

Polypropylene for Decorative Films

Stage	R&D	Introduction consideration	Practical stage
Keyword	Mechanical Recycling	Monomaterial	Design for Recycling

Use	Automotive Interior & Exterior Parts / Home Appliances / Housing Equipment Parts
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Challenge

- The adoption of automotive components designed for resource circularity is increasingly required to support the transition to a circular economy and comply with regulations such as ELV.
- Reducing environmental impacts across the entire supply chain, including GHG emissions and VOCs, is becoming an increasingly important requirement.

Solution

- Excellent formability:**
High-elongation PP decorative films enable paint-free applications through superior conformability to complex shapes. Achieves conformability equal to or better than conventional PMMA and ABS decorative films.
- Mono-material design:** Thermal bonding between PP materials eliminates the need for adhesives and simplifies the manufacturing process.

Amount of Sagging (mm)

Heating Time (sec)

New PP

Conv. PP

Excellent Moldability

Inferior Moldability

Painted Product

Grinding

Remolding

Decorative PP Film

Paint fragments are scattered.

No Paint Fragments

23°C Charpy impact strength Rate of change* (%)

Painted product recycling

PMMA Film

PP Film

*Rate of change=Recycled product value/Original value×100

Elongational Strain at break Rate of change* (%)

Painted product recycling

PMMA Film

PP Film

*Rate of change=Recycled product value/Original value×100

Benefit

- Enables circular design for future Car-to-Car recycling and supports the use of recycled materials.
- Contributes to lower VOC emissions by eliminating adhesives, while improving production efficiency through process simplification and reducing environmental impacts in manufacturing.
- Expands design flexibility through film-based decorative options such as printing and embossing.