBBER-65A BLK	<div><div></div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div><div></div></div>	<ul style="list-style-type: none">• Long term stable material for UV and humidity• Biocompatible, capable of meeting ISO 10993-5 and -10 standards for cytotoxicity, sensitization, and irritation
	RUBBER-BLK 10	<div><div></div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<ul style="list-style-type: none">• High tear strength makes a very tough malleable material• Long term stable material for UV and humidity• Better accuracy from low differential shrink & bottom surface quality

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