nature2need
Spectadur PB30MB

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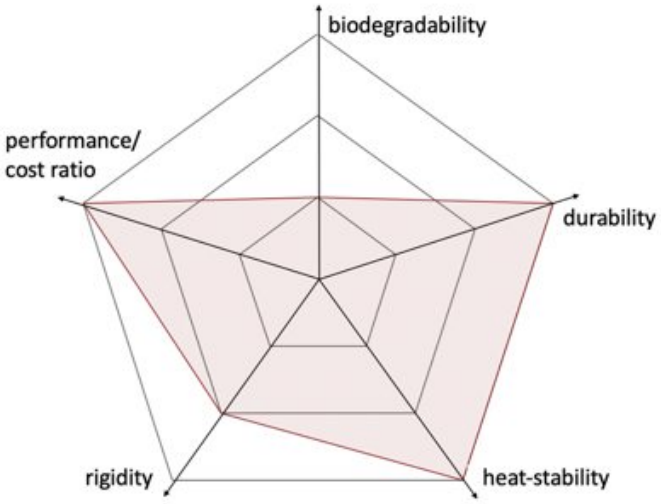
SUMMARY

Spectadur PB30MB is a 30 w.-% bamboo fiber reinforced Poylpropylene (PP) compound. The grade is used for General Purpose injection moulding applications. It exhibits good impact properties as well as balanced flow, strength and stiffness properties. Spectadur PB30MB is a durable grade.

KEY CHARACTERISTICS



- injection molding grade
- environmentally sustainable
- standard grade reinforced with 30 w.-% bamboo fiber, can be filled with rice husk, coffee husk, wheat straw and wood powder instead
- balanced flow, good impact, strength and stiffness properties
- naturally heat-stable up to 135 °C
- durable, can be recycled (symbol 7)
- food contact safe, toy safe
- BPI- & melamine free, ROHS compliant
- top-rack dishwasher safe
- microwave-ok
- global availability

Spectadur is PB30MB is modified to deliver improved impact properties combined with enhanced strength and stiffness values. The material is UV/AO stabilized. Spectadur PB30MB is a durable grade.

Spectadur PB30MB is reinforced with 30 w.-% mechanically extracted (no chemicals used) bamboo fiber which replaces 30 w.-% of virgin PP with natural biomass. Plants and bamboo absorb atmospheric carbon dioxide (CO_2) as they grow. Using this biomass to create products constitutes a more permanent removal of CO_2 from the atmosphere.

Spectadur PB30MB is reinforced with bamboo fibers or powder (B); alternatively it can be blended with rice husk (R), coffee husk (K), wheat straw (W), wood powder (H) or any other natural fiber, organic filler or agricultural waste. This information is exemplary for a bamboo fiber reinforced grade.

Part wall-thickness shall be greater than 1.70 mm.

All Spectadur grades can be delivered according to customer specification or can be blended with any traditional color masterbatch during part manufacturing.

TECHNICAL DATA SHEET (TDS)

TYPICAL CHARACTERISTICS			
Property	**Test Method**	**Unit**	**Typical Value***
Density		g/cm^3	1.01
Melt Flow Rate (190°C/2.16 kg)	ASTM D1238	g/10 min	23.2
HDT-B (@ 0.46 MPa)	ASTM D648	°C	135.0
Tensile Strength (50 mm/min)	ASTM D638	Mpa	28.2
Flexural Strength	ASTM D790A	Mpa	40.4
Flexural Modulus (1% secant)	ASTM D790A	Gpa	2.40
Elongation (50 mm/min) @ Yield	ASTM D638	%	8.2
Elongation (50 mm/min) @ Break	ASTM D638	%	8.4
IZOD Notched Impact Strength (@ 23°C)	ASTM D256	J/m	38.2
Mold Shrinkage		%	0.8

* 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.

TYPICAL APPLICATIONS

Typical applications where Spectadur PB30MB is used for are:

- consumer goods of all kinds where currently PP is used
- kitchen ware (cutlery, cups, boxes, trays)
- pet ware
- toys
- packaging, rigid packaging
- personal care (tooth brush handle, soap box, one time shaver)
- sports & outdoor

PROCESS GUIDELINES

Spectadur PB30MB can be processed on conventional injection moulding equipment. The material is sensitive to moisture and high temperatures (above 175°C / 350°F); high shear rates shall be avoided. The matrial 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. Avoid exposure to moisture, dampness.
Drying	Dry the material for a minimum of 2 to 4 hours at 120° C (250°F), depending on the efficiency of the drying equipment. A moisture content of less than 0.010% (100 ppm) is recommended. The material should not be exposed to atmospheric conditions after drying; it shall be processed immediately. Keep the package sealed until ready to use.
Injection Moulding Start-Up	The material is not compatible with a wide variety of other resins, and following purging sequences should be followed: 1. Clean barrel and bring temperatures to steady state with high MFI, general purpose PP or PE. 2. Vacuum out hopper system to avoid contamination. Set the hopper (heated hopper) temperature to 90° C (200° F). 3. Once the material has been purged, reduce barrel temperatures to the right set points as given in the next section. **4. Introduce the compounds into the barrel ONLY after ALL barrel temperatures are at right set points as given in the next section. The material cannot enter into the injection moulding machines when temperatures are still above 175° C (350° F).**
SDS & Technical Datasheet	Read and understand the SDS and Technical Data Sheets provided.

2. INJECTION MOULDING PROCESS PARAMETERS		
Hopper Temperature	80° C to 100° C	176° F to 212° F
Feed Zone Temperature	155° C to 160° C	310° F to 320° F
Compression Zone Temperature	160° C to 165° C	320° F to 330° F
Metering Zone Temperature	165° C to 170° C	330° F to 338° F
Nozzle Temperature	170° C to 175° C	338° F to 345° F
Mold Temperature	60° C to 65° C	130° F to 149° F
Screw Speed	100 - 200 rpm	
Injection Pressure	medium	
Back Pressure	low – medium	
Injection Speed	medium	

3. POST PROCESSING	
Storage	Keep the unused material tightly closed in a dry and cool place.
Injection Moulding Shutdown	Clean barrel and bring temperatures to steady state with high MFI, general purpose PP.

4. ADDITIONAL INFORMATION

1. It is suggested to use hot runner moulds to get better surface quality.
2. We advise to use a magnetic trap in the feeding system of the injection moulding machine; this is advisable for all recycled materials or (partly) crushed materials.
3. Unsufficient drying of the compound may lead to brownish mold deposits which shall be cleaned periodically.

Spectadur rPB30MB – nature2need in-house recycled grade

Spectadur PB30MB is also available with a 50 w.-% recycled content and supports the circular economy. The recycled material used are nature2need in-house production by-products (mainly cut-off waste of Spectadur sheet-extrusion) - strictly controlled. The grade is called Spectadur rPB30MB. Properties are very similar to virgin Spectadur PB30MB compounds.

In addition, nature2need offers complete recycling concepts for your products. We accept your end-of-life products back into our production and use a reliable percentage into new compounds for your manufacturing.

Get in touch with our experts for more information.
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