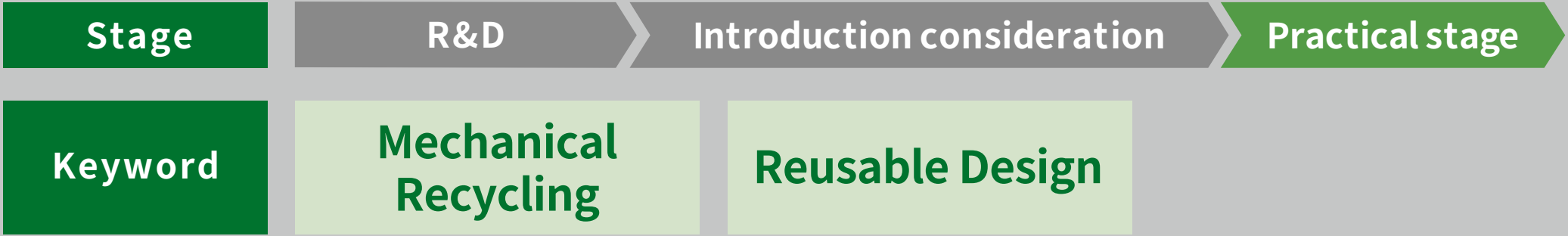




Mechanically Recycled Polypropylene for Automotive Applications

Polypropylene composites for automobile interiors and exteriors

NOVAORBIS™-MR



Use

Bumper / Instrument Panel / Door Trim etc.

Challenge

- Demand for mechanically recycled polypropylene is increasing in response to the EU ELV Regulation and the recycling targets announced by JAMA.
- Using mechanically recycled polypropylene, there are several quality issues compared with virgin materials, including physical properties and appearance quality.

Solution

			General PP①	General PP②	Reinforced PP①	Reinforced PP②
Application			General parts	Door trim, etc.	Bumper, etc.	Instrument panel, etc.
Grade			RC004	RC005	RC006	RC007
PCR Content			50%	25%	25%	25%
MFR(230°C, 2.16kg)	g/10min		25	25	30	30
Density	g/cm³		0.90	0.90	1.03	1.04
Tensile Modulus	23°C	MPa	1,300	1,050	2,100	2,350
Elongation	23°C	%	60	≥100	50	30
Charpy Impact Strength	23°C	kJ/m²	10	20	35	34
	-30°C	kJ/m²	4.8	5.3	3.1	3.3

- By the selection of high-quality recycled materials and JPP's formulation design technologies, we developed recycled materials with performance comparable to virgin materials.
- We developed materials that meet the targets set by JAMA.

Material	Tensile Modulus [MPa]	Charpy Impact Strength [kJ/m²]
General PP②	~1,000	~10
General PP①	~1,300	~10
Reinforced PP①	~1,900	~25
Reinforced PP②	~2,300	~35

Benefit

- Mechanically recycled polypropylene with performance comparable to virgin materials can be applied to various automotive components.
- Customization is available to meet individual customer requirements, including physical properties, PCR content, color and other specifications.

Stage

R&D

Introduction consideration

Practical stage

Keyword

Mechanical
Recycling

Lightweighting

Reusable
Design

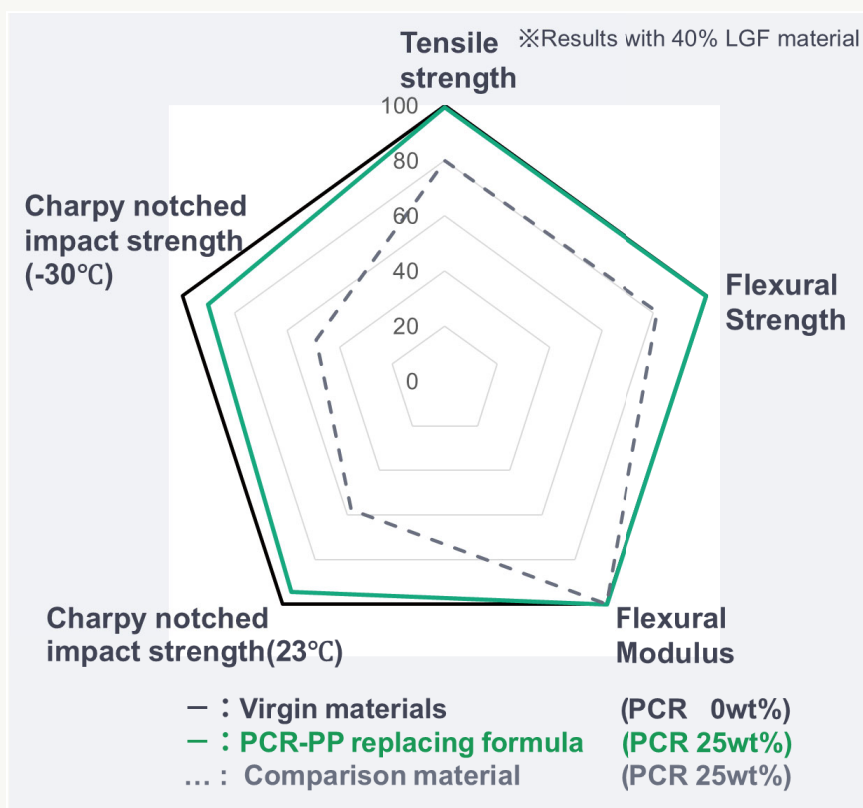
Use

Backdoor inner/ Front End Module etc.

Challenge

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Solution



Virgin PP 60%	GF 40%	Virgin materials
PCR-PP 25%	Virgin PP 35%	GF 40%
ELV 6.25%	PCR-PP 18.75%	Virgin PP 35%
	GF 40%	Future vision -EU EVL Regulation Compliant Version-

※PCR : Post-consumer recycled material
※ELV : End of Life Vehicle

- Through our proprietary technology and high-quality PCR materials, we have developed high-quality glass fiber-reinforced PP with performance comparable to virgin materials.



Benefit

- Applicable to components requiring a high-quality unpainted appearance, such as backdoor inners.

Contact |  Japan Polypropylene Corporation

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