

Expanded Polylactic Acid (E-PLA)

An eco-friendly alternative to EPS



E-PLA

Biopolymer Network Limited has developed a novel and patent pending process to manufacture and mould low density expanded polylactic acid (E-PLA) foam articles using carbon dioxide as a blowing agent. This provides a sustainably derived bio-based alternative to expanded polystyrene (EPS).

DROP-IN TECHNOLOGY FOR EPS MOULDERS

The E-PLA technology has been developed as a 'drop-in' process for existing EPS manufacturers. The process uses commercially available PLA pellets as feedstock into a pre-treatment process that is simple, stream-lined, robust and scalable; requiring only a small investment in off-the-shelf capital equipment. Following pre-treatment beads are then expanded and moulded into shaped articles using conventional EPS production equipment.

LICENSING OPPORTUNITY

Biopolymer Network has filed a patent (PCT/IB2008/050321) on its E-PLA process and seeks to license its technology to interested EPS manufacturers and other producers of packaging and foam materials.



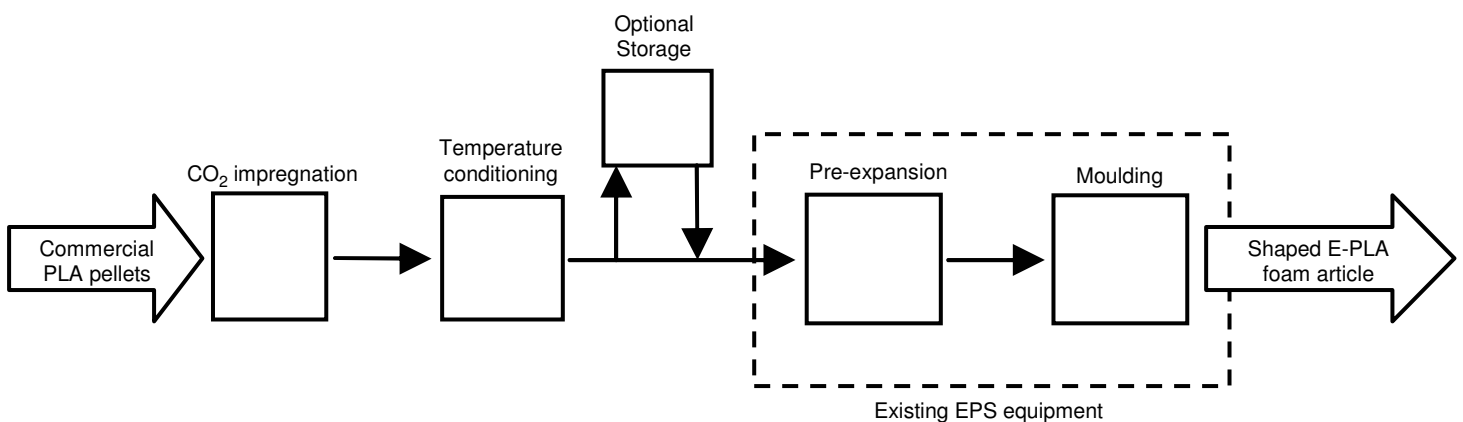
Applications range from packaging, construction, furniture, sports goods, medical and many more.

Laboratory tests have shown the following properties of E-PLA compared to EPS

	EPS	E-PLA			
Density (g/L)	25	25	35	60	100
Thermal resistance (m ² .K/W)	~0.68	~0.69			
Thermal conductivity (W/m.k)	~0.035	~0.035			
Compressive modulus (MPa)	5.3	2.9	5.3	11.3	20.9
Compressive strength (MPa)	0.12	0.07	0.12	0.25	0.45
Compressive stress at 10% strain (MPa)	0.16	0.10	0.16	0.33	0.60
Shear modulus (MPa)	3.2	3.0	3.7	5.4	8.0
Shear strength (MPa)	0.12	0.11	0.15	0.25	0.41
Shear stress, maximum (MPa)	0.17	0.18	0.23	0.36	0.55

Standard test methods: Compression ASTM D1621-00; Shear ASTM C273-00

Schematic of E-PLA manufacture





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