Solutions for Rigid Consumer Products

BOREALIS بروج Borouge

Borealis is a leading provider of innovative solutions in the fields of polyolefins, base chemicals and fertilizers. With headquarters in Vienna, Austria, the company currently has around 6,500 employees and operates in over 120 countries. Borealis generated EUR 7.7 billion in sales revenue and a net profit of EUR 988 million in 2015. The International Petroleum Investment Company (IPIC) of Abu Dhabi owns 64% of the company, with the remaining 36% belonging to OMV, an international, integrated oil and gas company based in Vienna. Borealis provides services and products to customers around the world in collaboration with Borouge, a joint venture with the Abu Dhabi National Oil Company (ADNOC).

Building on its proprietary Borstar® and Borlink™ technologies and more than 50 years of experience in polyolefins, Borealis and Borouge support key industries with a wide range of applications in the areas of energy, automotive, pipes, consumer products, healthcare, and advanced packaging.

The Borouge 3 plant expansion will make Borouge the world's largest integrated polyolefins complex. Once fully ramped up in 2016, the additional 2.5 million tonnes of polyolefins capacity will yield a total Borouge capacity of 4.5 million tonnes, and a combined Borealis and Borouge capacity of 8 million tonnes.

Borealis offers a wide range of base chemicals, including melamine, phenol, acetone, ethylene, propylene, butadiene and pygas, servicing a wide range of industries.

Borealis also creates real value for the agricultural industry, selling approximately 5 million tonnes of fertilizers. Technical nitrogen and melamine products complement the portfolio with applications ranging from mono-nitrogen oxide (NO_x) abatement to glues and laminates in the wood working industry.

Borealis and Borouge aim to proactively benefit society by taking on real societal challenges and offering real solutions. Both companies are committed to the principles of Responsible Care®, an initiative to improve safety performance within the chemical industry, and work to solve the world's water and sanitation challenges through product innovation and their Water for the World™ programme.

For more information visit:
www.borealisgroup.com
www.borouge.com
www.waterfortheworld.net

Contents

06 **Borstar® Nucleation Technology (BNT)**

Injection moulding
08 Overview of injection moulding grades
12 Thin wall packaging and houseware
16 Transport packaging
18 Caps and closures

Blow moulding
20 Bottles, containers and sheet

22 **Thermoforming**

Appliances
24 Appliances
26 Solutions of Appliances

General
28 Facts

BorPure™

High purity grades setting new standards in organoleptic performance combined with outstanding flow properties.

Fibremod™

Fibre reinforced polypropylene for light, integrated, high performing solutions.

Borstar® Nucleation Technology (BNT)

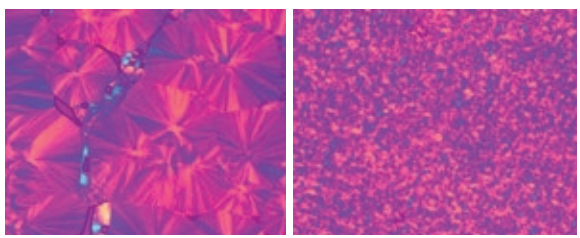
Based on its proprietary Borstar® technology, Borealis has developed the Borstar® Nucleation Technology as a state of the art In Situ (in reactor) solution. BNT provides a good number of advantages compared to conventional nucleation which is adding a nucleating agent during palletisation of PP:

- BNT has a stronger nucleation effect
- Consistent and better dispersion of the nucleating agent
- Inert and thereby no reaction with other additives such as colour master batches
- Low taste & odour
- Full compliance with food contact regulations

BNT is a contributor to sustainability targets by enabling higher productivity such as reducing cycle times and energy consumption and achieving lower environmental footprint.

Advantages of BNT nucleated products in injection moulding

- Faster crystallisation process leading to 10-20% cycle time reduction
- Increased stiffness without negatively affecting the drop impact resistance, thus enabling downgauging and thereby material savings
- Reducing impact of colouring on dimensional stability which allows fast colour change during production without the need to change process parameters
- Reduction in energy consumption through the possibility of reducing the extruder temperature
- Improved hot fill performance



Non-nucleated BNT-nucleated

In summary, strong nucleation effect of BNT maximizes resource and production efficiencies in injection moulding.

Overview of injection moulding grades

Product name	MFR (g/10 min) PP: 230 °C/2.16 kg, PE: 190 °C/2.16 kg	Tensile modulus (MPa)	Charpy 23 °C (kJ/m²)	Charpy −20 °C (kJ/m²)	Key properties	Applications/properties
PP homopolymers						
HE125MO	12	1,550	3.5			Houseware, packaging, general purpose.
HF955MO	20	2,200	2.5		BNT	Houseware, packaging, technical parts. Excellent stiffness and fast cycle.
HF136MO	20	1,500	3		CR	Houseware, packaging, general purpose.
HG385MO	25	1,750	3		BNT, CR, AS, SA	Caps and closures, packaging, houseware. Fast cycle.
HG313MO	30	1,500	2.5		CR, AS, NU, SA	Caps and closures, packaging, houseware.
HJ325MO	50	1,650	2		CR, AS, NU	Thin walled packaging, houseware.
PP heterophasic (block) copolymers						
BC245MO	3.5	1,350	15	6.5	AS, NU	Crates, boxes, technical parts. Good stiffness, high impact.
BC250MO	4	1,200	25PB	7.5	AS, NU	Crates, boxes, technical parts. Good stiffness, very high impact.
BD950MO	7	1,500	8	4	BNT, AS, SA	Caps and closures, low stress whitening.
BD310MO	8	1,400	9	4	AS, NU	Crates, boxes, technical parts, packaging, houseware.
BE961MO	12	1,200	13	6.5	BNT, AS	Crates, boxes, packaging pails, houseware. Fast cycle and high impact.
BE170CF	13	1,250	8	3.5		Packaging pails, houseware, general purpose.
BF970MO	20	1,500	8	4.5	BNT, AS	Crates, boxes, packaging pails, houseware. Fast cycle and high impact.
BH381MO	35	1,700	6.5	3.5	BNT, AS	Packaging pails, thin walled packaging, technical parts and other applications requiring high stiffness.
BH345MO	45	1,400	6	3.5	AS, NU	Thin wall packaging, houseware. Excellent stiffness / impact balance.
BH374MO	45	1,500	6	3.5	BNT, AS	Pails, thin wall packaging. Fast cycle and high stiffness.
BH348MO	50	1,150	10	5	BNT, AS	Thin wall packaging and applications requiring good impact at low temperature, like ice cream and other deep freeze applications and lids.
BJ368MO	70	1,500	5.5	3.5	BNT, AS	Thin wall packaging, houseware. Fast cycle time and high impact.
BJ380MO	80	1,300	5	3.5	CR, AS, NU	Thin wall packaging, houseware. Low warpage.
BJ356MO	100	1,600	4	2.5	AS, NU	Thin wall packaging. High stiffness and flow.
BJ998MO	100	1,400	5	3	BNT, AS	Thin wall packaging, houseware. High flow, high impact copolymer with fast cycle.

Overview of injection moulding grades

Product name	MFR (g/10min) PP: 230°C/2.16kg, PE: 190°C/2.16kg	Tensile modulus (MPa)	Charpy 23°C (kJ/m²)	Charpy -20°C (kJ/m²)	Key properties	Applications/properties
PP random copolymers						
RE420MO	13	1,100	6		AS, NU	Caps and closures, packaging, houseware. Good transparency.
RF365MO	20	1,150	5.5		AS, NU	Caps and closures, packaging, houseware. Good transparency.
RF366MO	20	1,200	5.5		AS, NU, excellent transparency	Caps and closures, packaging, houseware. Excellent transparency.
BorPure RG466MO	30	1,100	5.5		BNT, AS, good organoleptics	Thin walled packaging, houseware, caps and closures. Fast cycle, good transparency and organoleptics.
BorPure RJ377MO	45	1,100	4.5		BNT, AS, good organoleptics	Thin walled packaging, houseware. Fast cycle, good transparency and organoleptics.
BorPure RJ766MO	70	1,150	4.5		BNT, AS, good organoleptics	Thin walled packaging, houseware. High flow, fast cycle, good transparency and organoleptics.
RJ901MO	110	1,100	4.5		CR, AS, NU	Thin walled packaging, houseware. Good transparency and wide processing window.
PP specialities						
SH950MO	40	1,050	8	3	BNT, AS, transparent with impact	Thin wall packaging, houseware. Transparent grade with low temperature impact, especially for transparent deep freeze packaging like ice cream.

Product name	MFR (g/10min) PP: 230°C/2.16kg, PE: 190°C/2.16kg	Density (kg/m³)	Tensile modulus (MPa)	Charpy 23°C (kJ/m²)	ESCR (h)	Key properties	Applications/properties
PE-HD							
BorPure MB6561	1.5	955	900	12	500	multimodal	Organoleptic multimodal grade with very good ESCR targeting sparkling and flat water and CSD.
BorPure MB7541	4	954	850	9	40	multimodal	Organoleptic multimodal grade targeting flat water, teas and juices.
BorPure MB5568	0.8	956	1,100	19	750	multimodal	Organoleptic multimodal HDPE with superior ESCR targeting further lightweighting of beverage closures (recommended for sparkling and flat water and CSD).
BorPure MB5569	0.8	956	1,100	19	750	SA; multimodal	Organoleptic multimodal HDPE with superior ESCR targeting further lightweighting of beverage closures (recommended for CSD).

Thin wall packaging and houseware

Product name	MFR (g/10 min) PP: 230 °C/2.16 kg PE: 190 °C/2.16 kg	Tensile modulus (MPa)	Charpy 23 °C (kJ/m²)	Charpy -20 °C (kJ/m²)	Key properties	Applications/properties
PP homopolymers						
HF955MO	20	2,200	2.5		BNT	For general thin walled packaging and houseware. Excellent stiffness and fast cycle. Good product for hot fill applications due to the high heat deflection temperature (HDT).
HJ325MO	50	1,650	2		CR, AS, NU	For thin walled packaging and general purpose applications. High flow homopolymer with low warpage and good demoulding.
PP heterophasic (block) copolymers						
BF970MO	20	1,500	8	4.5	BNT, AS	For pails, houseware and other applications needing high impact. Good impact and stiffness and fast cycle.
BH381MO	35	1,700	6.5	3.5	BNT, AS	High stiffness and heat deflection temperature (HDT). For pails and thin wall packaging, and applications like hot fill requiring good stiffness.
BH345MO	45	1,400	6	3.5	AS, NU	High impact and stiffness in combination with good flow makes this grade perfect for thin wall packaging.
BH374MO	45	1,500	6	3.5	BNT, AS	High flow copolymer suited for thin wall pails. Very fast cycle in combination with excellent drop and stacking properties.
BH348MO	50	1,150	10	5	BNT, AS	Designed for very high impact applications like 2-5 l ice cream tubs. Excellent also for lids. Fast cycle time.
BJ368MO	70	1,500	5.5	3.5	BNT, AS	Fast cycle PP with unique combination of flow and impact for consumer packaging and houseware applications.
BJ380MO	80	1,300	5	3.5	CR, AS, NU	Low warpage makes this grade well suited for lids or packaging exposed to warpage. Good demoulding properties
BJ356MO	100	1,600	4	2.5	AS, NU	Easy flowing, good stiffness copolymer for very thin wall articles or complicated designs. Good e.g. for IML packaging of dairy, fats and desserts.
BJ998MO	100	1,400	5	3	BNT, AS	High flow, good impact copolymer with excellent processability and fast cycle time and good organoleptics. Perfect for packaging of RT, chilled and frozen food products.

Thin wall packaging and houseware

Product name	MFR (g/10 min) PP:230 °C/2.16 kg	Tensile modulus (MPa)	Charpy 23 °C (kJ/m²)	Charpy -20 °C (kJ/m²)	Key properties	Applications/properties
PP random copolymers						
RF365MO	20	1,150	5.5		AS, NU	Good transparency and good antistatic properties, for packaging and thick houseware articles.
RF366MO	20	1,200	5.5		AS, NU, excellent transparency	Excellent transparency and optical properties for specialty packaging and high quality houseware articles.
BorPure RG466MO	30	1,100	5.5		BNT, AS, good organoleptics	Good organoleptic properties and fast cycle, with good stiffness/impact balance. For transparent packaging and houseware articles.
BorPure RJ377MO	45	1,100	4.5		BNT, AS, good organoleptics	Good organoleptic properties and fast cycle, with good stiffness/impact balance. For transparent thin walled packaging and houseware articles.
BorPure RJ766MO	70	1,150	4.5		BNT, AS, good organoleptics	High flow grade. Good organoleptic properties and fast cycle, with good stiffness/ impact balance. For transparent thin walled packaging and houseware articles.
RJ901MO	110	1,100	4		CR, AS, NU	High flow grade for houseware and general packaging with good transparency and wide processing window enabling use of lower processing temperatures.
PP specialities						
SH950MO	40	1,050	8	3	BNT, AS, transparent with impact	Transparent grade with low temperature impact. For thin wall packaging and houseware, especially for transparent deep freeze packaging like ice cream.

Transport packaging

Product name	MFR (g/10 min) PP: 230 °C/2.16 kg PP: 190 °C/2.16 kg	Tensile modulus (MPa)	Charpy 23 °C (kJ/m²)	Charpy -20 °C (kJ/m²)	Key properties	Applications/properties
PP heterophasic (block) copolymers						
BC245MO	3.5	1,350	15	6.5	AS, NU	Crates, boxes, technical parts, high impact.
BC250MO	4	1,200	25PB	7.5	AS, NU	Crates, boxes, luggage, technical parts, very high impact, good creep resistance.
BD310MO	8	1,400	9	4	AS, NU	Packaging, houseware, technical parts.
BE961MO	12	1,200	13	6.5	BNT, AS	Excellent impact/stiffness balance, fast cycle, excellent dimensional consistency regardless of colour used.
BE170CF	13	1,250	8	3.5		Non nucleated block copolymer with good stiffness/impact balance for trays, crates and boxes.
BF970MO	20	1,500	8	4.5	BNT, AS	Crates, trays, boxes, pails, fast cycle, good impact/stiffness balance. Excellent dimensional consistency regardless of colour used.

Caps and closures

Product name	MFR (g/10 min) PP: 230 °C/2.16 kg, PE: 190 °C/2.16 kg	Density (kg/m³)	Tensile modulus (MPa)	Charpy 23 °C (kJ/m²)	Charpy -20 °C (kJ/m²)	ESCR (h) Igepal 10%	Key properties	Applications/properties
PP homopolymers								
HB306MO	2		1,900	5			BNT, AS, SA	Low MFR for compression moulded closures, low opening torque. Excellent dimensional consistency of coloured closures.
HE125MO	12		1,550	3.5				High rigid non nucleated homopolymer for hinge and wide-mouth closure applications.
HF955MO	20		2,200	2.5			BNT	Fast cycle, very high stiffness, good heat stability. Excellent dimensional consistency of coloured closures.
HG385MO	25		1,750	3			BNT, CR, AS, SA	Very good stiffness/impact balance. Fast cycle without warpage. Excellent dimensional consistency of coloured closures.
HG313MO	30		1,500	2.5			CR, AS, NU, SA	Easy flowing, low warpage, fast cycle.
PP random copolymers								
RE420MO	13		1,100	6			AS, NU	No stress whitening, suitable for closures with integrated hinges.
RF365MO	20		1,150	5.5			AS, NU	Very good transparency, high flow, good anti-static properties.
RF366MO	20		1,200	5.5			AS, NU, excellent transparency	Suitable for closures applications that require very high transparency.
BorPure RG466MO	30		1,100	5.5			BNT, AS, good organoleptics	Good organoleptic properties and fast cycle, with good stiffness/impact balance.
BorPure RJ377MO	45		1,100	4.5			BNT, AS, good organoleptics	Good organoleptic properties and fast cycle, with good stiffness/impact balance.
PP heterophasic (block) copolymers								
BD950MO	7		1,500	8	4		BNT, AS, SA	Low stress whitening, excellent dimensional consistency of coloured closures, fast cycle.
BF970MO	20		1,500	8	4.5		BNT, AS	Good impact/stiffness balance, excellent dimensional consistency of coloured closures.
BH381MO	35		1,700	6.5	3.5		BNT, AS	High stiffness and heat deflection temperature (HDT); suitable for hot-fill applications.
PE-HD								
BorPure MB6561	1.5	955	900	12	9	500	multimodal	Organoleptic multimodal grade with very good ESCR targeting sparkling and flat water and CSD.
BorPure MB7541	4	954	850	9	5	40	multimodal	Organoleptic multimodal grade targeting flat water, teas and juices.
BorPure MB5568	0.8	956	1,000	19	n/a	750	multimodal	Organoleptic multimodal HDPE with superior ESCR targeting further lightweighting of beverage closures (recommended for sparkling and flat water and CSD).
BorPure MB5569	0.8	956	1,000	19	n/a	750	SA; multimodal	Organoleptic multimodal HDPE with superior ESCR targeting further lightweighting of beverage closures (recommended for CSD).

Bottles, containers and sheet

Product name	MFR (g/10 min) PP: 230 °C/2.16 kg, PE: 190 °C/2.16 kg	Density (kg/m³)	Tensile modulus (MPa)	Charpy 23 °C (kJ/m²)	Charpy -20 °C (kJ/m²)	ESCR (h) Igepal 10%	Key properties	Applications/properties
PP random copolymers								
RB307MO	1.5		900	25			NU	Household and industrial containers, cosmetics, suitable also for ISBM. Good clarity, high impact.
RB206MO	1.9		1,150	7			NU, hot fill	Mono- and multilayer bottles for food and cosmetics. Good transparency, hot-fillable.
RC737MO	3		1,000	15			NU, excellent transparency	Cosmetics and baby bottles. Excellent transparency and wide processing window.
RF365MO	20		1,150	5.5			AS, NU	Good transparency grade for ISBM applications. Balance of high processability and high temperature resistance with good impact properties.
RF366MO	20		1,200	5.5			AS, NU, excellent transparency	Very high transparency grade for ISBM applications. Balance of high processing and high temperature resistance with good impact properties.
PP heterophasic (block) copolymers								
BB125MO	1.3		1,300	50PB	7		NU	Sheet, household and industrial containers.
PE-HD								
BB2541	0.3	954	1,100	9		500	bimodal	Small/medium UN-containers, small/medium canisters. Small bottles, household industrial chemicals, bottles for food. Very high ESCR.
BB2581	0.3	958	1,300	8		100	bimodal	Small/medium canisters. Small bottles, household industrial chemicals, bottles for food.

Thermoforming

Product name	MFR (g/10 min) PP: 230 °C/2.16 kg PE: 190 °C/2.16 kg	Tensile modulus (MPa)	Charpy 23 °C (kJ/m²)	Charpy -20 °C (kJ/m²)	HDT 0.45 MPa (°C)	Vicat A50 (°C)	Key properties	Applications/properties
PP homopolymers								
HB600TF	2	1,400	4		86	155		Very good melt stability, excellent thermoforming behaviour. Margarine tubs, pots and trays for dairy/food products, blister packs, confectionery packaging.
HC600TF	2.8	1,600	4		85	154		Very good melt stability, excellent thermoforming behaviour. Food packaging (pots, trays, lids) usually for coloured applications, one-way tableware.
HC205TF	4	1,900	5		105	155	NU	Good stiffness, excellent clarity and excellent thermoforming behaviour. Food packaging applications.
PP heterophasic (block) copolymers								
BB213CF	1.2	1,200	30	2.5	70	150		Good melt stability, excellent thermoforming behaviour, low temperatures resistance, calenderable. Freezer packaging, oven-to-table trays (microwave dishes), impact modifier for PP homo (SPR lids).
BD212CF	5	1,100	7	2.5	70	150		Reduced shrinkage, resistance to low temperatures. Freezer packaging, oven-to-table trays, lids with high impact, impact modifier for PP homo.
BC918CF	3	1,550	35	1.2	90	155	NU	Transparent PP-Heco ('blockcopolymer') with excellent stiffness/impact behaviour at low temperatures. MAP trays, transparent lids with good resistance to splitting, freezer packaging, oven-to-table trays (microwave dishes).
BC918TF	3	1,550	35	1.2	90	155	NU	Transparent PP-Heco ('blockcopolymer') with excellent stiffness/impact behaviour at low temperatures. MAP trays, transparent lids with good resistance to splitting, freezer packaging, oven-to-table trays (microwave dishes), dedicated for the Nordic market.
BC245MO	3.5	1,350	15	6.5	85	153	AS, NU	Excellent impact/stiffness balance for food packaging applications with more demanding low temperature impact requirements.
BC250MO	4	1,200	25PB	7.5	80	148	AS, NU	Excellent impact at low temperatures for food packaging applications demanding low temperature impact resistance.
PP random copolymers								
RB707CF	1.5	900	20	1	70	122	NU	Excellent transparency, very high 'see through' clarity, broad thermo-forming temperature range, calenderable. Food packaging, blister, high clarity lids with good resistance to splitting.
RB501BF	1.9	800	9	1	60	125		Calenderable, excellent thermoforming behaviour for food packaging applications.

Appliances

The appliance market in perspective

Households in both developed and developing societies around the world increasingly rely on the convenience and time saving role played by appliances. The demand continues to increase in line with population growth and rising living standards. Urbanisation also contributes to this growing market, as it expands availability and access to appliances though centralisation.

Focused on your success

Our contribution to your success lies in developing materials that enable innovation by increasing design freedom, optimising processes, improving end-use performance and aesthetics. And, do so faster, more efficiently, and with lower energy and resource consumption, than many alternative solutions.

PP-SGF (short glass fibre reinforced polypropylene)

PP-SGF is commonly used in a wide range of appliance applications. Produced as compounds on co-rotating twin screw extruders, the combination of specially sized short glass fibres, the PP matrix and the chemical coupling define the final material properties. They are usually converted to parts using various injection moulding technologies, including complex processes such as injection compression moulding or injection foam moulding.

The Borealis portfolio covers a wide range of products from 10% to 40% filled standard glass fibre grades to tailormade special products with optimised polymer matrix, glass fibre or glass fibre/filler mixture contents and stabilisation for very demanding applications.

Delivering long-term performance with excellent impact resistance

Fibremod™ GB366WG is a 30% chemically coupled short glass fibre reinforced PP compound that offers enhanced performance in tough in-service application components. It was developed especially for applications in the appliances industry.

Typical applications

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

Key advantages

– Ideal for replacing stainless steel and polyamide (PA) parts with lower density therefore offering significant weight reductions
– Improved flexibility of design, assembly and welding compared to stainless steel, leading to fewer manufacturing steps
– Long-term performance with excellent stiffness and impact resistance, together with absence of corrosion
– Includes specifically designed detergent stabilisation
– Has excellent processability and offers a significant increase in productivity and energy savings
– Reduction of water consumption versus steel and offers easier recycling
– Benefits throughout the value chain, with long-term durability, no discolouration and UL approved also UL 2157
– No moisture absorption

Solutions for Appliances

Grade	Filler content (%)	MFR (g/10 min) PP: 230°C/2.16kg, PE: 190°C/2.16kg	Density (kg/m³)	Tensile modulus (MPa)	Charpy impact, notched 23°C (kJ/m²)	UL 94	Typical applications/key properties
Homopolymers							
BE50	n.r.	0.3	905	1,650	7	•	IM, BM, EXT for white goods. NU, AS.
BE52	n.r.	0.25	900	1,600	8	•	IM, BM, EXT for white goods. NU.
HB600TF	n.r.	2	905	1,400	4	•	IM, BM, TF for white goods. AS.
HB601WG	n.r.	2	900	1,600	6	•	IM, BM for white goods, as dishwashers. High heat stabilised, detergent resistant, NU, AS.
HF700SA	n.r.	21	905	1,500	2	•	IM for small appliances. High heat stabilised, excellent antistatic performance, high gloss. AS.
Random copolymer							
RF365MO	n.r.	20	905	1,150	5.5	•	Good transparancy and antistatic performance for small appliances, as level indicators. NU, AS.
RF366MO	n.r.	20	905	1,200	5.5		Excellent transparancy and antistatic performance for small appliances, as milk pumps. NU, AS.
Heterophasic copolymers							
BC245MO	n.r.	3.5	905	1,350	15		IM for small appliances. Good stiffness, impact strength and stress crack resistance. NU, AS
BC250MO	n.r.	4	905	1,200	25PB		IM for small appliances. Good stiffness, impact strength, high melt stability and stress crack resistance. NU, AS.
BF970MO	n.r.	20	905	1,500	8	•	IM for small appliances, as vacuum cleaners. BNT™ nucleation to gain high crystalline PP, AS.
BF335SA	n.r.	20	900	1,300	7.5	•	IM for small appliances, as coffee machines and vacuum cleaners. Good antistatic performance. AS.
Borcom BG055AI	n.r.	22	920	2,000	3.5	•	IM for white goods with high aesthetical requirements. Excellent gloss at high stiffness level. NU, AS.
Mineral Filled							
Borcom WG140AI	10	20	980	2,600	3.5	•	IM for white goods, as washing machine tubs and small appliances. High heat stabilised, high melt strength and detergent resistant. AS.
MB250WG	20	2.5	1,033	2,400	5.5	•	IM for white goods, as dishwasher components, detergent resistant. AS.
MD231U	20	6	1,050	2,900	3	•	IM for small appliances and other technical parts. High heat stabilised.
ME212U	20	13	1,050	2,900	3	•	IM for small appliances and other technical parts, as heater housings. High heat stabilised. AS.
MB352WG	30	2.3	1,150	3,500	4	•	IM for white goods, as dishwasher basement. High stiffness and dimensional stability. AS.
MD441U	40	6	1,220	4,200	2.4	•	IM for small appliances and other technical parts, as carriers. High heat stabilised. AS.
Glass fibre reinforced PP							
Fibremod GB205U	20	2	1,040	4,800	11	•	IM for technical parts. High heat stabilised, usable in food and drinking water applications and detergent resistant.
Fibremod GB364WG	30	2	1,120	6,900	12	•	IM for white goods, as refrigerators. Replacement of engineering plastics, like Polyamide. High heat stabilised, usable in food and drinking water applications and detergent resistant.
Fibremod GB366WG	30	2	1,120	6,900	12	•	IM for white goods, as washing machine tubs. Replacement of engineering plastics, like Polyamide. High heat stabilised and detergent resistant incl. UL 2157.

Facts

Polypropylene MFR
(230 °C/2.16 kg) g/10 min = ISO 1133

Polyethylene MFR
(190 °C/2.16 kg) g/10 min = ISO 1133

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

CR = Controlled Rheology (CR) grades have a narrower molecular weight distribution resulting in reduced internal stresses and excellent dimensional stability.

SA = slip agent

AS = antistatic agent

NU = nucleating agent

UV = UV-stabilised

PB = partial break

IM = injection moulding

BM = blow moulding

EXT = extrusion

TF = thermoforming

For more information visit:
www.borealisgroup.com
www.borouge.com

Notes

Notes

For more information:
visit www.borealisgroup.com and www.borouge.com

Borealis AG · IZD Tower
Wagramer Strasse 17-19 · A-1220 Vienna · Austria
Tel +43 1 22 400 000 · Fax +43 1 22 400 333

Borouge Pte Ltd · Sales and Marketing Head Office
1 George Street 18-01 · Singapore 049145

BOREALIS Borouge بروج