



Grade: PLA LX175-041

COMPOSITION / INFORMATION ON THE COMPONENTS

CHEMICAL NAME: POLYLACTIDE RESIN

CAS No. 9051-89-2

PHYSICAL-CHEMICAL PROPERTIES

Density: 1.24 g/cm³

Melt Flow Index (MFR) (210°C/2.16kg) g/10 min. 15

Appearance: Clear, translucent pellets

Odor: Sweet

Physical state: Solid

Melting temperature DSC 155°C

Glass transition temperature DSC 55-60°C

MECHANICAL PROPERTIES

Tensile modulus ISO 527-1 3500 MPa

Tensile strength ISO 527-1 45 MPa

Elongation at break ISO 527-1 $\leq 5\%$

Charpy notched impact, 23°C ISO 179-1eA ≤ 5 kJ/m²

PROCESSING RECOMMENDATIONS:

Predrying 4-6 hours at 85°C

Feed zone 20-40°C

Melt zone 170-190°C

Mixing & conveying 190-210°C

Die head temperature 190-210°C

APPLICATION: PLA LX-175-041 is high viscosity, low flow, amorphous, transparent PLA resin suitable for extrusion, thermoforming, fiber spinning, 3D filament

PROCESSING INFORMATION & RECOMMENDATIONS

Standard PLA can be processed on conventional extrusion equipment and can be used as neat resin or as part of a compound to further optimize overall material properties. It is recommended to use a general purpose screw with L/D ratios between 24 and 32. Pre-drying of the resin is recommended.

START-UP AND SHUTDOWN

1. Purge the system with a polyolefin or a purging compound (e.g. Dyna-Purge, Clean LDPE) at its recommended temperature settings.
2. Reset the temperature settings to the recommended PLA temperature profile.
3. Purge with PLA resin or PLA compound until stable processing is obtained free of contaminants.



4. Reset the temperature settings to the recommended purging compound temperature profile.

5. Purge with a polyolefin or a purging compound for 5 times the average residence time.

After completion of the run, PLA must be removed from the whole system. PLA can degrade into lactic acid causing corrosion of the equipment (e.g. die plates).

MOISTURE & PRE-DRYING

It is recommended to dry PLA LX175-041 from the packaging for 4-6 hours at 85°C. Drying of standard PLA can be performed in a desiccant hot air dryer, with a dew point of -40°C or less. It is recommended to reduce the moisture content before melt processing to a level less than 250ppm and preferably less than 100 ppm, measured by e.g. Karl-Fischer or Brabender aquatrac method. Predrying is in particular important prior to injection molding, film and sheet production. Moisture causes hydrolysis of the PLA polymer during melt processing, resulting in reduced mechanical performance in the final part.

PACKAGING & STORAGE CONDITIONS

PLA LX175-041 is packed in 1200 kgs PE-lined octabins. It is recommended to store PLA polymer in its closed packaging at temperatures below 50°C and dry place. Storage in direct sunlight should be avoided. The supplied PLA polymer pellets are typically semi-crystalline, unless otherwise stated.

COMPOSTABILITY

The virgin resin which grade PLA LX175-041 comes from, is in compliance with the EN-13432 standard and has been certified compostable by Vinçotte (OK Compost S478) and by European Bioplastics 7W2030 (Seedling 7W2030) up to a thickness of 1.0 mm. As the compostability of the end product is also dependent on the geometry of product, it is the responsibility of the manufacturer of the end product to ensure compliance with the regulations.

