BIO

Impact Protection

Mitigate fear. Protect your devices.

D3O® Bio is the world's leading clear plant-based impact protection material.

Providing the same protection D3O is renowned for, D3O® Bio saves on fossil-based resources and can be used in both crystal-clear and colour products.

D3O® Bio helps reduce water consumption and allows for sustainable waste management, offering the ability to recycle material waste from the production process directly back into it, avoiding post-industrial waste.

Compatible with injection moulding or similar processes and used for the protection of consumer electronics, D3O® Bio is the solution to protect devices, people and planet.

Material Features

- Same trusted D3O® Protection
- Suitable for clear and colour products
- Leading plant-based content
- Made from renewable resources
- Optimal and consistent melt flow TPE grade for trouble-free, high-quality moulding

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Typical Properties

	Method reference*	Test Condition	D3O® Bio
Density (kg/m³)	ISO 845:2009	-	1160.0
MFR (g/10 min)	ISO 1133	200°C, 2.16 kg	9.9
Hardness (Shore A)	ASTM D2240 - 05 (2010)	3s	93.3
Tensile Strength at Break (MPa)	ISO 37:2017 Type 1	500mm/min	20.7**
Tensile Elongation at Break (%)	ISO 37:2017 Type 1	500mm/min	499.3**
Tear Strength (N/mm)	ASTM D624 Type T	50mm/min	8.4**
Flexural Modulus (kPa)	DTS052	-	-
Shrinkage (at 150°C)	-	-	0.8%
Abrasion Resistance (mg/100 cycles)	ISO 5470-1	H18, 9.8N	4.5**
Transparency (%)	DTS086	-	81.0
Plant-based content (%)	-	-	45.0
Suitable for opaque coloured products	-	-	✓
Suitable for translucent products	-	-	✓
Suitable for clear products	-	-	✓

Injection Moulding Conditions

Drying Conditions	Temperature (°C)	70
	Time (h)	4
	Equipment	Dehumidified drying oven (vacuum)
Moulding Conditions	Screw Speed	Medium
	Injection Speed	Medium - Low
	Injection Pressure	Medium - Low
	Holding Pressure	High
	Back Pressure	Medium - Low
	Feeder (°C)	190 - 230
	Zone 1 (°C)	180 - 220
	Zone 2 (°C)	180 - 215
	Nozzle (°C)	170 - 180
	Mould (°C)	50

- Water cooling recommended on bottom of the hopper
- Cycle times dependant on section thickness and temperature
- Parts must be sufficiently cooled (20-40s) before demoulding to prevent distortion
- Part must be removed carefully to prevent deformation
- The shelf life of the TPE granules is 12 months from delivery if storage instructions are observed and the product is stored in the unopened original D3O TPE packaging. Store in dry conditions at room temperature (15-30 °C) away from heat sources and direct sunlight.
- This material is plant based, which may cause visual irregularities in the products

*Values shown represent typical product characteristics
**Estimated

D3O®