



C3000 PERFORMANCE ENHANCEMENT SERIES

The CirKular+™ C3000 Performance Enhancement Series represents a family of block copolymers based on styrene and butadiene brought to market by Kraton Polymers. CirKular+™ products are compatibilizers and performance enhancement additives for upcycling mixed post-consumer (PCR) and post-industrial (PIR) polyolefinic streams suitable for multiple end use applications.

Depending on the target performance requirements and different resins used in the formulation, typical levels of CirKular+ addition range from 3 to 10% weight. CirKular+™ C3000 Performance Enhancement Series is manufactured in Europe and is supplied in a form of a dusted porous pellet.

VERSATILE END USE, PROCESSING AND FUNCTIONALITY

- ▶ Compounding and Dry Blending
- ▶ Extrusion, Injection and Blow Molding
- ▶ Films and Thermoforming

Recommended Processing Conditions Guide is available on request and should be reviewed before use.

POTENTIAL APPLICATIONS

- ▶ Rigid Packaging (Food or Non-food)¹
- ▶ Flexible Packaging and Films
- ▶ Automotive
- ▶ Consumer Products
- ▶ Industrial
- ▶ Building and Construction

¹FDA Food Contact status provided upon request

Property	Test Methods	C3000
Melt Flow Rate (200 °C/5 kg) (g/10 min)	ASTM D 1238	11
Tensile Strength* (MPa)	ASTM D 412	28
Elongation at break* (%)	ASTM D 412	1100
300% Modulus* (MPa)	ASTM D 412	3.8
Hardness Shore A (10 s)**	ASTM D 2240	70
Specific Gravity	ASTM D 792	0.94

These are typical values and should not be used to set specifications.

Features & Benefits

END PRODUCT DURABILITY AND AESTHETICS

- ▶ Superior mechanical properties: Impact strength at room and low temperature, ductility and toughness
- ▶ Flexibility in tailoring properties: Tailored balance between stiffness and impact
- ▶ Increased stress crack resistance

INCREASED END PRODUCT CIRCULARITY

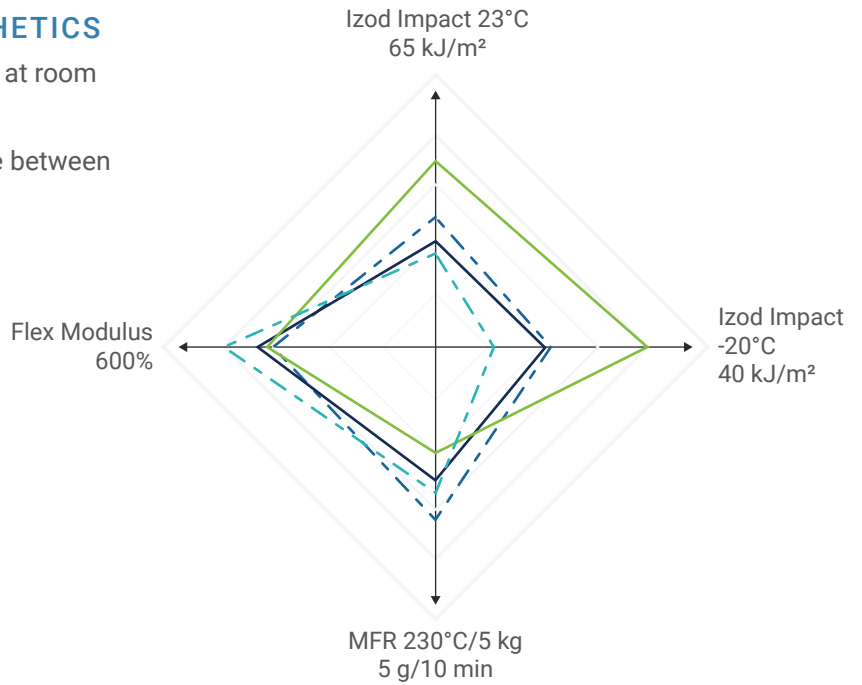
- ▶ Increased post-consumer and post-industrial content
- ▶ Improved product design recyclability
- ▶ Positive environmental impact with lower CO and plastic waste reduction

MULTI-MATERIAL DESIGN FLEXIBILITY

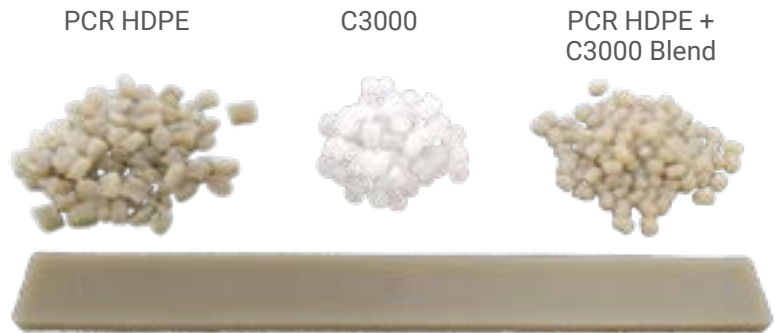
Multi-resin compatibility across virgin plastics, post-consumer and post-industrial resin waste streams

- ▶ Polyolefins and polyolefinic blends: PP, HDPE, MDPE, LLDPE and LDPE, metallocenes
- ▶ Polystyrene and high impact polystyrene

PCR HDPE Performance Enhancement Benchmarking



- 100% PCR HDPE
- PCR HDPE + 6% w. POE
- PCR HDPE + 3% w. C3000
- PCR HDPE + 6% w. C3000



Injection molded PCR HDPE with 6% C3000