



Beograde INJ039

Material Technical Data Sheet



Date of issue: 11/04/2023 Version: 3.1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form	: Granulate
Name	: Beograde INJ039
Product code	: 9802070039
Application	: Injection moulding
Composition	: 100% biodegradable compound and additives

1.2. Details of the supplier of the material specification sheet

Manufacturer

Beologic
Jolainstraat 44
8554 Sint-Denijs
info@beologic.com

SECTION 2: Physical, mechanical and thermal properties

2.1. Information on basic physical, mechanical and thermal properties

Properties ⁽¹⁾	Method	Typical Value	Unit
Physical			
Content		Complex blend of biopolymers	
Physical state		Solid	
Renewable content		≥75	%
Relative density	ISO 1183-1	1,32-1,42	g/cm ³
MFI (190°C, 2,16 kg)	ISO 1133-1	19	g/10min
Melting temperature range	ISO 11357	165-175	°C
Coloured in mass		NO	
Colour material		White	
Transmission		Opaque	
UV package		NO	
Carbon footprint ⁽²⁾	PAS 2050	3,514*	kg CO ₂ Eq/ kg
Shelf life ⁽³⁾		6	Months
Mechanical			
Tensile modulus	ISO 527-1	3390	MPa
Tensile strength	ISO 527-1	40	MPa
Break stress	ISO 527-1	29	MPa
Elongation at break	ISO 527-1	3,3	%
Flexural modulus	ISO 178	3040	MPa
Charpy impact strength (Notched 1eA , 23 °C)	ISO 179-1	5,3	kJ/m ²
Vicat softening point (A120)	ISO 306	61	°C
HDT (B)	ISO 75-1	57	°C
Decomposition temperature (TGA)	ISO 3451-1	300	°C
Ash content (TGA)	ISO 3451-1	≤20	%

(1) Typical properties; not to be construed as specifications.

(2) Carbon footprint calculated by Neutrologic

(3) Only if storage conditions (section 5) were followed

*Due to continuous variation of feedstock this figure reflects value of September 2022. Update latest carbon footprint available on request.

2.2. Product Carbon footprint

The product carbon footprint helps to define the amount of greenhouse gas emissions generated by a product along its life cycle, it quantifies the ghg-emissions related to the production of our products.

Neutrologic calculates the carbon footprint of all sales products and this from cradle to gate.

The calculation of the carbon footprint is in accordance with the internationally recognized Greenhouse Gas Protocol Product Standard which is based on the standard ISO-14067 norm and PAS2050.

The carbon footprint is mentioned in our datasheet - by offsetting or compensating the calculated emissions we can present our products as Carbon Neutral compounds. This compensation is according the Verified Carbon Standard – more info via (www.v-c-s.org).



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2.3. Other information

No additional information available

SECTION 3: Processing conditions – guidelines

Hopper	40 – 60	°C
Feeding zone	170 – 180	°C
Compression zone	180 – 190	°C
Metering zone	190 – 200	°C
Nozzle	200 – 205	°C
Mold temperature, amorphous	30 – 60	°C

3.1 Plasticizing

We recommend to keep the residence time as short as possible, use low screw RPM to fill up the screw carefully and have the material in motion as much as possible.

For optimal process ability, the shot size should be between 35% and 75% of the machine's maximum plasticizing capacity. Too small shot size can cause degradation because of the excessive residence time.

3.2 Backpressure

Use minimal backpressure when loading the barrel in order to avoid unwanted, uncontrolled friction heating.

3.3 Cooling

Increased mould temperature will normally result in better surface appearance.

Start with 30°C and then increase the mould temperature until the molded piece looks good. Better particle distribution in the mould can normally also be achieved by increased mould temperature.

3.4 Injection speed

High injection speed normally gives the best particle distribution and surface appearance.

3.5 General comments

Discoloured molded parts and/or a burnt smell is a symptom of a too high temperature, too long residence time or uncontrolled friction heat. To prevent burning or damaging of the screw, barrel or tool, it's obliged to stop the machine only after it has been cleaned with pure PP, PE or cleaning compound.

Beograde is not compatible with a wide variety of other resins, and special purging sequences should be followed:

1. Before production, ensure to clean the injection moulding machine and bring temperature to steady state with general purpose PP or PE.
2. Vacuum out hopper system to avoid contamination.
3. Introduce Beograde into the injection moulding machine at the operating conditions proposed in section 3.
4. At shutdown, purge machine with PP or PE or cleaning compound. It's obliged to stop the machine only after it has been cleaned with pure PP or cleaning compound.

SECTION 4: Biodegradability and compostability

Composting of organic waste helps to divert organic waste from landfill or incineration. Composting is a biological process in which organic wastes are degraded by microorganisms into carbon dioxide, water and humus, a soil nutrient. **Beograde INJ039** PLA polymers are in compliance with the EN-13432 standard.

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.

SECTION 5: Drying and storage conditions

Beograde INJ039 is a compound of biodegradable polymers (such as PLA). Residual moisture content can lead to hydrolysis degradation. We recommend drying Beograde INJ039 at maximum 70°C for a period of 2 hours to maximum 4 hours. Don't overheat or dry it longer than recommended. Residual moisture content (> 0.2%) can result in lower melt stability, surface mark or bubble formation during processing.

We recommend to store the material in dry conditions below 50°C and protected from UV-light. Opened (big)bags should be used immediately or adequately sealed back up after use to avoid moisture uptake and have negative effects on the physical properties of the product. It is recommended to use Beograde granules within a time period of maximum 6 months.

Finished product made from Beograde should be stored dry and cold. Storage time and lifetime of finished products depends on processing parameters and on storage conditions (moisture, UV radiation ...).