

BELLAND® Resins for Extrusion, Thermoforming and Injection Moulding

Technical Information

BELLAND® Polymers are terpolymers based on styrene and acrylates, which are soluble in aqueous alkaline solutions. This unique property allows a simple recycling of the used articles. BELLAND® Polymers are amorphous thermoplastics which can be processed by extrusion, thermoforming or injection moulding. The products comply with the European requirements for food contact.

Sheet Extrusion and Thermoforming

Processing is performed on conventional equipment. The best results are achieved on extrusion lines equipped with degassing equipment.

The typical extrusion temperature is about 200 °C. The melting temperature should not exceed 220 °C significantly. Grooved feeding zones should not be cut too deep. Product change from e.g. Polystyrene to BELLAND® Material is uncomplicated. It can not be recommended to apply processing temperatures above 230°C in combination with a long residence time, due to a tendency to crosslinking. The extrusion equipment should not be shut down if filled with BELLAND® Material. Edge trim and punching lattice can be shredded and fed back into the extruder. In an on line operation up to 50% of shredded material can be used.

Cups, dishes and plates are produced on thermoforming machines with up to 48 molds. Sheet is extruded from 0.2 to 1.8 mm thickness.

Articles from BELLAND® Material are easily printable with conventional printing methods without the need of surface treatment.

Typical Parameters on extrusion lines:

Extruder temperature	180°C – 200°C
Adapter and die	200°C – 220°C
Calender heating	70°C – 100°C
Thermoforming heating temperatures	240°C – 260°C

Injection moulding

The processing temperatures depend on the type of machine and are typically between 230°C and 250°C. Cycle times are similar to Polystyrene.

Data sheet**BELLAND® Resin BelleX 1000/1010****for Extrusion and Thermoforming**

BelleX 1000 is translucent

BelleX 1010 is white

Properties*

MFI 200°C/10 kg 4 g/10 min

Specific gravity 1.06 g/cm³

Glass transition temperature 112 °C

Extruded sheet:

Tensile strength 40 N/mm²

Elongation at break 9 %

Tensile impact strength 180 kJ/m²

Flex¹ test (Belland test) 30

Processing temperature: 200°C – 220°C

European food contact approval

*Typical values, not to be construed as specification

® A product of BellandTechnology

¹ Score of bending to break

Data sheet

BELLAND® Resin BelleX 1100/1110

for Injection moulding

Properties*

BelleX 1100 is translucent
BelleX 1110 is white

MFI 210°C/5 kg	6 g/10 min
Specific Gravity	1.06 g/cm ³
Glass transition temperature	112°C
Tensile strength ¹	45 N/mm ²
Elongation ¹	6 %
Charpy impact strength	130 kJ/m ²
Shrink	0.5 %

Parameters for injection moulding:

Barrel temperature	230°C – 250°C
Die temperature	220°C – 230°C
Hot runners	260°C

European food contact approval

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¹ according to DIN EN ISO 527