

PBS - TH803S - Bio

Description

PBS - TH803S, is a bio-degradable aliphatic co-polyester, characterized by high elasticity and a low melting point. TH803S - Bio is for almost 50% polymerized from bio-based succinic acid, coming from beans of the Ricinus tree. Once exposed to environments where composting micro-organisms are present, PBS resin degrades into water, CO₂ and biomass, with a speed depending on the dimensions, material structure and the external circumstances. The resin can also be recycled. In non-composting environments products made with PBS have durable properties. PBS is in many ways comparable to PP and it can be applied in most common production processes like foil, filament or fiber extrusion, blow moulding and injection moulding.

Characteristics

Typical property	Unit	Method	Grade 4-8	Grade 16-20	Grade 25-30
			Value	Value	Value
MFR 190°C, 2,16 kg	g/10 min	ISO 1133	7,5	16-20	25-30
Density	g/cm ³	ISO 1183	1,25	1,27	1,27
Melting point	°C	ISO 11357	114	114	114
Tensile Strength	MPa	ISO 527	42	38	35
Elongation	%	ISO 527	480	270	160
Flexural Modulus	MPa	ISO178:2010/Amd.1:2013	na	610	600
HDT B/Tf0.45	°C	ISO75-1 (2013&ISO75-2:2)	89	90	89
Shore Hardness	D/15	ISO868	na	68	66
Impact Strength- Izod	KJ/m ²	ISO180:2000/Amd.2:2013	na	6	5,5
Moisture	%	GB/T14190	≤0,06	≤0,05	≤0,05
Carboxyl End-Groups	Mol/MT	GB/T14190	na	15-20	15-20
Color				Natural white	

Bio-degradability

Home compostability according EN13432, certified by TÜV Austria, for films < 45 µm
Industrial compostability according EN13432, certified by TÜV Austria, for films < 80 µm

Food approval

PBS TH803S is approved for food contact applications, according EC Regulation No 10/2011

Packaging

25 kg aluminum bag, a 20 ft container can load 17 MT
800 kg aluminum big bag, a 20 ft container can load 16 MT

Storage

Temperatures during transportation and storage should not exceed 40 °C. Keep resin in dry and ventilated warehouse to prevent moisture. Avoid contacting with soil, water and sludge, and exposing to direct sunlight and extreme temperature. The maximum shelf life is 2 years in ambient temperature of 23 °C if the package has been tightly sealed.

Processing recommendations

It is recommended to pre-dry the material prior to getting the best processing performance. If the moisture of the resin is less than 0,05% pre-drying may not be needed. Typical drying condition is 2 hours at 80 °C.
The material can be extruded on common extruders. The extruder should be cleaned properly, noting that optimal extrusion temperatures are relatively low, preferably 140 - 160 °C. To obtain lower melt viscosities, temperatures can be increased to a maximum of 210 °C. PBS TH803S does not contain thermostabilizers and long extruder residence times at higher temperatures may cause gelation and decreasing viscosities. Stabilizing masterbatches for PBS can be used, please contact Pycnoplast for assistance.

Suggested applications

Compostable and bio-sourced injection moulded products, extruded films, foils, foams, filaments, fibers or yarns for:

- Horti- or agricultural applications
 - Textiles and textile lamination
 - Packaging
- Plasticizer in PLA or other bio-compounds

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