

TECHNICAL DATA SHEET

RECYCLED PACKAGING EXPANDED POLYSTYRENE - PACKAGING GRADE

Product description

Using a novel dissolution and recovery method, expanded polystyrene (EPS) has been processed to produce a general purpose polystyrene of medium clarity.

Processing

rEPS-1 can be injection molded at temperatures between 170°C and 210°C, with the preferred temperature around 190°C. The recommended mold temperature is between 10°C and 60°C. The extrusion melt temperature should not exceed 220°C.

Applications

rEPS-1 is suitable for use as a general purpose polystyrene. (TBC)

Physical properties

Physical Properties	Tested against ASTM method:	Typical Value ¹
Specific gravity (at 21°C)	D-792	1.04 g/cm ³
Melt-flow rate (g/10 min) (200°C degrees /5 g weight)	D-1238	7.7 ± 0.5 g/10min

Mechanical properties

Mechanical Property	ASTM method:	Typical Value ²
Tensile strength (MPa)	D-638	45.8
Elongation at break (%)	D-638	7.6
Stress at yield (0.2% Offset) (MPa)	D-638	20.1
Izod impact (notched) (J/M)	D-256	TBC

¹ Typical values; not to be construed as specification limits

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Physical form and storage

rEPS-1 should be kept in its original containers in a cool, dry place. Avoid direct exposure to sunlight.

Product safety

The polystyrene rEPS-1 may release styrene monomer vapours during processing and the concentration is expected to be minimal. Processing of the product in a well-ventilated area is recommended.

Note

The data contained in this publication is provided based on the testing and knowledge we have of the materials. We recommend that additional testing is carried out by the user if they have need of additional information.

Processing parameters

Sample name	Sample 1 (rEPS rx6/24) (packaging grade)
Molding machine	BOY 35M
Mold	ISO Tensile
Machine parameters	
Barrel position (mm)	2.0/5.0/10.0/ 15.0/20.0/61.0
injection pressure (Bar)	80/120
injection speed (mm/s)	100/55/35
injection time (s)	4.5
screw speed (rpm)	100
back pressure (bar)	20
hold time (s)	10.0/10.0/5.0
Hold pressure (bar)	40/40/40/50
cooling time (s)	25
Process temperatures	
Nozzle (°C)	180
Barrel (°C) zones 1/2/3	180/180/180
Mold (°C)	22
Please note any other observations	The barrel temperature was slightly too low for the formulation rx6/24.

Prepared by Callaghan Innovation for Mexicana Limited (2014)

Decomposition onset (°C)	315
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