



ErcrosBio[®] LM 81003

Opaque injection grade

DESCRIPTION

ErcrosBio[®] LM 81003 is a PLA (polylactic acid)-based thermoplastic obtained from renewable natural materials. The content of material of biological origin is over 85%.

CHARACTERISTICS

ErcrosBio[®] LM 81003 is a material designed for moulding rigid parts by injection when the requirements include good mechanical properties with a high deformation at break and good performance on impact. It has high-speed crystallisation, which increases with high mould temperatures (90°C to 110°C).

RECOMMENDED APPLICATIONS

ErcrosBio[®] LM 81003 is recommended for injection moulding of parts that require good mechanical properties as well as good performance on impact. It can be used for the injection of all types of parts: protection cases, supports, small containers, etc.

PROCESSING CONDITIONS

Prior to processing, the material must be dried in a dehumidifier (see Drying).

It can be processed in conventional equipment such as those used with polyolefins.

It is recommended to use a temperature profile that increases from 180°C to 220°C, keeping the hopper inlet between 30°C and 40°C. It is recommended that the temperature of the molten mass does not exceed 220°C, as this could promote thermal degradation, which will lead to defects in the moulded parts.

The recommended spindle speed is 100-175 rpm.

For optimal performance at high temperatures of use, it is recommended to use mould temperatures between 90°C and 110°C.

The processability and surface finish quality of the parts improve considerably with mirror polished moulds.

PROPERTIES

Property ¹	Value	Units	Method
Melt flow index (MFI)	5	g/10 min	ISO 1133-2 (210°C and 2,16 kg)
Density	1,25	g/cm ³	ISO 1183-1
Melting temperature	180	°C	ISO 11357
Glass transition temperature	63	°C	ISO 11357
Vicat B temperature	90	°C	ISO 306 (50°C/h-50 N)
Young's modulus	4,3	GPa	EN ISO 527
Elongation at break	17,7	%	EN ISO 527
Stress at break	48,1	MPa	EN ISO 527
Notched impact strength	13,6	KJ/m ²	ISO 179

¹ Using mould temperatures of 90 to 110°C.

CONTACT TELEPHONE NUMBERS

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DRYING

ErcrosBio[®] LL, LD and LM grades should be dried prior to use, for 5 to 6 hours at a temperature of 85°C using dehumidified air with a dew point of -40°C and with sufficient air flow (over 1,5 m³/h per kg of resin). It is recommended to use the product with a water content under 0,02% (200 ppm).

The original packaging should remain sealed until the time of use, given the product's hydrophilic nature. After use, reseal the packaging of the material that has not been used.

Drying times should be increased by 4 hours (up to a total of 9 to 10 hours) when the packaging has been opened for several hours prior to use and the material has been exposed to moisture.

RECYCLABILITY

Products obtained with **ErcrosBio[®] LL, LD and LM** should be identified for recycling with code 7, corresponding to "Others", according to the SPI (Society of the Plastics Industry).

The main outlets at the end of the product's useful life are:

- Mechanical recycling: recovery as PLA, similar to PET.
- Chemical recycling: recovery as lactic acid or its derivatives.
- Incineration: allows for energy recovery.
- Industrial composting: decomposition to CO₂ and/or biogas, water and compost.



PACKAGING, CONTAINERS

ErcrosBio[®] LL, LD and LM grades are supplied as pellets in 700 kg octabins and in 25 kg sacks, both with an antihumidity inner bag.

Waste from packaging (pallets, sacks, octabins, straps, etc.) are considered as Non-Dangerous according to current legislation, and should be managed by an Authorised Waste Manager. The client is responsible for waste management and compliance with the regulations applicable in the country of use.

STORAGE AND HANDLING

During storage, **ErcrosBio[®] LL, LD and LM** grades may become moist if they are exposed to air. The quantity of water that can be absorbed will depend on the temperature, atmospheric humidity and exposure time. The product should therefore be stored hermetically sealed in the inner bag in a cool, dry place.

In general, two pallets/octabins can be stacked on firm ground, unless specified otherwise on the upper part of the packaging, indicated by the symbol shown.



EXPIRY – USEFUL LIFE

If stored properly with the packaging remaining sealed, the product can be processed for up to 12 months after it is supplied.

Product stored in packages that have lost their seal and have been exposed to humidity for extended periods of time (more than two months, as a guideline) could have become degraded and lost their mechanical properties, even after being dried again.

SAFETY

ErcrosBio[®] LL, LD and LM grades are not classified as dangerous products according to Regulation (EC) no. 1272/2008 and are therefore not subject to special regulations regarding transportation. These products do not decompose at ambient temperature.

REACH

Being a polymer, and in accordance with Article 2.9 of the Regulation, it is exempt from the registry obligations.

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