

Borcycle™ WC4585SY

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

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/m ³	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/m ²	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.

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.

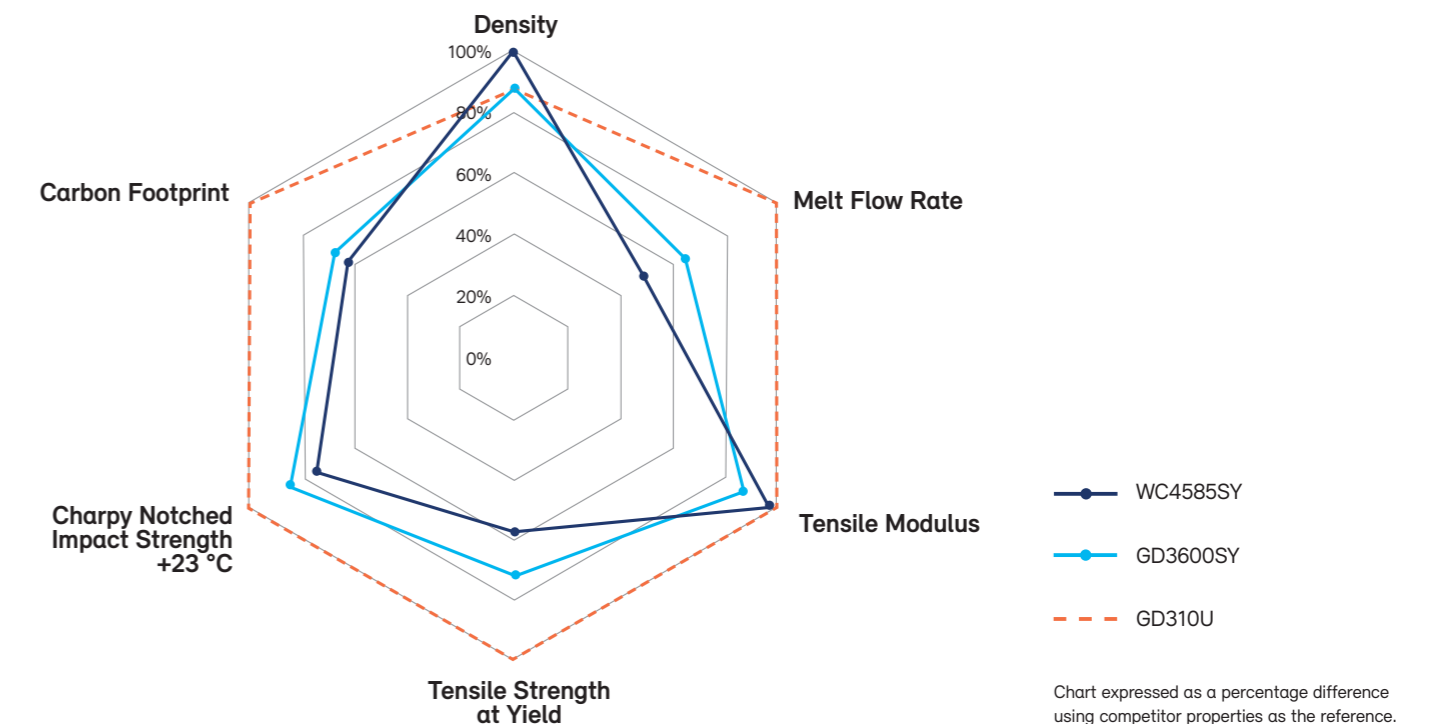
The polypropylene compound is designed with a unique hybrid combination of fillers offering excellent stiffness-impact ratio together with outperforming dimensional stability.

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 CO₂ 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

Well-balanced Material Properties



Borealis AG

Trabrennstraße 6-8, A-1020 Vienna, Austria

Tel +43 1 22 400 000

[borealisgroup.com](https://www.borealisgroup.com)

* **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/mtrm 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).

www.borealisgroup.com | www.borealisemv.com

© 2023 Borealis AG | BROCH 502 EN 2024 06 B

Disclaimer The information contained herein is to our knowledge accurate and reliable as of the date of publication. Borealis and Borouge extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the consequences of its use or for any errors. It is the customer's responsibility to inspect and test our products in order to satisfy himself as to the suitability of the products for the customer's particular purpose. The customer is also responsible for the appropriate, safe and legal use, processing and handling of our products. Nothing herein shall constitute any warranty (express or implied, of merchantability, fitness for a particular purpose, compliance with performance indicators, conformity to samples or models, non-infringement or otherwise), nor is protection from any law or patent to be inferred. Insofar as products supplied by Borealis and Borouge are used in conjunction with third-party materials, it is the responsibility of the customer to obtain all necessary information relating to the third-party materials and ensure that Borealis and Borouge products, when used together with these materials, are suitable for the customer's particular purpose.

No liability can be accepted in respect of the use of Borealis and Borouge products in conjunction with other materials. The information contained herein relates exclusively to our products when not used in conjunction with any third-party materials.

Borcycle is a trademark of Borealis AG.