DATA SHEET: FLOREON BIO TECH

Grade	Applications	Features	Benefits
Floreon Bio-Tech Compostable Grade	Injection Moulding Toys Cosmetic packaging Coffee capsules Food-service items Applications typically served by PS or ABS	High renewable content Industrially compostable	Low carbon footprint, multiple end of life options

General Information

Floreon Injection Bio Tech grade is intended for injection moulded applications, with high rigidity and good impact strength. The material is a compound of polylactic acid (PLA) and other biodegradable polyesters which enhance the melt flow rate and toughness of the material.

Product Description

- PLA based compound with high renewable content.
- All components certified biodegradable in industrial composting according to EN13432
- Nucleated to allow high crystallinity and heat deflection temperature.

Predicted Physical Properties*

Physical	Value	Unit	Test Method
Melt Flow Index (190 °C/ 2.16 kg) Specific Gravity (Higher melt flow grade available on request).	15 1.26	g/ 10 min g/cm3	Internal method based on ISO 1133 and ASTM D792

Mechanical	Value	Unit	Test Method
Young's Modulus (23 °C) Tensile Strength Strain at break	3.1 47 30	GPa MPa %	ISO 527

Impact	Value	Unit	Test Method
Notched Izod Impact Strength (23 °C)	6.6	kJ/ m2	ISO 180

Thermal	Value	Unit	Test Method
Heat Deflection Temperature Crystalline** Melting Temperature	55 90 175	°C °C °C	Internal method based on ISO 75-2/B DSC

Continued...

Shrinkage	Value	Unit	Test Method
(25°C)	0.2 – 0.4	%	ASTM
Crystalline (95 ºC)**	1.7 – 1.8	%	D638

* Typical properties only, subject to change, not to be construed as specifications.
** Sample moulded in hot (95 ºC) mould.

Processing Information

Floreon Bio Tech grade can be processed on general purpose injection moulding equipment and a screw designed to minimize shear and residence time will produce the best results. The material is typically injection moulded using a melt temperature of 200 °C with a mould temperature of 25 °C (or 95 °C for high HDT). This grade can be extruded from as low a temperature as 175 °C, but processing temperatures should not exceed 240 °C.

Recommended Machine Settings Injection

Processing Temperature Profile

Melt Temperature	200 °C
Feed Throat	20 °C
Feed Temperature	60 °C
Compression Section	165 °C
Metering Section	190°C
Nozzle	190 °C
Mould	25/95 °C

Drying

Floreon resins must be dry before use in melt processing; a water content of less than 250 ppm is recommended, otherwise product performance may be affected. The solid resin will not be damaged by absorption of atmospheric moisture providing it is stored in a cool environment at temperatures not exceeding 25 ºC. As with unmodified PLA, Floreon resins should not be left in the barrel at high temperatures for extended periods of time (10 minutes and above) as this will degrade the material resulting in a drop in viscosity and resin integrity.
Drying under vacuum at a maximum temperature of 90 °C for a period of 2 hours is recommended to ensure best results. The material can be dried above this temperature, but some ‘clumping’ may occur, with pellets sticking together. This is reversible and the pellets can be separated on cooling with mild agitation.