
	<p>Synterra® PLLA 2010 PLLA 2011 Version: 2012-08</p>	
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Datasheet : Very high molecular weight for extrusion. (2011 : improved stability)

PHYSICAL PROPERTIES	TEST METHOD	UNITS	SPECIFICATION
Appearance			round pellets
Color			Off white (crystallized)
Melt Flow Rate	ISO 1133 (190 °C/2,16kg)	g/600s	4 (+- 2)
Polymer Density	ISO 1183	g/cm ³	1,25
Moisture content			< 400 ppm
Residual Monomer		%	< 0,5
D-Isomer		%	< 1
Melting temperature	DSC: ISO 11357	°C	175-180
Glass Transition temperature	DSC: ISO 11357	°C	55-60

Processing

Temp. profile in the screw : 90-130-160-180-185-190-200-200 °C.

Screw speed : 175 rpm

Drying of the Synterra® PLLA is recommended prior to processing at a temperature of 90-110°C for 4-6 hours using dehumidified air with a dew point of -40°C.

C2C Certified and GMO free.

Synterra®, PLA made from Puralact® Lactide, was certified by MBDC EPEA on March 25th 2011 to meet the stringent requirements of Cradle to Cradle SILVERSM product certification.

In addition to the use of inherent benign ingredients in the polymer recipe, the certification was only possible as the feedstock for Synterra® PLA is not originating from any Genetically Modified Organisms and is therefore a true GMO free product.



Cradle-to-Gate LCA Results for PLA¹

The cradle-to-gate impact of 1 kg PLA example.	
Non-Renewable Energy Use	38,488 MJ
Renewable Energy Use	55,763 MJ
Resources	0,79198 kg Crude Oil-Equiv.
Carbon Footprint incl sequestration	0,9387 kg CO ₂ -Equiv.
Acidification	0,026491 kg SO ₂ -Equiv.
Photochemical Oxidant Formation	0,0025757 kg Ethene-Equiv.
Eutrophication	0,012416 kg Phosphate-Equiv.

Note that the carbon footprint includes the biotic carbon dioxide sequestered during sugar cane farming (- 1833 kg CO₂/tonne PLA).

¹ Based on Life Cycle Assessment Compliant with ISO 14 040 + 14 044 Standards

Prepared by Tobias Borén, AkzoNobel Sustainable Development, October 2010

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