

Appliances Solutions

Making everyday life easier



BOREALIS

بروج

Borouge



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A Strong Creative Partner

Drawing on more than 50 years of plastics expertise, Borealis and Borouge offer innovative materials for appliances that reduce cycle times, enhance processability, and save on energy and materials, all while cutting carbon emissions. By working closely with our partners across the value chain, we can anticipate market needs and address them with targeted solutions, underlining our role as your creative partner.

Typical Appliances

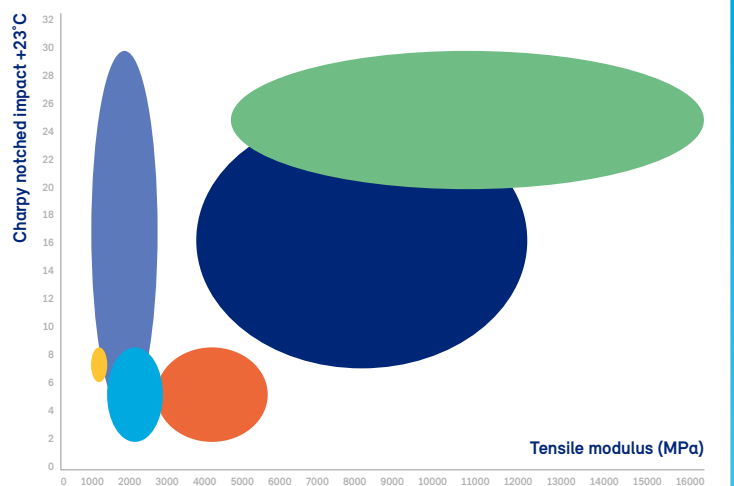
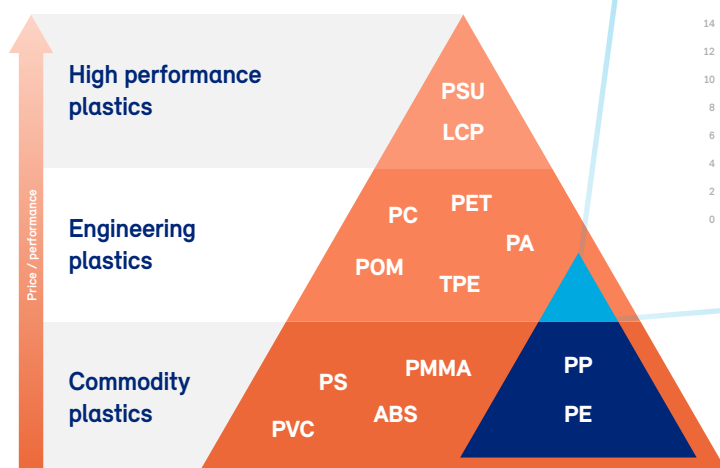
WHITE GOODS

- Washing machines
- Dishwashers
- Fridges
- Freezers
- Dryers
- Air conditioners

SMALL APPLIANCES

- Vacuum cleaners
- Coffee makers
- Ventilators
- Hair dryers
- Microwave ovens
- Power tools
- Water kettles
- Steam irons
- Toasters
- Kitchen blender
- Air fryers

Borealis materials can match properties of engineering plastics



- Long GF PP Compounds
- Short GF PP Compounds
- Mineral PP Compounds
- Homopolymer PP
- Block Copolymer
- Random Copolymer PP

Your Success Is Our Priority

In this competitive market, our cost-effective materials help you to stand out. Exceptional design flexibility allows you to create attractive, visually distinctive products, while safety and compliance are guaranteed with our flame-retardant and UL-listed solutions. Simulation and development support enable optimized production, while thorough lab analysis provides quality assurance.

Fibremod™ GB364WG

This chemically coupled, 30% short-glass-fiber-reinforced PP compound replaces metal parts in demanding applications, reducing material use and improving recyclability.

Typical applications

- High-stress parts such as washing machines tubs
- Functional parts including pumps and basements
- Housings

Key advantages

- Replaces stainless steel and PA parts, reducing weight and improving design flexibility and assembly
- Maintains long-term performance, offering excellent stiffness, and impact and corrosion resistance
- Custom-designed for detergent stability
- Offers excellent processability, increased productivity, and energy savings
- UL and food-contact approved
- No moisture absorption, unlike PA

HB601WG

This PP-homopolymer meets high standards for detergent resistance and long-term thermal stability. Suitable for injection molding, it is typically chosen for visible parts due to its excellent surface quality.

Typical applications

- Dishwasher cutlery trays/baskets
- Heat exchangers

Key advantages

- Good processability and colorability
- Good balance of stiffness and impact resistance, even at high temperatures
- Excellent detergent and steam resistance
- High heat stabilization guarantees consistent material performance and dimensional stability
- UL-listed under E108112



“As one of the leading home appliance manufacturers in the world, BSH stands for values such as innovation, quality and reliability. Therefore we expect from our strategic suppliers, innovative technology, outstanding design, best quality and sustainable products based on a proper material supply and best in class prices.”

Michael Borne

Head of Global Commodity Management Resins & Foam, BSH Hausgeräte GmbH



A Competitive Materials' Environment

In the appliances industry, polypropylene (PP), acrylonitrile butadiene styrene (ABS), and polystyrene (PS) are the leading polymers, supplemented by polyamides (PA) 6 and 66, and polycarbonate (PC). Each polymer offers unique benefits, yet PP, in both resin and compound form, is increasingly preferred.

PP Properties Overview

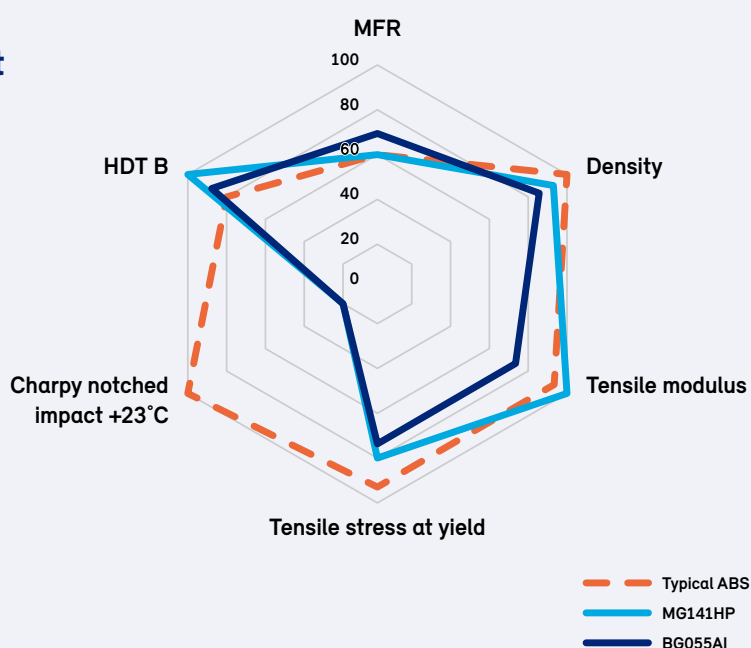
Benefits

- Stiffness / density ratio
- Chemical resistance
- Easy to process
- Best in class CO₂
- Easy to recycle
- Cost

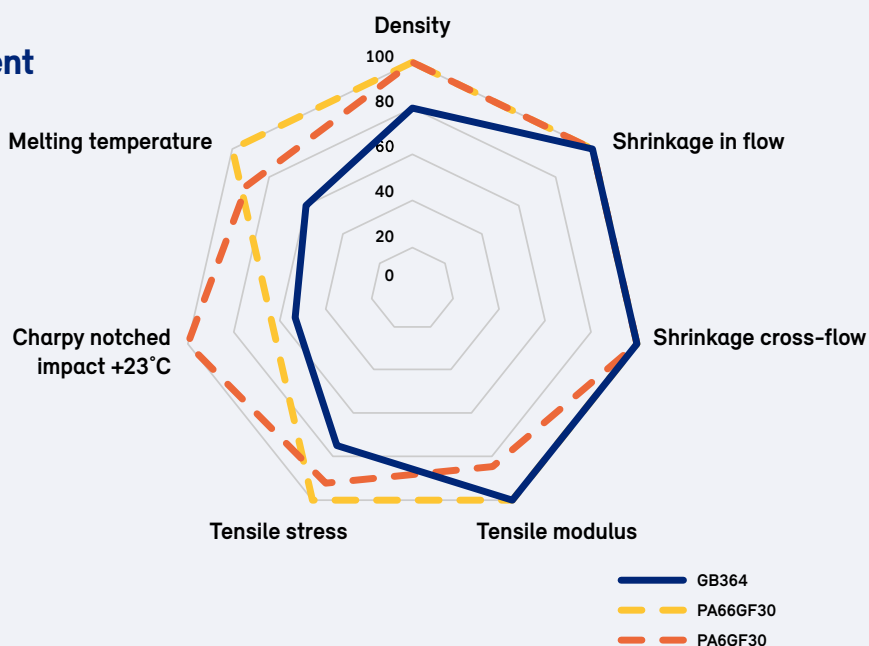
To Be Considered

- Abrasion
- Dimensional stability
- Load at elevated temperature
- Creep resistance

ABS replacement



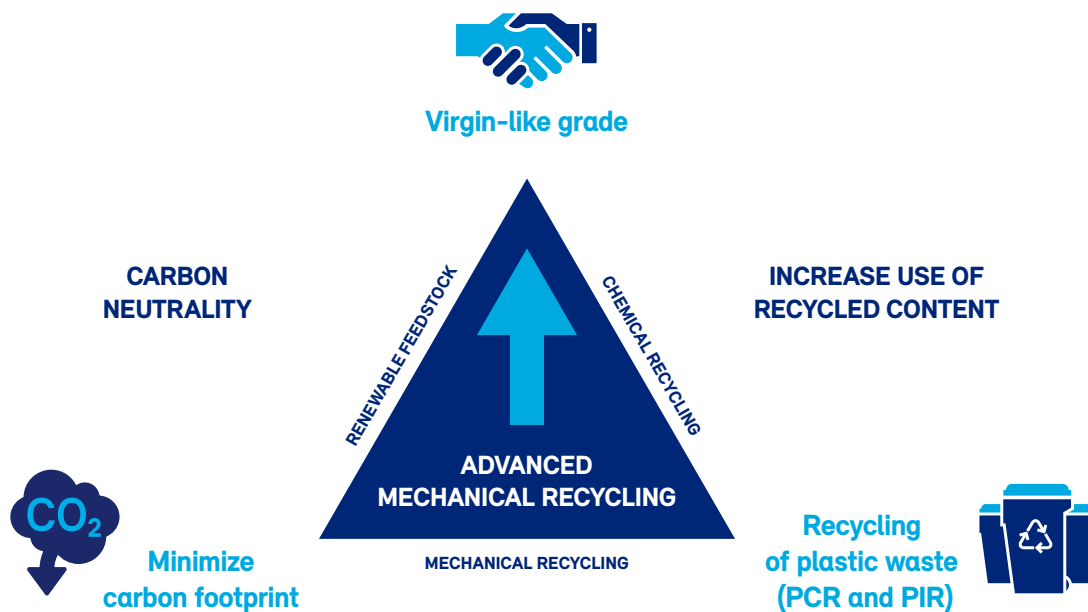
PA6 replacement



Embrace Circularity

Our circular portfolios are here to help you improve the sustainability of your appliances. Mechanical recycling solutions (Borcycle™ and Rialti) and chemical recycling solutions (Borcycle™ C) are our evolving recycling technologies that transform plastic waste into value-adding solutions for demanding applications. The Bornewables™, produced with renewable feedstock derived entirely from waste and residue streams, are premium polyolefins that offer the same material performance as virgin polyolefins. Each portfolio brings a unique balance of advantages, but all contribute to a more sustainable future.

The Magic Triangle: Each Solution Brings Different Benefits



Borcycle™ MF1981SY

A PP compound with over 80% post-consumer recycled content and around 10% talc. The grade has high impact performance combined with good aesthetic properties. Available in black.

Borycle™ MD4481SY

A PP compound with 40% post-consumer recycled content and talc reinforcement. The grade has an excellent balance between stiffness and impact strength. Available in black.

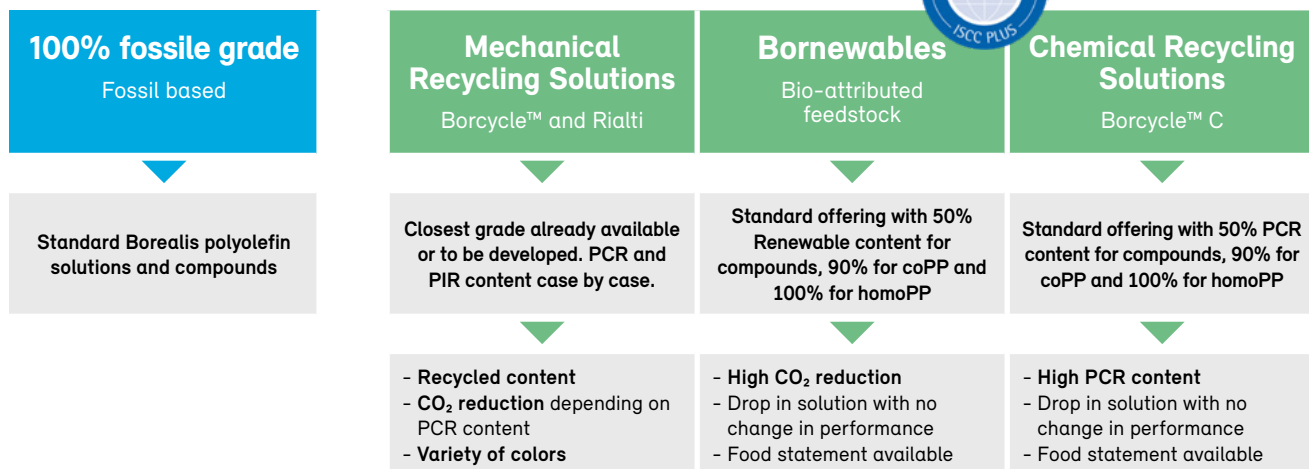
Borcycle™ UF582SA

A PP grade with 55% post-consumer recycled content, suitable for applications requiring high gloss. The grade offers high heat resistance, along with excellent aesthetic properties and good antistatic performance. Available in white and black.

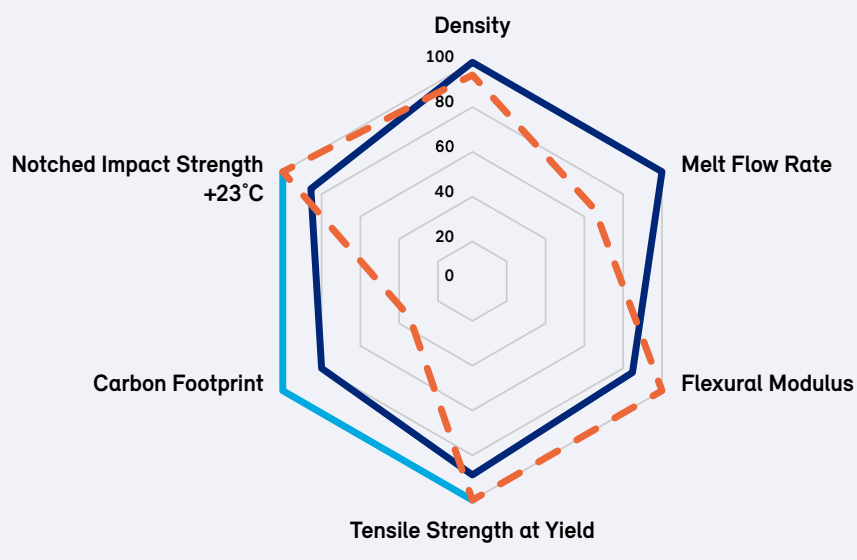
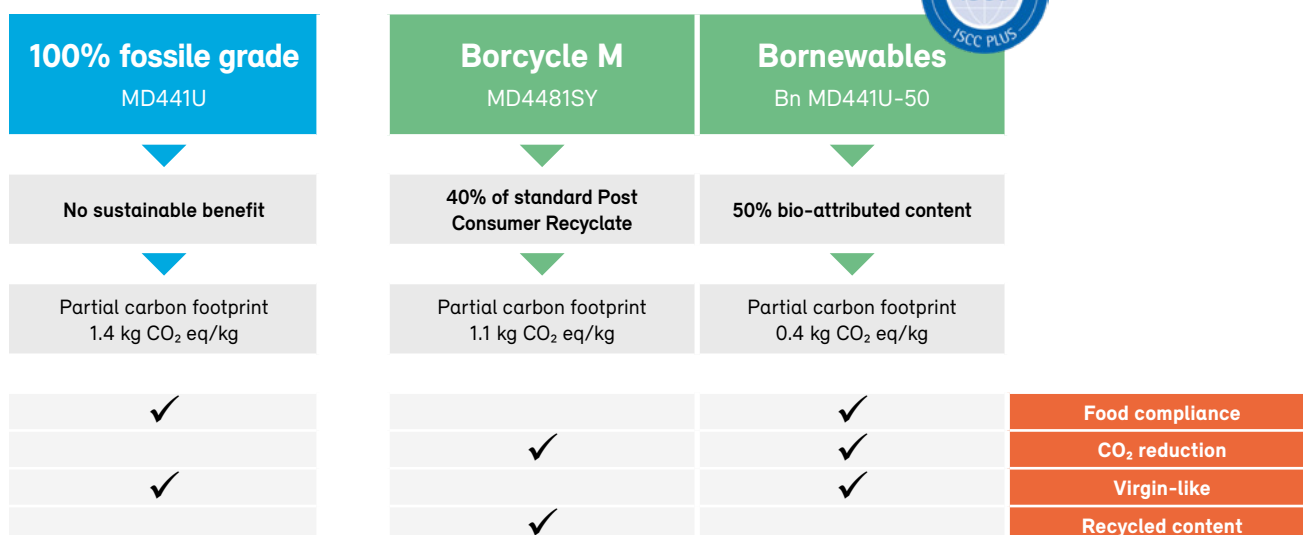
Rialglass B 3 V 30 C 30 PCR BLACK

A PP compound with 30% glass fiber and 30% post-consumer recycled content suitable for applications like structural appliance parts, garden furniture, chairs or covers. This grade is heat stabilized and available in black color.

“One Stop Shop” for Fossil and Circular Economy Solutions



Sustainable Grade Replacement of MD441U

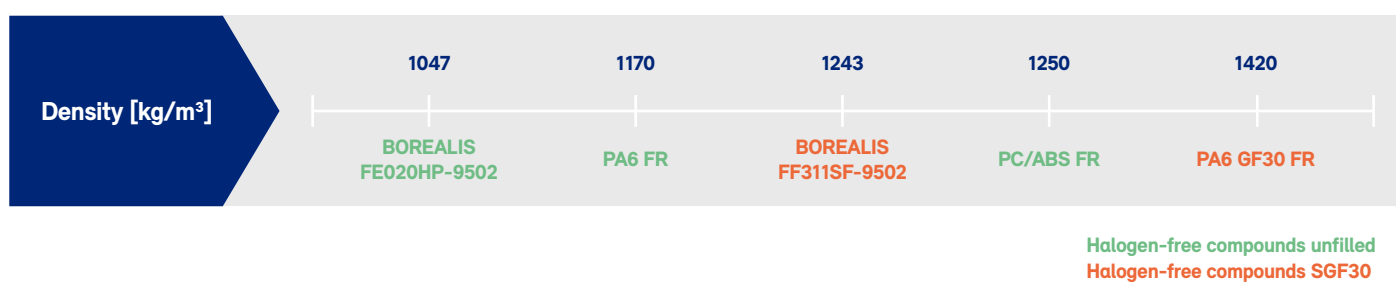


Halogen-free flame retardant Polypropylene Compound

Electrical appliances demand materials that ensure safety and prevent severe incidents. Flame retardant properties are essential in such applications, but also defined by the IEC 60335.

Our new flame retardant technology, used in our PP FR compounds, enables customers to replace traditional halogenated flame retardants in polypropylene. It also offers an effective alternative to flame retardant engineering plastics, supporting more sustainable and cost-efficient material choices.

Our portfolio offers halogen-free and PFAS-free flame retardant compounds with glass fiber reinforcement, ranging from 0% to 30%. Such solution offers a significantly reduced carbon footprint and interesting lightweighting potential.



Grade name	Application focus	MFR (g/10min)	Glass content (wt%)	Tensile Modulus (MPa)	Charpy NIS 23°C (kJ/m²)	UL94 rating at ≥ 1.5mm	GWFI (°C)	CTI (V)	Available colors
FE020HP	Housings, insulation plates, cell holders	12	0	2,100	3	V-0	960	≥ 600	all colors
FE121SF	Separation plates, bus bars insulation	14	10	3,627	7	V-0	960	≥ 600	black
FD221SF	Electronics housing, PCB support	5	25	5,838	10	V-0	930	≥ 600	black
FF311SF	Module housing, structural components	16	30	8,540	9	V-0	960	≥ 600	all colors

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



Solutions for Appliances

Grade	Filler content (%)	MFR (g/10 min) PP: 230°C/2.16 kg	Density (kg/m³)	Tensile modulus (MPa)	Charpy impact, notched 23°C (kJ/m²)	UL listed	HDT B 0.45 MPa (°C)	Typical applications/key properties
Homopolymers								
BE50	n.r.	0.30	905	1,650	7	✓	95	IM, BM, EXT for white goods. NU, AS.
BE52	n.r.	0.25	900	1,600	8	✓	98	IM, BM, EXT for white goods. NU.
HB600TF	n.r.	2	905	1,400	4	✓	86	IM, BM, TF for white goods. AS.
HB601WG	n.r.	2	900	1,600	6	✓	85	IM, BM for white goods, as dishwashers. High heat stabilized, detergent resistant. NU, AS.
HE125MO	n.r.	12	908	1,550	3.5	✓	88	IM, general purpose grade.
HF955MO	n.r.	20	905	2,200	2.5	-	115	IM, BNT, very high stiffness, good transparency and gloss.
HF700SA	n.r.	21	905	1,500	2	✓	80	IM for small appliances. High heat stabilized, excellent antistatic performance, high gloss. AS.
Random copolymer								
RE420MO	n.r.	13	905	1,100	6	-	75	IM, BM, good transparency, NU.
RF365MO	n.r.	20	905	1,150	5.5	✓	75	Good transparency and antistatic performance for small appliances, as level indicators. NU, AS.
RF777MO	n.r.	20	905	1,100	6	-	72	Good transparency, antistatic performance, BNT, small appliances & white goods.
Heterophasic copolymers								
BC245MO	n.r.	3.5	905	1,350	15	-	85	IM for small appliances. Good stiffness, impact strength and stress crack resistance. NU, AS.
BC250MO	n.r.	4	905	1,200	25	✓	80	IM for small appliances. Good stiffness, impact strength, high melt stability and stress crack resistance. NU, AS.
BC612WG	n.r.	5	900	1,100	9	✓	70	IM for white goods, high heat and detergent stabilized.
BE961MO	n.r.	12	905	1,200	13	-	92	IM for small appliances, good stiffness, high impact strength, BNT, AS
BF970MO	n.r.	20	905	1,500	8	✓	102	IM for small appliances, as vacuum cleaners. BNT nucleation to gain high crystalline PP. AS.
BG055AI	n.r.	22	920	2,000	3.5	✓	108	IM for white goods with high aesthetical requirements. Excellent gloss at high stiffness level. NU, AS.
BH381MO	n.r.	35	905	1,700	6.5	✓	105	IM, BNT, very high stiffness and impact.
Mineral filled								
MG141HP	10	20	980	2,500	3.5	-	120	IM for white goods & small appliances, ideal for ABS replacement, high heat stabilized.
MB250WG	20	2.5	1,033	2,400	5.5	-	110	IM for white goods, as dishwasher components, detergent resistant. AS.
MD231U	20	6	1,050	2,900	3	✓	125	IM for small appliances and other technical parts. High heat stabilized.
ME212U	20	13	1,050	2,900	3	✓	120	IM for small appliances and other technical parts, as heater housings. High heat stabilized. AS.
MB352WG	30	2.3	1,150	3,500	4	✓	124	IM for white goods, as dishwasher basement. High stiffness and dimensional stability. AS.
MD441U	40	6	1,220	4,200	2.4	✓	100	IM for small appliances and other technical parts, as carriers. High heat stabilized. AS.
ME466WG	40	12	1,190	4,100	2.3	✓	129	IM for white goods, white color.
Glass fiber reinforced PP								
Fibremod GB205U	20	2	1,040	4,800	11	✓	154	IM for technical parts. High heat stabilized, usable in food and drinking water applications and detergent resistant.
Fibremod GB266WG	20	3.5	1,050	5,400	10	-	159	IM, Washing machine internal parts, high heat and detergent stabilization.
Fibremod GB364WG	30	2	1,120	6,900	12	✓	159	IM for white goods, as refrigerators. Replacement of engineering plastics, like Polyamide. High heat stabilized, usable in food and drinking water applications and detergent resistant.
Fibremod GB366WG	30	2	1,120	6,900	12	✓	159	IM for white goods, as washing machine tubs. Replacement of engineering plastics, like Polyamide. High heat stabilized and detergent resistant incl. UL 2157.

Grade	Filler content (%)	MFR (g/10 min) PP: 230°C/2.16 kg	Density (kg/m³)	Tensile modulus (MPa)	Charpy impact, notched 23°C (kJ/m²)	PCR/PIR content	Typical applications/key properties
Mechanical Recycling Solutions							
UF582SA	0	15	905	1,600	2	55 / -	Suitable for esthetic housing applications, available in white and grey, high gloss, high stiffness.
MF1981SY	10	18.5	968	1,250	5	80 / -	IM for small appliances (i.e. vacuum cleaners), good impact, high CO ₂ reduction.
MD4481SY	40	9	1,275	4,100	2	40 / -	IM for small appliances and white goods, UL94 listed, high stiffness, dimensional stability, high heat.
RIALFILL B 3 V 20 D3 40 PCR	20	15	1,040	2,400	3.5	40 / 37	Covers, spacers, office furniture, and various appliances parts. High CO ₂ savings.
RIALGLASS B 3 V 30 C 30 PCR	30	15	1,160	6,200	-	37 / 30	Industrial coffee machines, garden furniture, chairs, covers. High CO ₂ savings.
RIALFILL B 3 V 40 D 40 PCR	40	15	1,240	3,500	-	17 / 40	Structural non-visible appliances parts. High CO ₂ savings.

Polypropylene MFR

(230°C/2.16 kg) g/10 min = ISO 1133

BNT = Borstar® Nucleation Technology, giving highly nucleated polypropylenes with excellent dimension consistency, regardless of color pigments, and a high potential for cycle time reduction and lightweighting.

SA = slip agent**AS** = antistatic agent**NU** = nucleating agent**IM** = injection moulding**BM** = blow moulding**EXT** = extrusion**TF** = thermoforming

For more information about our consumer products visit
borealisgroup.com/industries/consumer-products

For more information about Borcycle M solutions visit
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Borealis and Borouge appliances solutions are making everyday life easier

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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 customers in over 120 countries and head office in Vienna, Austria, Borealis employs around 6,200 people. In 2024, we generated a net profit of EUR 566 million. OMY, the sustainable chemicals, fuels and energy company with a focus on circular economy solutions, headquartered in Vienna, Austria, 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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