



WENEW  
WENEW

**Fostering  
circular economy  
for a more  
sustainable future**





# The circular future is only possible together

At Braskem, we believe that the circular economy is the way to promote positive impact on the world and build a more sustainable future.

That is why Braskem created Wenew, its circularity ecosystem that helps to foster this new reality. A concept that was born to represent our work in favor of the circular economy and that identifies products, technologies, and initiatives focused on education and circular design promoted by Braskem.

We want to foster business and initiatives for post-consumer plastic waste valorization through partnerships with customers, brand owners, and the whole chemical and plastics value chain. After all, together we can make something new again and again.

**Get to know our circular solutions.  
Come with us!**



Reducing plastic waste is part of Braskem's commitments to sustainable development.  
**Learn more.**



# How do we produce our circular solutions?

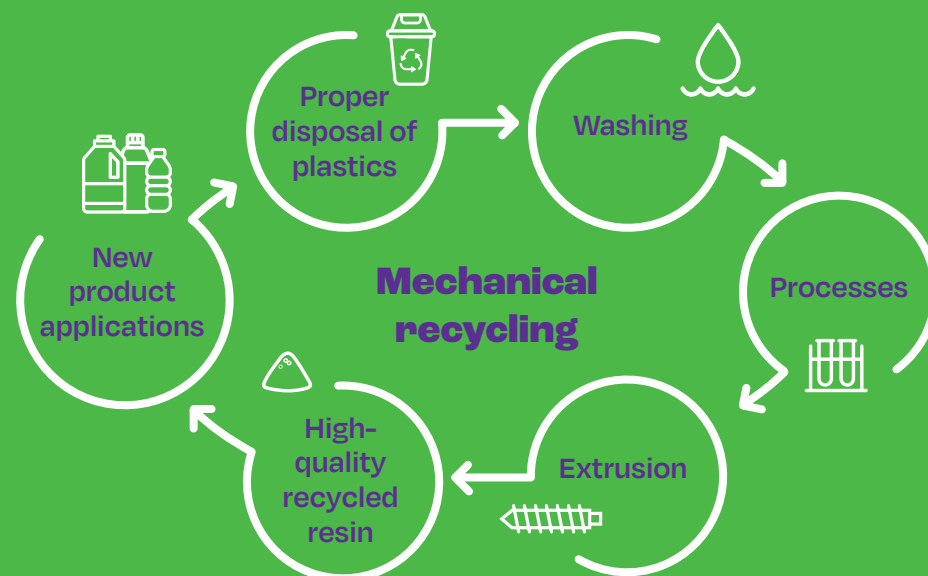
Braskem's circular products are the result of plastic waste recycling and recovery processes.

We invest in innovative recycling and waste recovery technologies because we want to go beyond this step by expanding the circular economy more and more. Get to know our Wenew portfolio!



## Mechanical recycling

The process of crushing post-consumer plastic into smaller pieces that, after going through the extrusion process, are transformed into recycled resins for the most diverse applications.



Check on the next pages Wenew's global portfolio of post-consumer recycled resins.

## Advanced Recycling

Process of breaking down post-consumption plastic molecules, with the alteration of its physical-chemical properties, to generate circular raw material used in the manufacturing of new chemicals or resins, with the same quality as the conventional ones and for the most diverse applications.

Braskem's units in Brazil, the United States and Europe have the ISCC Plus (International Sustainability and Carbon Certification) certification to produce chemicals and plastics from raw materials from circular.



Braskem is investing in advanced recycling technology to soon make it a reality.

## Waste recover

Process for recovering products derived from the manufacture of other Braskem solutions, generating maximum use of raw materials and reducing waste.

Check out Wenew's portfolio of circular chemicals on the following pages.



# Make the shift your company and the world need

When you use our circular solutions in your products,  
you are joining a new economy that is thriving and helping  
to transform the world.





# Wenew portfolio: get to know our circular solutions

## Resins with recycled content

A portfolio of recycled polyethylene (rPE) and polypropylene (rPP) resins that unites high quality, performance, and sustainability.

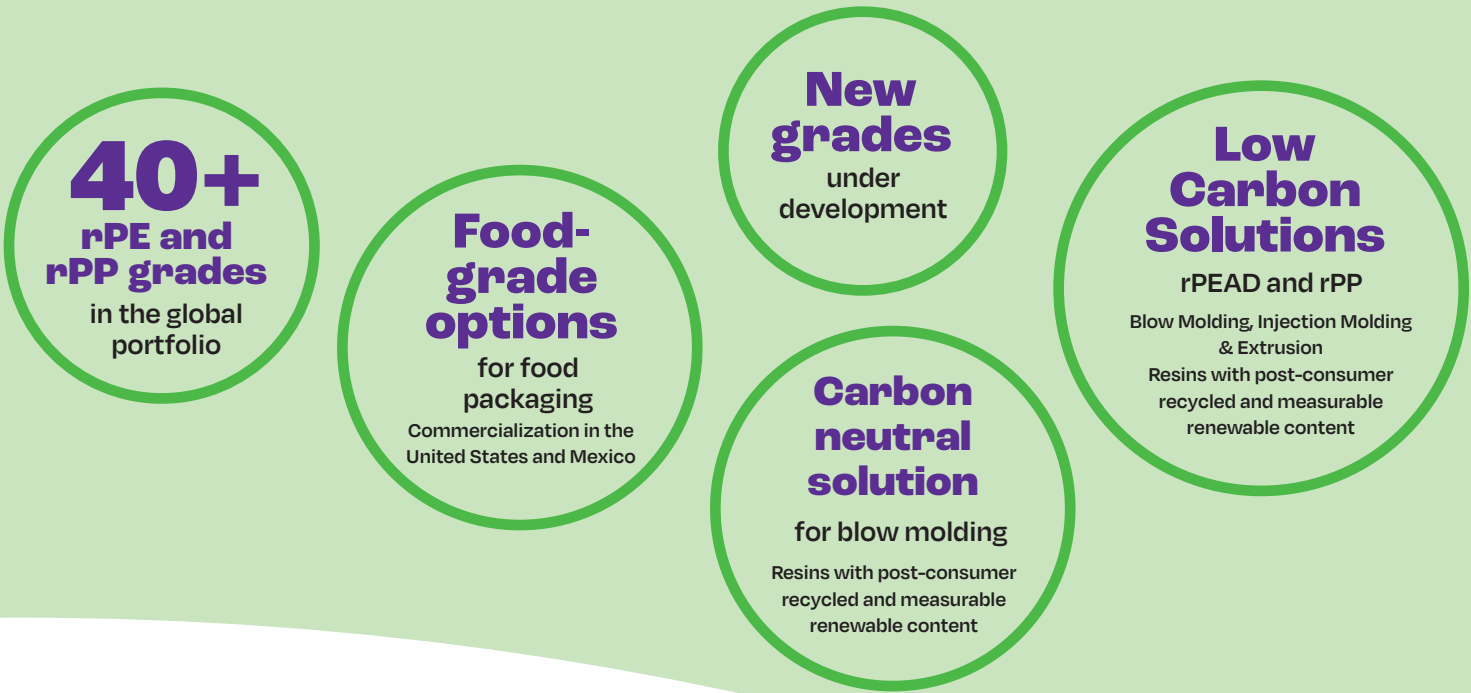
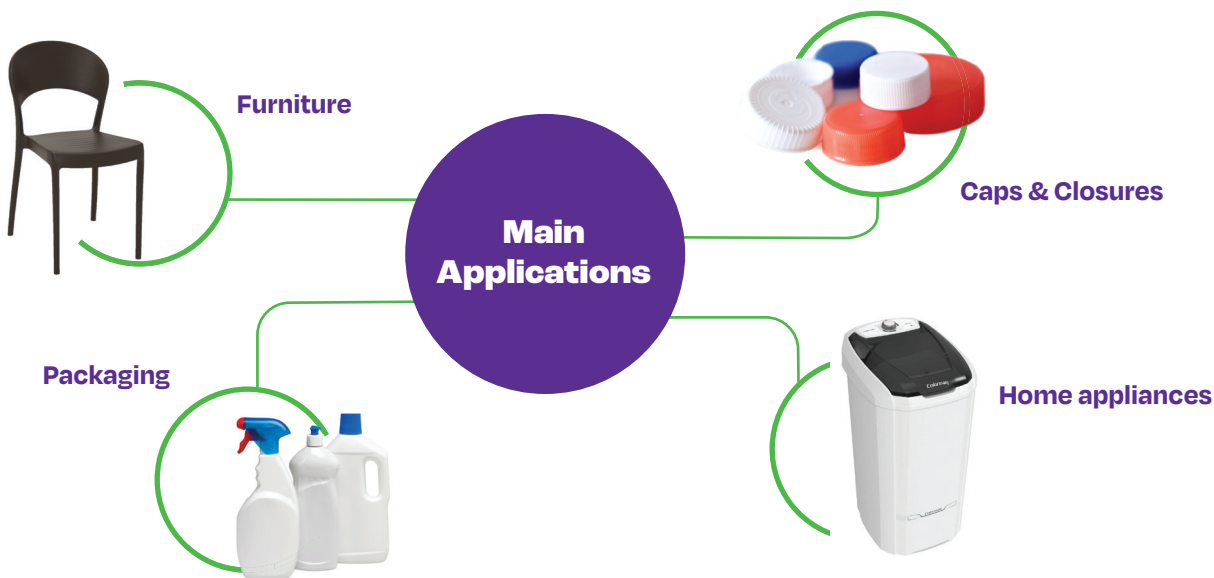
### Reducing carbon footprint

Wenew resin portfolio reduces carbon emissions by **up to 48%** when compared to conventional virgin resins. Sustainability gains encompass 15 categories of environmental impacts, analyzed in a Life Cycle Assessment (LCA) study. The LCA tool is a key element in advancing the circular economy as it qualifies the impacts throughout the life of products, from raw material extraction to final disposal.

By using the Wenew portfolio, your company is contributing to a more circular future and participating in a collective effort to build a more sustainable world.

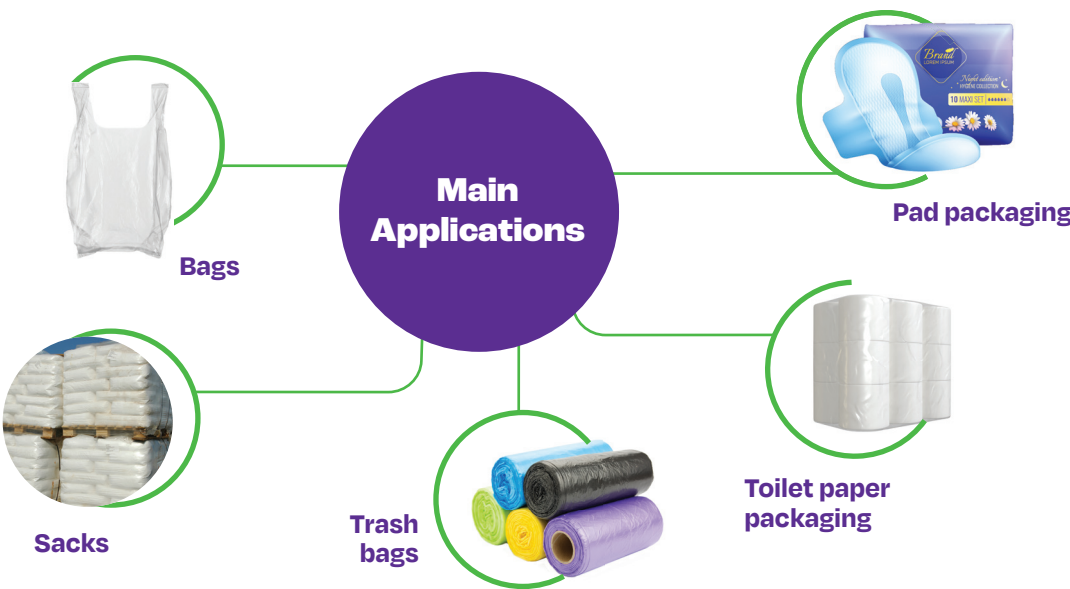
## Rigid

The concept of circular economy is increasingly present both in the design of rigid packaging and in its manufacturing process. Wenew's portfolio of resins for rigid products was developed to meet the needs of the most diverse markets, delivering quality, traceability, and safety, in line with the high technical requirements of the applications.



## Flexibles

The transition to a circular economy brings a new look to the development of packaging and the communication of brands with the consumer. This transformation encompasses the understanding of new materials and concepts, extending to the importance of proper waste disposal and the summation of forces to achieve plastic circularity. Wenew's portfolio of resins for flexible products collaborates to add value to brands by ensuring quality, differentiation, and more sustainability.



*Merely illustrative exemplary applications. The possibility of using this product for a specific purpose may change according to the country and should be analyzed by the interested party. Braskem does not guarantee the possibility of using the product with other materials for the desired application. Please check the RIS (Regulatory Information Sheet) or contact Braskem for specific regulatory information.*



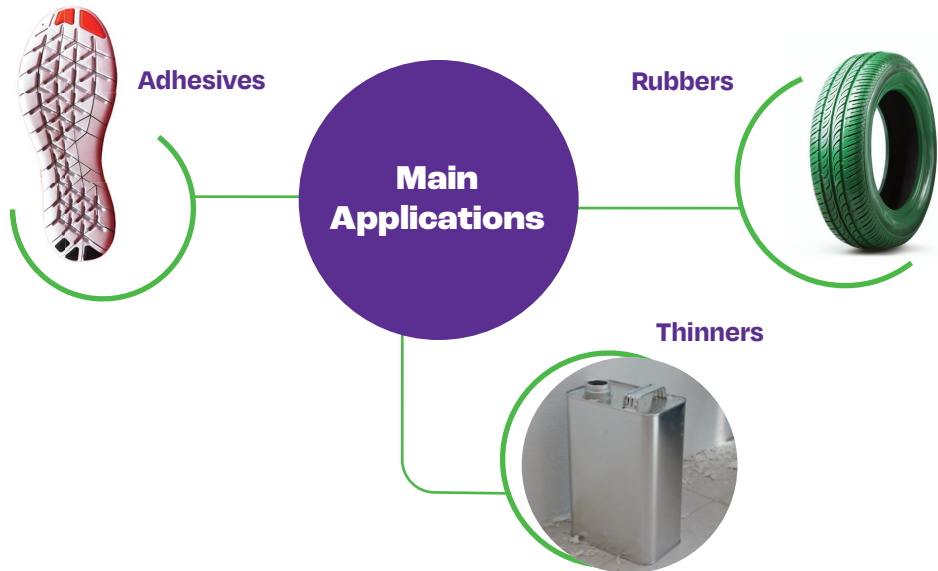
# Circular Chemicals

The Wenew chemicals portfolio has circular options developed from the manufacturing process of other Braskem products or from the advanced recycling process.



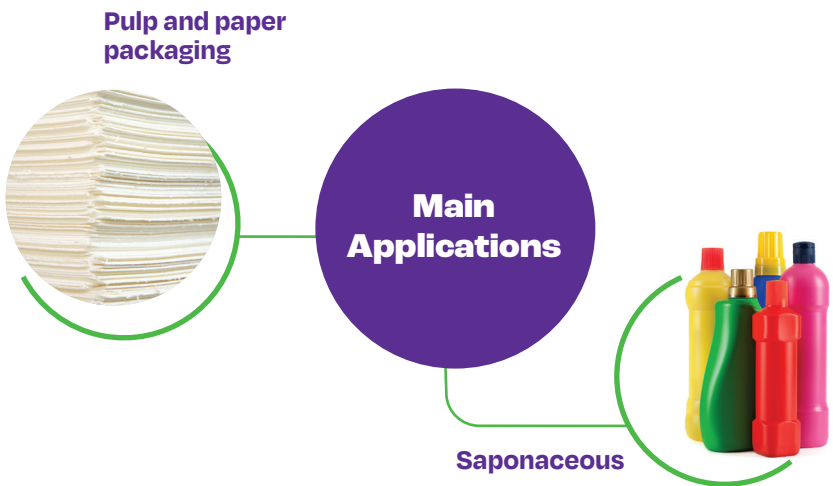
## Circular Hexane

The aliphatic hydrocarbon solvent is developed from the polyolefin production process. Besides going through strict quality controls and having a technical specification, Circular Hexane is treated before being sold. Braskem's first circular solvent, the product adds value to several applications due to its circular characteristic, which provides maximum use of raw materials while reducing waste in our production process.



## Circular Caustic Soda

Recycled alkaline solution, originating from the recycling of an aqueous gas washing solution. It is an excellent sustainable alternative for the chemical replacement process due to its high caustification efficiency and presence of sulfides.



*Merely illustrative exemplary applications. The possibility of using this product for a specific purpose may change according to the country and should be analyzed by the interested party. Braskem does not guarantee the possibility of using the product with other materials for the desired application. Please check the RIS (Regulatory Information Sheet) or contact Braskem for specific regulatory information.*



# Wenew Portfolio

Braskem has circular solutions available in all the regions where it operates. A diversified portfolio that is constantly growing, the result of research and development to meet the needs of a changing world and to collaborate with the sustainability goals of our customers and brand owners.



## Wenew Chemicals and Resins South America

### Polyethylene

	FAMILY	DEVELOPMENT CODE	APPLICATION	COLOR	MFI 190 °C/2,16 kg (g/10min)	MFI 190 °C/5, 0 kg (g/10min)	DENSITY (g/cm³)	PROCESSABILITY	STIFFNESS	DROP TEST	CHEMICAL RESISTANCE	SEALABILITY	TEAR RESISTANCE
Rigid	HDPE	DA 054B	Blow molding/Extrusion	Black	0.30	-	0.955	**	***	***	**	-	-
	HDPE	DA 055A	Blow molding/Extrusion	White/Off white	0.15	-	0.960	**	***	***	***	-	-
	HDPE	DA 065A	Blow molding/Extrusion	White/Off white	0.15	-	0.960	**	***	***	***	-	-
	HDPE	DA 065B	Blow molding/Extrusion	Black	0.15	-	0.960	**	***	***	***	-	-
	HDPE	DAR 001A	Pipes/Extrusion	Black	-	0.55	0.955	***	***	-	***	-	-
	LLDPE	DL 085C	Tubular Film	Natural	2.4	-	0.921	**	**	-	-	***	**
	LLDPE	DL 085D	Tubular/Cast Film	Natural	2.5	-	0.918	***	**	-	-	***	***
	LLDPE	DLR 001A	Tubular Film	Transparent	0.55	-	0.930	***	***	-	-	***	***
Flexible	LDPE	RPL 4C2 BL	Stretch/Coil (Tubular Film)	Blue/Translucent	1.5	-	0.925	**	***	-	-	***	**
	LDPE	RPL 4C5 WE	Stretch/Coil (Tubular Film)	White	1.5	-	0.925	**	***	-	-	***	**



Polypropylene

Polypropylene									
FAMILY	DEVELOPMENT CODE	APPLICATION	COLOR	MFI 230 °C/2, 16 kg (g/10min)	PROCESSABILITY	STIFFNESS	DROP TEST	DIMENSIONAL STABILITY	
Rigid	PP HOMO	DP 229A	Injection Molding	Black	10	**	***	*	**
	PP HOMO	DP 229B	Injection Molding	Grey	10	**	***	*	**
	PP HOMO	DP 229C	Injection Molding	Suede	10	**	***	*	**
	PP COPO	DP 237A	Injection Molding	Black	24	***	*	**	*
	PP HOMO	DP 237B	Injection Molding	Black	12	**	***	*	**
	PP COPO	DP 237C	Injection Molding	Black	13	*	**	***	*
	PP COPO	DP 237D	Injection Molding	White/Off white	24	***	*	**	*
	PP HOMO	DP 237E	Injection Molding	White/Off white	12	**	***	*	**
	PP COPO	DP 237F	Injection Molding	White/Off white	13	*	**	***	*
	PP HOMO	RPH 0J7 WE	Injection Molding	White/Off white	10	**	***	***	**
	PP HOMO	RPH 4J7 WE	Injection Molding	White/Off white	10	***	***	***	**

Caustic Circular

RELATIVE DENSITY (g/l)	PH	BOILING POINT (°C)	MELTING POINT (°C)
1	14	100	-5

Circular Hexane  
Aliphatic Hydrocarbons

RELATIVE EVAPORATION RATE (BUTYL ACETATE = 100)		HANSEN SOLUBILITY PARAMETERS (J/CM3) <sup>1/2</sup>			SOLUBILITY (% mass) at 20°C		FLASH POINT (°C)	DISTILLATION RANGE AT 760 mmHg (°C)	DENSITY (20/20 °C)
		δD	δP	δH	SOLVENT IN WATER	WATER IN SOLVENT	CLOSED CUP		
830		14.9	0.0	0.0	IMMISCIBLE	IMMISCIBLE	-26.0	58 - 80	0.670



Wenew Chemicals and Resins North America

Polyethylene

Polyethylene												
FAMILY	CODE	APPLICATION	COLOR	MFI 190 °C/2,16 kg (g/10min)	DENSITY (g/cm³)	PROCESSABILITY	STIFFNESS	DROP TEST	CHEMICAL RESISTANCE	SEALABILITY	TEAR RESISTANCE	FOOD CONTACT
Rigid	HDPE	RPR 3A1 NL	Blow molding/Extrusion	Natural	0.38	0.955	***	***	***	***		Expected Feb/23
	HDPE	RPR 5A1 WE	Blow molding/Extrusion	Natural	0.40	0.955	***	***	***	***		Expected Feb/23
	HDPE	RPR 7A1 NL	Blow molding/Extrusion	Natural	0.18	0.955	***	***	***	***		Expected Feb/23
	HDPE	RPR 0A2 NL	Blow molding/Extrusion	Natural	0.5	0.957	***	**	**	**		Expected Feb/23
	HDPE	RPR 0A2 WE	Blow molding/Extrusion	White	0.44	0.963	***	**	**	**		No
	HDPE	RPR 0A2 GN	Blow molding/Extrusion	Green	0.44	0.963	***	**	**	**		No
	HDPE	RPR 0A2 BL	Blow molding/Extrusion	Blue	0.44	0.963	***	**	**	**		No
	HDPE	RPR 0A2 RD	Blow molding/Extrusion	Red	0.44	0.963	***	**	**	**		No
	HDPE	RPR 0A2 GY	Pipes/Blow molding/Extrusion	Dark Gray	0.47	0.959	***	**	**	**		No
	HDPE	RPR 0A2 BE	Pipes/Blow molding (big volume)	Dark Blue	0.5	0.950	***	**	**	**		No
	HDPE	RHI007	Injection Molding	White	6.0	0.958	***	**		***		No
Flexible	LDPE	RPL 5A1 NL	Film	Natural	0.6	0.921	**			***	**	No
	LDPE	RPL 5C1 NL	Film	Natural	1.85	0.921	**			***	**	No
	LDPE	RLF005	Film	Natural	1.25	0.927	**			***	**	No
	HDPE	RPR 0A2 BK	Film	Black	0.45	0.960	***			***	***	No

Polypropylene

Polypropylene												
FAMILY	CODE	APPLICATION	COLOR	MFI 230 °C/2, 16 kg (g/10min)	PROCESSABILITY	STIFFNESS	DROP TEST	DIMENSIONAL STABILITY	FOOD CONTACT			
Rigid	PP COPO	DP R112	Thermoforming	Dark Gray	3				This product meets the requirements for certain FDA Food Contact Applications			
	PP COPO	DPR 117	Injection Molding – Caps & Closures	Dark Gray	16				This product meets the requirements for certain FDA Food Contact Applications			
	PP COPO	DPR 103	Injection Molding – Caps & Closures	Gray	22				No			
	PP COPO	DPR 101	Extrusion	Gray	3				No			
	PP COPO	DPR PIOR2 BK	Compounding – Auto/ Industrial	Gray	35				No			
	PP HOMO	RPH 9H2 BK	Compounding – Auto/ Industrial	Black	6				No			
	PP HOMO	RPH OE1 NL	Blow molding/Thermoforming/Cast Film	Natural	2.5	***	**	***	Expected Feb/23			
	PP HOMO	RPI008	Caps & Closures	Natural	8	**	**	***	Expected Feb/23			



Polyethylene

	FAMILY	CODE	APPLICATION	COLOR	MFI 190 °C/2,16 kg (g/10min)	DENSITY (g/cm³)	PROCESSABILITY	STIFFNESS	DROP TEST	CHEMICAL RESISTANCE	SEALABILITY	TEAR RESISTANCE
Rigid	HDPE	RDH 001A	Extrusion – Extrusion Blow molding	Green	0.8	> 0.945	**	***	-	*		
	HDPE	DA 070D	Extrusion Blow molding	Olive green	0.3	> 0.945	***	***	-	**		
	HDPE	DA 072D	Extrusion Blow molding	Olive green	0.3	> 0.945	***	***	-	**		
	HDPE	RDH 002A	Extrusion Blow molding	Natural	0.5	> 0.945	***	***	-	*		
	HDPE	RDH 003A	Extrusion Blow molding	White	0.5	> 0.945	***	***	-	*		
	HDPE	RDH 004A	Extrusion Blow molding	Light grey	0.3	> 0.945	***	***	-	*		
	HDPE	RDH 005A	Extrusion Blow molding	Natural	0.4	> 0.945	***	***	-	**		
Flexible	LDPE	RDL 001A	Film extrusion	Amber	1.2	< 0.940	**	-	-	-	***	**
	LLDPE	DL 082A	Film extrusion	White	0.6	< 0.940	***	-	-	-	***	***
	LLDPE	DL 087A	Film extrusion	White	0.8	< 0.940	***	-	-	-	***	***

Polypropylene

	FAMILY	CODE	APPLICATION	COLOR	MFI 230 °C/2, 16 kg (g/10min)	PROCESSABILITY	STIFFNESS	DROP TEST	DIMENSIONAL STABILITY
Rigid	PP HOMO	DP 249A	Extrusion, thermoforming and Injection molding	Green	3.5	**	**	***	-
	PP COPO	DP 234A	Injection molding	Grey	40	***	**	***	-
	PP COPO	DP 234B	Injection molding	Anthracite	40	***	**	***	-
	PP COPO	DP 235A	Injection molding	Grey	12	***	***	**	-



# Braskem: Global presence

With a global, human-oriented vision of the future, Braskem strives every day to improve people's lives by creating sustainable solutions in chemistry and plastics. Braskem is the largest producer of thermoplastic resins in the Americas and a global leader in the production of biopolymers on an industrial scale.

For more information, visit [www.braskem.com](http://www.braskem.com).



**+ 8.000**  
team members



**40**  
industrial units

29 plants in Brazil  
5 plants in USA  
4 plants in Mexico  
2 plants in Germany

Export to  
customers in about

**71**  
countries



**+15,4**  
MM TONS/YEAR

production of thermoplastic  
resins and other chemicals







The transition to the circular economy has already begun. Let's be part of this journey together?

**Talk to our team!**