Naturacell® 21

Cellulose Acetate

Rotuba Extruders, Inc.

Message:

Wood-based polymer
Naturacell is a durable, attractive, plant-based plastic resin that can be reprocessed and reused in most applications. Best of all, it works with your existing tooling. So you can incorporate it into your products right away.
Naturacell™'s extraordinary physical properties make it not only an environmentally friendly plastic, but also an ideal material for thousands of consumer products:
Tough impact strength
Superior clarity and transparency
High surface gloss
Strong chemical resistance
Warm to the touch

General Information	
Additive	Plasticizer (21) 2
Features	Highlight Impact resistance, good Updatable resources Good chemical resistance Definition, high
Uses	Cosmetic Packaging Handle Packaging Films Label Electrical/Electronic Applications Personal care Pipe fittings Home appliance components Furniture Car interior equipment Car exterior decoration Sporting goods Toys Stationery Toothbrush handle Glasses Bathroom accessories
UL File Number	E322742

Appearance	Opacity
	Clear/transparent
Forms	Particle
Processing Method	Extrusion
	Injection molding

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.31	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR)	1.4	g/10 min	ASTM D1238
Molding Shrinkage - Flow	0.20 - 0.60	%	ASTM D955
Water Absorption (23°C, 24 hr)	2.3 - 2.6	%	ASTM D570
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness (R-Scale)	96		ASTM D785
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Strength			ASTM D638
Yield	66.2	MPa	ASTM D638
Fracture	66.2	MPa	ASTM D638
Tensile Elongation (Break)	15	%	ASTM D638
Flexural Modulus	2160	MPa	ASTM D790
Flexural Strength (Yield)	71.7	MPa	ASTM D790
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact (23°C)	120 - 260	J/m	ASTM D256
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load			ASTM D648
0.45 MPa, not annealed	65.0 - 95.0	°C	ASTM D648
1.8 MPa, not annealed	50.0 - 87.2	°C	ASTM D648
Vicat Softening Temperature	90.0 - 126	°C	ASTM D1525
RTI Elec	50.0	°C	UL 746
RTI Imp	50.0	°C	UL 746
RTI	50.0	°C	UL 746
Flammability	**Nominal Value**		**Test Method**
Flame Rating			UL 94
1.5 mm, ALL	HB		UL 94
3.0 mm, ALL	HB		UL 94
Optical	**Nominal Value**	**Unit**	**Test Method**
Transmittance (1520 µm)	> 90.0	%	ASTM D1003
Haze (1520 µm)	< 8.5	%	ASTM D1003
Additional Information	**Nominal Value**		
Flow Designation	H3		
Injection	**Nominal Value**	**Unit**	
Drying Temperature	66 - 71	°C	

Drying Time	2.0 - 3.0	hr
Rear Temperature	193 - 204	°C
Middle Temperature	193 - 204	°C
Front Temperature	199 - 210	°C
Nozzle Temperature	210 - 221	°C
Mold Temperature	38 - 82	°C
Injection Pressure	14.5	MPa
Back Pressure	0.00 - 0.448	MPa
Vent Depth	0.051 - 0.76	mm

Injection instructions
Injection Cycle Times: 2 to 12 secsBooster Cycle Time: 6 to 12 secCure Time: 10 to 70 sec

Extrusion	Nominal Value	Unit
Melt Temperature	199 - 216	°C

Recommended distributors for this material

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