



Beocycle PE INJ222 UV Ocean

Material Technical Data Sheet

Date of issue: 01/12/2022 Version: 3.0

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

1.1. Product identifier

Product form	: Granulate
Name	: Beocycle PE INJ222 UV Ocean
Product code	: 9802100222
Application	: Injection moulding
Composition	: 50% recycled PE + 50% virgin PE and additives
Origin of end-of-use polymers	: This product contains Ocean - a range of post-consumer recycled (PCR) raw material originating from end-of-life maritime gear. The maritime gear is collected , cleaned , sorted and re-used by upgrading the material to a higher quality composite.

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			
Physical state		Solid	
Recycled content		>50	%
Relative density	ISO 1183-1	0,85-95	g/cm ³
MFI (190°C, 2,16 kg)	ISO 1133-1	2,0	g/10min
Coloured in mass		Original colour, no colour added by Beologic	
Colour material		Green	
UV package		Standard	
Carbon footprint ⁽²⁾	PAS 2050	1,150*	kg CO ₂ Eq/ kg
Shelf life ⁽³⁾		6	Months
Mechanical			
Tensile modulus	ISO 527-1	552	MPa
Tensile strength	ISO 527-1	19	MPa
Break stress	ISO 527-1	16	MPa
Elongation at break	ISO 527-1	541	%
Flexural modulus	ISO 178	628	MPa
Charpy impact strength (Notched 1eA , 23 °C)	ISO 179-1	15	kJ/m ²
Vicat softening point (A120)	ISO 306	120	°C
HDT (B)	ISO 75-1	56	°C

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

(2) Carbon footprint calculated by Neurologic

(3) Only if storage conditions (section 4) 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.

Neurologic 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. Circularity and ecology

Beocycle PE INJ222 UV Ocean is a sustainable compound and it has an impact on our ecology as we avoid plastic pollution of our oceans/ of our seas. We are actively working on circularity as we design this product to be durable and recyclable, depending on the end application you could even further decrease CO2 emissions.

By using **Beocycle PE INJ222 UV Ocean** as raw material choice you directly contribute to further closing the material loops, reducing landfilling, marine pollution and loss of valuable resources.

SECTION 3: Processing conditions – guidelines

Hopper	40 – 60	°C
Feeding zone	165 – 175	°C
Compression zone	175 – 185	°C
Metering zone	185 – 195	°C
Nozzle	195 – 200	°C
Mold temperature	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 Hold pressure

Beocycle PE INJ222 UV Ocean does not require much more holding pressure compared to regular PE.

3.4 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.

3.5 Injection speed

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

3.6 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.

Beocycle 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 Beocycle 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, PE or cleaning compound.

SECTION 4: Drying and storage conditions

Beocycle PE INJ222 UV Ocean is supplied with a low residual moisture content and does not need any drying. If the material needs to be dried, we recommend drying Beocycle PE INJ222 UV Ocean at max 80°C for 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 Beocycle granules within a time period of maximum 6 months.

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