

# Lightweight Green Solution

## HOWPOL EPP (Expanded Polypropylene)

Based on LOTTE Chemical's own PP foaming technology, HOWPOL EPP bead foam is a non-toxic, eco-friendly and recyclable product, as it is foamed with non-crosslinked plastics in an eco-friendly CO<sub>2</sub> process. And it can produce a wide range of molding products with different shapes and colors, while exhibiting excellent mechanical property and light weight. It is used not only for automotive parts and electronics packaging, but also for special applications such as marine buoys.

### General

- HP-B4.5P
- HP-B11P
- HP-B15P
- HP-B30P
- HP-W11P
- HP-W15P
- HP-W30P

### Functional

- HP-B15P\_AS
- HP-P13.5P\_AS
- HP-BI22P\_AS
- HP-B22P\_EC
- HP-Gr15P\_FR

### HRF (High Resilience Foam)

- HP HRF-B10P
- HP HRF-B30P
- HP HRF-W30P
- HP HRF-W40P

### EPE (Expanded PE)

- HP EPE-W20P

### Manufacturing technology of EPP marine buoys

An eco-friendly EPP (expanded polypropylene) with buoyancy-conversion property that replaces the existing EPS (expanded polystyrene)



Application of high-elastic particle foam  
EPP substitute



Excellent impact/tensile/flexural strength & tensile strain  
A reduction in damage that stems from the frequently changing marine environment and rope tightening



Improved processability  
A variety of designs available, cost competitiveness

2020 Korean NET Certification



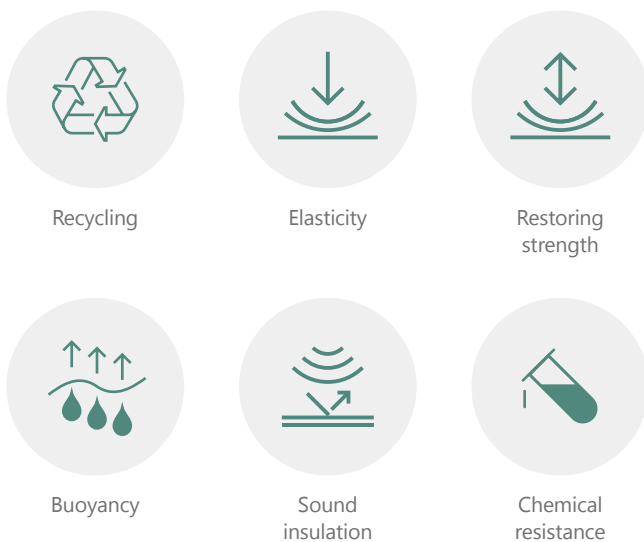
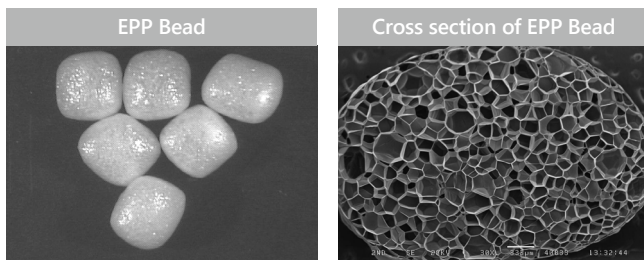
# Expanded Polypropylene Solution

Product	Key Features	Applications
General	<ul style="list-style-type: none"> <li>Non-crosslinked PP foam material</li> <li>Crosslinking agent and blowing agent not included</li> <li>Excellent resistance against repeated impacts</li> <li>Reusable &amp; Various colors and magnifications</li> </ul>	Delivery box (Reusable/Returnable), Self-assembly furniture, Bee hive, Toy Sun-visor, Energy absorber, Tool box, spacer
Functional	<ul style="list-style-type: none"> <li>Anti-static: Surface resistance <math>10^{10-12}\Omega/\text{sq.}</math> (Various colors)</li> </ul>	E&E and component packaging (Anti-static)
	<ul style="list-style-type: none"> <li>Semi-conducting: Surface resistance <math>10^5\Omega/\text{sq.}</math> under (Black)</li> <li>Flame retardant: UL94 HBF ~ HF-1 (Halogen/Hon-halogen, Black unavailable)</li> </ul>	Pads for semiconductor manufacturing, High precision E&E component (Anti-static) Building & Construction, Interior parts
High elasticity (HRF: High Resilience Foam)	<ul style="list-style-type: none"> <li>Excellent elasticity (bending strength, elongation at break) and cushioning</li> <li>More eco-friendly than PUF* (no toxic gas generated during combustion),</li> <li>Light weight, excellent heat aging resistance (yellowing)</li> </ul>	Seat cushion, Buoy, Sporting goods, Marine packing (dunnage), Cooler box

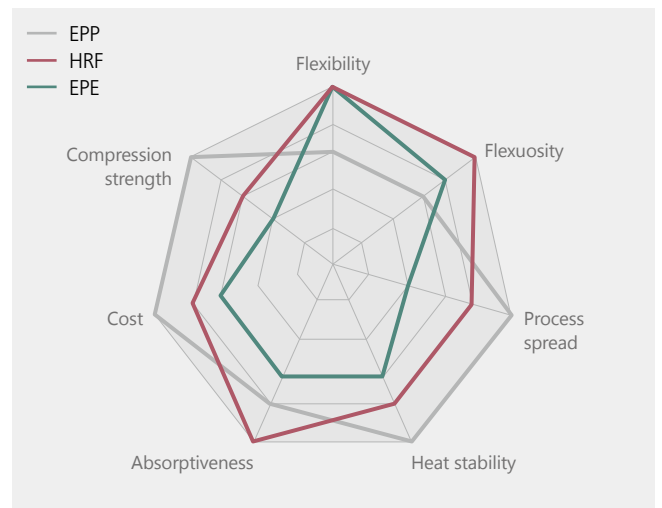
\* PUF-Polyurethane foam

## Key Features & Properties

### Key features



### Properties (EPP, HRF, EPE)



### Flexural Test

