

Product Data Sheet

Luminy® LX930U

Revision date 1 Sep 2017
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Date previous version 17 Jul 2017
Version & language 2/K012 - EN
Product availability Americas only
Product status Developmental

PRODUCT DATA SHEET
LUMINY LX930U

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DESCRIPTION

PLA is a biobased polymer derived from natural resources and offers a significant reduction in carbon footprint compared to oil-based plastics. Luminy LX930U is a medium viscosity, medium flow, fiber-grade PLA that can be used as low melting component in sheath-core configurations.

TYPICAL PROPERTIES¹

Physical properties	Method	Typical value
Density	Literature value	1.24 g/cm ³
Melt flow index	ISO 1133-A (210°C/2.16kg)	17 g/10 min
Melt flow index	ISO 1133-A (190°C/2.16kg)	8 g/10 min
Stereochemical purity	Total Corbion PLA method	90% (L-isomer)
Appearance	Visual	Amorphous pellets
Residual monomer	Total Corbion PLA method	≤ 0.3%
Water / moisture	Coulometric Karl-Fischer	≤ 400 ppm
Melting temperature	DSC	125-135°C
Glass transition temperature	DSC	55-60°C
Mechanical properties	Method	Typical value
Tensile modulus	ISO 527-1	3500 MPa
Tensile strength	ISO 527-1	40 MPa
Elongation at break	ISO 527-1	≤ 5%
Charpy notched impact, 23°C	ISO 179-1eA	≤ 5 kJ/m ²
Heat deflection temp, amorphous ²	ISO 75-1	55-60°C

¹ Typical properties, not to be interpreted as specifications
² HDT B, 0.45MPa flatwise. HDT depends on processing conditions

PROCESSING INFORMATION & RECOMMENDATIONS

Luminy LX930U can be processed on conventional extrusion spinning and drawing equipment. Thorough cleaning is highly recommended due to the incompatibility of PLA with a wide variety of polymers. In case of spinning PLA after another polymer resin, it is recommended to not install the spin pack until an even homogeneous flow of PLA is observed. Pre-drying of the resin is recommended. Typical melt spinning temperatures are 220-240°C.

MOISTURE & PRE-DRYING

It is recommended to dry Luminy LX930U from the packaging for 24 hours at 40°C. Drying of standard PLA can be performed in a desiccant hot air dryer, with a dew point of -40°C or less. Drying at higher temperatures can result in pellet sticking and clogging of drying and conveying equipment. It is recommended to reduce the moisture content before spinning to a level preferably less than 100 ppm, measured by e.g. Karl-Fischer or Brabender aquatrac method. Moisture causes hydrolysis of the PLA polymer during melt processing, resulting in process instabilities and possibly decreased mechanical properties.



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PACKAGING & STORAGE CONDITIONS

Luminy LX930U is available in 1,000 kg aluminum-lined FIBCs. It is recommended to store PLA polymer in its closed, original moisture-barrier packaging at temperatures below 50°C. Storage in direct sunlight should be avoided. The supplied PLA polymer pellets are typically semi-crystalline, unless otherwise stated.

FOOD CONTACT STATUS

Luminy LX930U is compliant with the requirements of Section 201(s) and Section 409 of the Federal, Drug and Cosmetic Act. Luminy LX930U is compliant with the requirements as described in Food Contact Notification (FCN) No. 475, which became effective on February 11, 2005, and is approved for use for all food types and conditions of use C through G.

Luminy PLA polymers are compliant with EU commission regulation 10/2011 of 14 January 2011 (and amendments) on plastic materials and articles intended to come into contact with food. Given the composition of the PLA polymers they can be considered suitable for use in food contact applications. Regarding lactic acid, it should be taken into account that it is to be considered as a dual use substance according Regulation 10/2011, since lactic acid is approved as a food additive (additive number E270). For lactic acid there are no Specific Migration Limits set in Regulation 10/2011. The regulation does include an overall migration limit of 10 mg/dm² of the overall migration from finished plastic articles into food.

It is the responsibility of the manufacturer of the final product, when intended as a food contact product, to determine that the use of the product is safe and also suitable for the intended application. While it is Total Corbion PLA's conclusion that the above mentioned polymers are permitted, it is the final product which must meet the given regulations and the manufacturer should take responsibility to check if the final product is in compliance with these Regulations.

NOTICE REGARDING USE RESTRICTIONS

Unless specifically agreed to in writing, Total Corbion PLA will not knowingly market any product into any of the following commercial or developmental applications: (1) bottles or preforms, unless specific arrangements on recycling and end-of-life are in place, (2) microbeads used in personal care products, including without limitation, cosmetics or over-the-counter drugs, (3) components of products intended for human or animal consumption or (4) any application that is intended to be used inside the human body.



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