Borcycle™ WC4585SY

40% hybrid reinforced compound with post consumer recyclate (PCR) content

Background Challenge

WC4585SY was developed to support the most demanding structural applications on their path towards circularity (e.g. construction parts) but also lightweight replacements where sustainability and circularity matters.
The polypropylene compound is designed with a unique hybrid combination of fillers offering excellent stiffness-impact ratio together with outperforming dimensional stability.
When compared to sustainable alternatives with 30% glass fiber and similar PCR content (GD3600SY), the WC4585SY compound shows excellent stiffness and dimensional stability in flow but also cross-flow directions.

Your Benefits

- High PCR content of 60% - leading to CO_2 reduction*
- Excellent Dimensional Stability - for challenging part designs
- Broad processing window - allowing different conversion processes
- UV package - enabling indoor and outdoor use
- Unique recipe solution with well balanced mechanical properties - for highly stressed structural parts

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Material Requirements and Characteristics

Key Material Characteristics

- Unique hybrid filler combination resulting in excellent dimensional stability
- Very high impact behavior with high stiffness
- Suitable for extrusion but also injection molding
- Available in black color

Product Compliance

Properties	Compliance
REACH	✓
SVHC	✓
RoHS	✓

Key Technical Properties

Properties	WC4585SY	Unit	Method
Density	1280	kg/m³	ISO1183
MFR (230 °C / 2.16 kg)	5	g/10 min	ISO1133
Tensile Modulus	7000	MPa	ISO 527-2
Tensile Strength	60	MPa	ISO 527-2
Heat Deflection Temperature B (0.45 MPa)	141	°C	ISO 75-2
Charpy notched impact strength +23 °C	7.5	kJ/m²	ISO179 1eA
PCR Content	60	wt. %	

Values determined on standard injection molded specimens conditioned at 23 °C and 50 % relative humidity after at least 96 hours storage time.

Well-balanced Material Properties

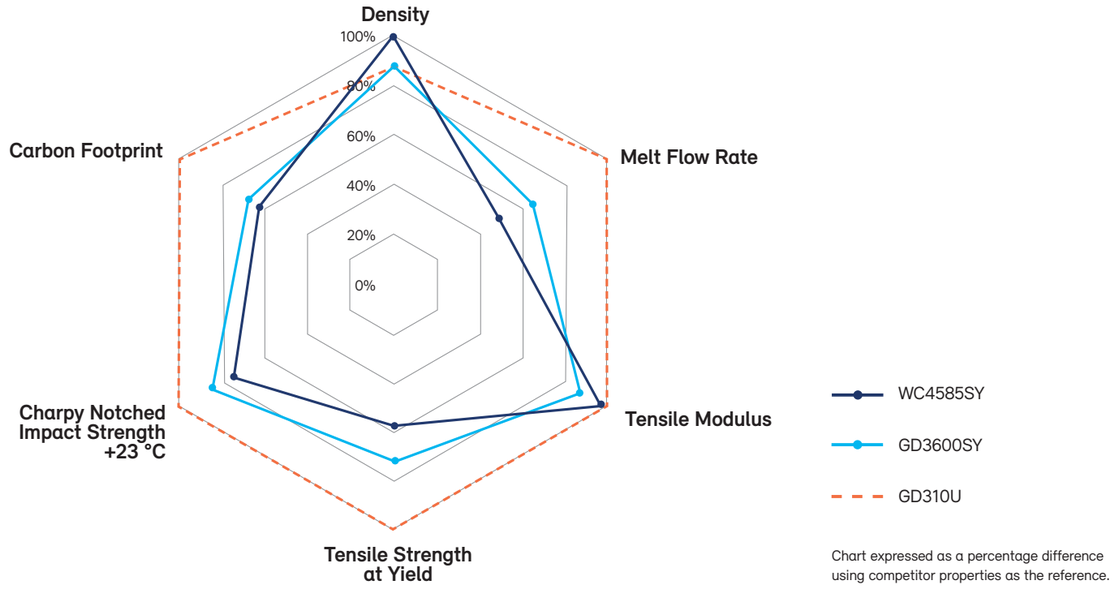

Chart expressed as a percentage difference using competitor properties as the reference.

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* **Disclaimer:** The result was estimated internally using the results from a life cycle assessment for Borealis' virgin fossil polyolefins, conducted in 2022 and a separate life cycle assessment for Borealis' PCR produced at Ecoplast/mtm conducted in 2021. A full life cycle analysis study, as well as other potential environmental impacts, was not conducted in this context. The result is estimated for the production of the pellet, and based on the assumed same functional performance between the conventional virgin solution and solution containing PCR. Other life cycle stages beyond the production of the pellets have not been considered.

About Borealis Borealis is one of the world's leading providers of advanced and sustainable polyolefin solutions. In Europe, Borealis is also an innovative leader in polyolefins recycling and a major producer of base chemicals. We leverage our polymer expertise and decades of experience to offer value-adding, innovative and circular material solutions for key industries such as consumer products, energy, healthcare, infrastructure and mobility.

With operations in over 120 countries and head offices in Vienna, Austria, Borealis employs around 6,000 people. In 2022, we generated a net profit of EUR 2.1 billion. OMV, the Austria-based international oil and gas company, owns 75 % of our shares. The Abu Dhabi National Oil Company (ADNOC), based in the United Arab Emirates (UAE), owns the remaining 25 %.

In re-inventing essentials for sustainable living, we build on our commitment to safety, our people, innovation and technology, and performance excellence. We are accelerating the transformation to a circular economy of polyolefins and expanding our geographical footprint to better serve our customers around the globe. Our operations are augmented by two important joint ventures: Borouge (with ADNOC, headquartered in the UAE); and Baystar™ (with TotalEnergies, based in the US).

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