

Naturacell™ Earth friendly. Manufacturing ready.

Naturacell™ from Rotuba is a proven, environmentally friendly polymer that can help companies quickly, easily pursue green initiatives. It possesses extraordinary physical properties such as tough impact strength, superior clarity, strong chemical resistance, dimensional stability and warm to the touch. See how Naturacell stands up against the other bio-polymers on the market today.

COMPARATIVE PROPERTIES

	Test Method	Naturacell	Acrylite H15 PMMA*	Nova PS 1200 GPPS*	Lexan R101 Polycarbonate*	Mirel™ PHA (P1002 Grade)	Mirel™ PHA (P2001 Grade)	PLA (Source IDES)
Plasticizer	%	19 - 30						
Rotuba MFI	mg/10 min	1.4 - 21.2						

PHYSICAL PROPERTIES

Water Absorption @ 24 hrs (73°F)	ASTM D570 %	7.7 - 11.7	0.3	N/A	0.35	0.1	0.1	N/A
Specific Gravity	ASTM D792 g/cm³	1.29 - 1.31	1.19	1.04	1.2	1.3	1.24	1.26
Mold Shrinkage	ASTM D955 %	0.07 - 0.3	0.4 - 0.7	.04 - .07	0.5 - 0.7	1.4 - 1.6	N/A	N/A

MECHANICAL PROPERTIES

Tensile Stress @ Yield	ASTM D638 psi	3,410 - 7,190	9,800	7,600	9,000	3,900	4,300	N/A
Tensile Stress @ Break	ASTM D638 psi	3,250 - 6,960	N/A	N/A	10,000	N/A	N/A	7,000 - 21,000
Elongation @ Break	ASTM D638 %	13 - 17	N/A	N/A	140	15	7	2.5 - 100
Flexural Modulus	ASTM D790 psi	150,000 - 300,000	N/A	500,000	340,000	260,000	230,000	540,000
Flexural Yield Strength	ASTM D790 psi	4,500 - 12,000	17,500	15,000	14,200	6,000	6,200	
Rockwell Hardness	ASTM D785R Scale	29 - 104	95	N/A	118	N/A	N/A	84 - 115
Izod Notched Impact @ 73°F)	ASTM D256 ft-lbs/in	2.0 - 3.8	0.25	0.4	17	0.6	N/A	0.24 - 0.54
Izod Notched Impact @ -40°F	ASTM D256 ft-lbs/in	0.3 - 0.6						

THERMAL PROPERTIES

DTUL @ 66psi	ASTM D648 °F	129 - 180	N/A	N/A	280	259	270	N/A
TUL @ 264psi	ASTM D648 °F	147 - 190	205	203	270	151	147	N/A
Vicat Softening Point	ASTM D1525 °F	189 - 217	221	228	310	279	278	N/A

MISCELLANEOUS PROPERTIES

Light Transmission (1/16" Thick)	ASTM D 1003 %	90 - 91	92%	N/A	N/A	N/A	N/A	N/A
Haze (1/16" Thick)	ASTM D 1003 %	0.88 - 1.25	N/A	N/A	N/A	N/A	N/A	N/A
Weight Loss on Heating (72 hr@176°F)	ASTM D 707 %	0.87 - 3.95	N/A	N/A	N/A	N/A	N/A	N/A

* Values taken from IDES® Prospector Material Database

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