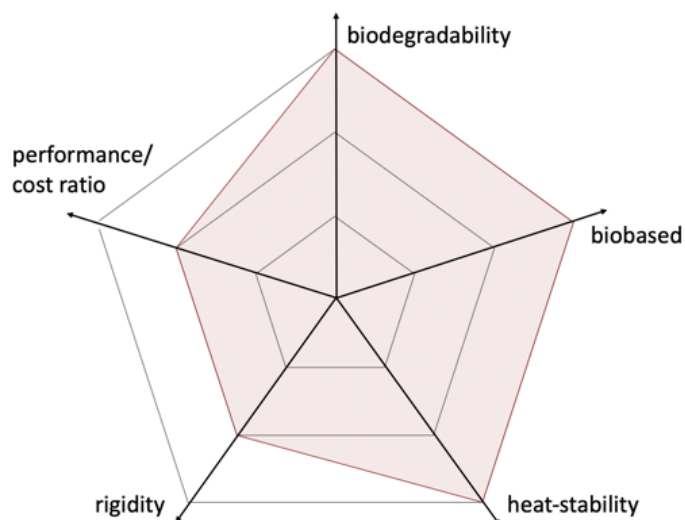




## SUMMARY

Bioblend BT grades are developed for soft and flexible injection molded application. The grades are naturally high heat-stable at temperatures up to 95°C. Bioblend BT grades are biodegradable in all conditions.

## KEY CHARACTERISTICS



- injection molding grade
- biopolymer compound, mineral filled
- can be blended with bamboo powder (B), rice husk (R), coffee husk (C), wheat straw (W) and wood powder (H)
- balanced flexibility to rigidity, good impact properties
- naturally heat-stable up to 95°C
- biodegradable in controlled (e.g. industrial compost) and non-controlled conditions (e.g. landfill, soil, roadside)
- easy to process / easy to eject
- food contact safe
- dishwasher-ok, microwave-ok
- global availability

Bioblend BT<sub>25</sub>S (B/R/C/W/H) HH is a bio-polymer polymerized of succinic acid and 1,4-butanediol. The compound is enhanced with a blend of natural mineral and organic fillers. The material can additionally be blended with bamboo powder, rice husk or coffee husk to support a natural look.

Bioblend BT<sub>25</sub>S (B/R/C/W/H) HH is designed to be completely biodegradable & compostable (microbial and enzymatic degradation) in the targeted disposal environment; it is biodegradable both in controlled (e.g. industrial compost facilities) and in non-controlled (e.g. soil, roadside, landfill) conditions. The grade offers a significant reduction in carbon footprint compared to traditional fossil-based plastics.

The material has got balanced stiffness values with good impact properties. Bioblend BT<sub>25</sub>S (B/R/C) HH offers a very good processability and flow with an easy ejection of parts from the mould. Cycle times can be kept short.

Part wall-thickness shall be greater than 1.2 mm.

TECHNICAL DATA SHEET (TDS)

TYPICAL CHARACTERISTICS			
Property	Test Method	Unit	Typical Value*
Density		g/cm <sup>3</sup>	1.3'
Melt Flow Rate (190°C/2.16 kg)	ASTM D1238	g/10 min	15
HDT-B (@ 0.46 MPa)	ASTM D648	°C	95
Melting Point	ISO 3146	°C	115
Tensile Strength (50 mm/min)	ASTM D638	Mpa	22.7
Flexural Strength	ASTM D790A	Mpa	36.1
Flexural Modulus (1% secant)	ASTM D790A	Gpa	1.2
Elongation (50 mm/min) @ Yield	ASTM D638	%	18.7
Elongation (50 mm/min) @ Break	ASTM D638	%	18.8
IZOD Notched Impact Strength (@ 23°C)	ASTM D256	J/m	44.54
Mold Shrinkage		%	0.45

\* Typical values; properties are minimum values and might be slightly higher than indicated (for density and mold shrinkage, maximum values, slightly lower). All mechanical properties as per ASTM D638 Type I specimen injection moulded in accordance with ASTM D4101.



food contact safe



dishwasher safe



home compostable



biodegradable in controlled condition



biodegradable in non controlled condition

## TYPICAL APPLICATIONS

Typical applications where Bioblend BT<sub>25</sub>S (B/R/C/W/H) HH is used for are:

- consumer goods
- kitchen ware (single use/season use cutlery, cups, boxes, trays, baby spoons)
- toys
- packaging, rigid packaging
- personal care (tooth brush handle, soap box)
- beauty (crème containers)
- outdoor





## PROCESS GUIDELINES

Bioblend BT<sub>25S</sub> (B/R/C/W/H) HH can be processed on conventional injection moulding equipment. The material is sensitive to moisture and high temperatures (above 190°C); high shear rates shall be avoided. The material needs to be dried before processing.

1. PREPERATION	
Storage	Keep the material tightly closed in a dry and cool place. Keep away from heat and sources of ignition and avoid exposure to moisture, dampness. Do not stor outdoors. Use material within 6 month after delivery.
Drying	Dry the material for a minimum of 4 - 6 hours at 80° C. A moisture content of less than 0.07% (700 ppm) is required / less than 0.10% (1000 ppm) is recommended. Avoid exposing the material to atmospheric conditions after drying; process immediately.
Injection Moulding Start-Up	<ol style="list-style-type: none"> <li>1. Vacuum-out/clean hopper and air-suction system to avoid contamination.</li> <li>2. Clean/purge the barrel.</li> <li>3. Once the barrel has been cleaned, reduce barrel temperatures to the right set points (see next section).</li> <li>4. Introduce the compounds into the barrel only after all barrel temperatures are at target set points. The material cannot enter into the barrel when temperatures are above 190°C in any section!</li> <li>5. Make sure that the mold is heated up to a temperature of around 50°C.</li> <li>6. Start with a moderate holding pressure and keep it applied for long initially.</li> <li>7. Start with long cooling times before opening the mold: <math>t_{cooling} \text{ (in sec)} &gt; \text{biggest wall-thickness (in mm)} \times 10</math></li> <li>8. After start-up, the injection moulding process shall be optimized step-by-step to industry relevant process paramaters</li> </ol>
SDS	Read and understand the Material Safety Data Sheet (SDS) provided with the material.

2. INJECTION MOULDING PROCESS PARAMETERS	
Hopper Temperature	50 °C
Feed Zone Temperature	170°C
Compression Zone Temperature	180°C
Metering Zone Temperature	190°C
Nozzle Temperature	185° C
Mould Temperature	30°C – 40°C
Screw Speed	low – medium
Injection Pressure	medium
Holding Pressure	low – medium / long
Injection Speed	slow – medium
Cooling Time	medium - long



**Get in touch with our experts for more information.**

**[support@nature2need.com](mailto:support@nature2need.com)**

**<http://nature2need.com>**

The material has to be stored, handled and processed according to nature2need Safety Data Sheets (SDS) & Process Guidelines. In some cases, mold deposits may develop. These deposits shall be removed periodically; we recommend a mold cleaning cycle of every 50.000 shots. This information and data presented herein is true and best as per our knowledge. We make no warranty, expressed or implied, regarding the performance or otherwise. The user of the information is advised to obtain the latest details from the authorised representatives of the company, as the information is subject to change based on the research and development work undertaken by the company.