



Beobase 50 PVC wood COEX281

Material Technical Data Sheet

Date of issue: 10/01/2023 Version: 3.0

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

1.1. Product identifier

| | |
|--------------|---|
| Product form | : Granulate |
| Name | : Beobase 50 PVC wood COEX281 |
| Product code | : 5050030281 |
| Application | : Extrusion |
| Composition | : 50% wood fibres + 50% PVC 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 | | | |
| Physical state | | Solid | |
| Relative density | ISO 1183-1 | 1,55-1,60 | g/cm ³ |
| Coloured in mass | | NO | |
| Colour material | | Natural brown | |
| UV package | | NO | |
| CaZn stabilizer | | YES | |
| Carbon footprint ⁽²⁾ | PAS 2050 | 1,225* | kg CO ₂ Eq/ kg |
| Shelf life ⁽³⁾ | | 6 | Months |
| Mechanical | | | |
| Tensile modulus | ISO 527-1 | 4010 | MPa |
| Tensile strength | ISO 527-1 | 19 | MPa |
| Break stress | ISO 527-1 | 19 | MPa |
| Elongation at break | ISO 527-1 | 0,6 | % |
| Flexural modulus | ISO 178 | 3932 | MPa |
| Charpy impact strength | (Notched 1eA , 23 °C) | 1,6 | kJ/m ² |
| | (Unnotched 1eU, 23 °C) | 3,6 | kJ/m ² |
| HDT | (B) | 81 | °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).

2.3. Other information

No additional information available



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SECTION 3: Processing conditions – guidelines

| | | |
|-----------------------------|-----------|----|
| Extruder zone 1 | 160 – 180 | °C |
| Extruder zone 2 | 170 – 190 | °C |
| Extruder zone 3 – Degassing | 160 – 180 | °C |
| Extruder zone 4 | 160 – 190 | °C |
| Extruder zone 5 | 170 – 190 | °C |
| Tool zones | 180 – 200 | °C |

3.1 Equipment

We recommend to use a conical counter rotating double screw extruder with degassing to process this material. As this is a moisture sensitive product, insufficient degassing may cause bubbles on the surface.

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

It is not recommended to use an extruder without degassing as the gasses of the PVC + the moisture of the compound can cause damage to the equipment.

3.2 Plasticizing

We recommend to keep the residence time as short as possible and have the material always in motion. 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 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 Melt Temperature

The melt temperature should not exceed 210 °C for wood filled materials. Higher temperatures may cause the wood to carbonize or PVC to degrade in the extruder.

3.5 Extrusion speed

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

3.6 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.

Beobase 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 Beobase 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

Beobase 50 PVC wood COEX281 is supplied with a low residual moisture content and does not need any drying. Provided that the degassing on the extruder is functioning correctly. If the material needs to be dried, we recommend drying Beobase 50 PVC wood COEX281 at maximum 80°C for 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 Beobase granules within a time period of maximum 6 months.

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