



Beograde EXT041

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 EXT041
Product code	: 9802070041
Application	: Extrusion
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		≥ 78	%
Relative density	ISO 1183-1	1,25-1,35	g/cm ³
MFI (190°C, 2,16 kg)	ISO 1133-1	3-4	g/10min
Coloured in mass		NO	
Transmission		Opaque	
Colour material		White	
UV package		NO	
Carbon footprint ⁽²⁾	PAS 2050	3,791*	kg CO ₂ Eq/ kg
Shelf life ⁽³⁾		6	Months
Mechanical			
Tensile modulus	ISO 527-1	3250	MPa
Tensile strength	ISO 527-1	46	MPa
Break stress	ISO 527-1	12	MPa
Elongation at break	ISO 527-1	6,6	%
Flexural modulus	ISO 178	2788	MPa
Charpy impact strength (Notched 1eA , 23 °C)	ISO 179-1	6,6	kJ/m ²
HDT (B)	ISO 75-1	58	°C
Decomposition temperature (TGA)	ISO 3451-1	325	°C
Ash content (TGA)	ISO 3451-1	≤10	%

(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).

2.3. Other information

No additional information available



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SECTION 3: Processing conditions – guidelines

Feed throat	60 – 80	°C
Feed temperature	160 – 170	°C
Compression zone	170 – 180	°C
Metering zone	175 – 185	°C
Die	175 – 185	°C

If melt is too viscous, the temperatures can be increased stepwise by 5°C up to a maximum of 200°C melt temperature.

3.1 General comments

Discoloured surface and/or a burnt smell is a symptom of a too high temperature, too long residence time or uncontrolled friction heat. To counter that there is burning or damaging of the screw, barrel or tool, it's obliged to stop the machine only after it has been purged with cleaning compound. Gas formation or bubbles at the surface are a sign of insufficient degassing or a too high moisture content in the material of the co-extruder and/or main extruder.

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 extruder and bring temperature to steady state. with low viscosity, general purpose PP or PE.
2. Vacuum out hopper system to avoid contamination.
3. Introduce Beograde into the extruder at the operating conditions used in step one.
4. Once Beograde has purged, reduce barrel temperatures to desired set points.
5. At shutdown, purge machine with high viscosity polystyrene or polypropylene

Purging time: approximately 10 to 20 minutes.

At higher temperature, the dwell time of the material inside the machine shall be reduced to a minimum in order to lower the risk of degradation. Don't leave the material hot inside the machine for long periods as the material will degrade.

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 EXT041** 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 EXT041 is a compound of biodegradable polymers (such as PLA). Residual moisture content can lead to hydrolysis degradation. We recommend drying Beograde EXT041 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 (> 2.0%) 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 ...).