

Figure 4™ Material Properties and Applications Guide

		SUITABILITY FOR PART GEOMETRIES (% PRINTABILITY POTENTIAL)*								MECHANICAL PROPERTIES			
										Tensile Strength MPA	Elongation @ Break %	Impact Strength 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-GRY 15	75	85	75	75	85	35	15	25	2120	35	32	59
	TOUGH-BLK 20	95	90	85	85	90	75	35	65	1780	36	27	55
	FLEX-BLK 10	85	85	55	75	85	75	15	35	1402	104	55	52
	FLEX-BLK 20	90	90	90	90	95	95	55	85	840	86	91	41
Production	PRO-BLK 10	95	95	95	95	95	95	65	95	2320	12	24	71
	HI TEMP 300-AMB	95	95	90	95	95	95	65	95	4000	3	10	300
	MED-AMB 10	95	95	90	95	85	95	65	90	2760	4	18	118
	MED-WHT 10	95	95	90	95	85	95	65	90	3090	3	17	102
	EGGSHELL-AMB 10		98	95		95				2782	6	15	86
Application Specific	RUBBER-BLK 10	80	80	85	95	85	90	65	90	500	80	125**	25
	ELAST-BLK 10	75	75	60	90	85	85	40	65	3.6	83	11**	25

* 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 in kN/m

RATING SYSTEM

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

		PERFORMANCE							
		Long Term Indoor Environmentally Stable	Long Term Outdoor Environmentally Stable	Differential Shrink	Bottom Surface	Warp	1st Article Success	Supports	NOTES
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-GRY 15			●●●	●●●	●●●	●●●	●●●●●	<ul style="list-style-type: none"> Midline mechanical properties for prototyping including modulus, elongation, and notch impact Good surface quality for prototyping
	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
	FLEX-BLK 10			●●●●●	●●●	●●●●●	●●●	●●●	<ul style="list-style-type: none"> Long term stable material for UV and humidity Better accuracy from low differential shrink and bottom surface quality Easier to clean
	FLEX-BLK 20	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	<ul style="list-style-type: none"> Faster printing FLEX material good for prototyping
PRODUCTION	PRO-BLK 10	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	<ul style="list-style-type: none"> Best Figure 4 Material performance for 1st article success Long term stable material for UV and humidity Better accuracy from low differential shrink & bottom surface quality
	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
	MED-AMB 10	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	<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
	MED-WHT 10	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	<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
	EGGSHELL-AMB 10			●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	<ul style="list-style-type: none"> Easily breaks away from the injected material once cured Material is compatible with many platinum and tin silicones
APPLICATION SPECIFIC	RUBBER-BLK 10	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●	<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
	ELAST-BLK 10			●●●●●	●●●●●	●●●●●	●●●	●●●	<ul style="list-style-type: none"> Low tear strength combined with low tensile modulus makes parts easy to tear



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

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