



Beocycle PE EXT230 Ocean UV

Material Technical Data Sheet

Date of issue: 20/01/2023 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 EXT230 Ocean UV
Product code	: 9802100230
Application	: Extrusion
Composition	: 100% recycled 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		>98	%
Relative density	ISO 1183-1	0,90-1,00	g/cm ³
MFI (190°C, 2,16 kg)	ISO 1133-1	0,6-0,9	g/10min
Coloured in mass		Original colour, no colour added by Beologic	
Colour material		Green	
UV package		Standard	
Carbon footprint ⁽²⁾	PAS 2050	0,185*	kg CO ₂ Eq/ kg
Shelf life ⁽³⁾		6	Months
Mechanical			
Tensile modulus	ISO 527-1	925	MPa
Tensile strength	ISO 527-1	21	MPa
Break stress	ISO 527-1	8,4	MPa
Elongation at break	ISO 527-1	110	%
Flexural modulus	ISO 178	767	MPa
Charpy impact strength (Notched 1eA , 23 °C)	ISO 179-1	24	kJ/m ²
HDT (B)	ISO 75-1	54	°C

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

(2) Carbon footprint calculated by Neutrologic

(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.

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. Circularity and ecology

Beocycle PE EXT230 Ocean UV 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 EXT230 Ocean UV** 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

Extruder zone 1	150 – 170	°C
Extruder zone 2	160 – 170	°C
Extruder zone 3 – (Degassing)	160 – 180	°C
Extruder zone 4	165 – 185	°C
Extruder zone 5	165 – 185	°C
Tool zones	170 – 190	°C

3.1 Equipment

We recommend to use a conical counter rotating double screw extruder to process this material.

It is possible to also use a parallel counter/co rotating double screw extruder or single screw to process this material.

3.2 Plasticizing

We recommend to keep the residence time as short as possible. Do not turn off the extruder without a proper purging procedure.

For optimal process ability, the screw fill rate should be between 60% and 90%. Too low fill rate can cause the material to not melt completely and degassing (if used) to work insufficiently.

3.3 Melt Pressure

There may be an increase in melt pressure compared to other materials. This can be solved by increasing the temperature on the extruder without exceeding the recommendations.

If the excessive melt pressure remains, please describe the problem to your contact at Beologic.

3.4 Extrusion speed

Extrusion speed should be adjusted according to the equipment and speed of the main profile.

3.5 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 coex and/or main extruder.

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 extruder and bring temperature to steady state.
2. Vacuum out hopper system to avoid contamination.
3. Introduce Beocycle into the extruder at the operating conditions used in step one.
4. At shutdown, purge machine with cleaning compound. It's obliged to stop the machine only after it has been cleaned with cleaning compound.

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: Drying and storage conditions

Beocycle PE EXT230 Ocean UV 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 EXT230 Ocean UV 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 ...).