



## Solutions for the automotive market

Polyolefins that fuel  
sustainable mobility

# Repsol. Producing and transforming your everyday energy

The products from Repsol's Chemicals Division are used to manufacture everyday items that improve people's quality of life, wellbeing, and safety.





# A global multi-energy company

With over 8 decades of experience in the world of energy

Repsol is a global company, present along the entire energy value chain. It operates low-emissions power generation assets and is currently developing renewable photovoltaic and offshore wind projects. The company is a pioneer in the development of mobility initiatives that contribute to innovative solutions and energies for transport.





# Chemicals



Over 90 countries  
where we market  
our products

Repsol employs over 25,000 people and sells its products in more than 90 countries, reaching 10 million customers. Repsol's Chemicals Division, with a high degree of integration, focuses its strategy on the constant generation of value through differentiated products and services.



Over 30 years of  
experience  
in polypropylene  
compounds

As a manufacturer of polyolefins, Repsol guarantees the quality of the raw materials it uses and offers its customers the full potential of its technology to develop new materials. Our company revolves around our customers, and we innovate with only them in mind.

# Lightweight solutions for sustainable mobility

By placing our customers at the heart of our operations, we focus our innovation solely on their needs. This allows us to create highly differentiated products, compliant with even the strictest standards.

Our Repsol Impacto® range of high impact resistance polypropylene compounds is a new step forward. These high-quality, lightweight materials offer an excellent solution for all automotive applications that require both high impact resistance and high rigidity.







At Repsol, we believe in the circular economy. Consistent with that, we have developed our Repsol Reciclex® range of polyolefins that contain post-consumer recycled waste, including vehicle parts.

These materials deliver outstanding technical performance certified by the UNE-EN 15343 standard and are adapted to automotive industry application needs. We have also incorporated circular polyolefins, originated from chemically recycled plastic waste, that are both ISCC Plus certified and maintain the same properties and quality as the original raw materials.



# Working for a more sustainable future

At Repsol, we believe in the circular economy, and we run specific projects that minimize the environmental impact of our materials. To this end, we are committed to making our industrial processes increasingly efficient and reducing the carbon footprint of our polymers.

We have a **specialized circular economy department** dedicated to recycling post-consumer materials to drive development of new materials offering solutions based on innovative polyolefins with recycled content.

We **use recycled plastics in critical applications**, creating new markets for plastic waste and driving circularity by giving that waste a new use. As a result, we offer a wide range of polyolefins with recycled content that deliver excellent engineering performance certified under UNE–EN 15343.

We have circular polyolefins obtained by incorporating pyrolysis oil, from chemically recycled plastic waste not suitable for mechanical recycling, together with virgin feedstock into our petrochemical process, reducing the consumption of non-renewable resources.

These circular polyolefins have the same properties and quality as virgin material and hold Food Contact Approval. We have obtained ISCC PLUS certification for circular and traceable polyolefins that use plastic waste as raw material. Moreover, our wide range of polyolefins is 100% recyclable.

Our ambition is to **recycle by 2030 the equivalent of 20% of the polyolefins we produce** to support, in conjunction with the other initiatives in Repsol's circular economy strategy, the goal we announced in December 2019: to reach net zero emissions by 2050.

To contribute to the company's emissions neutrality goal, **our chemicals business has launched its 3030 Plan, intended to cut our carbon intensity by 30% by 2030.**

Advancing the circular economy and lowering carbon intensity in our chemicals business will contribute towards transforming Repsol's industrial operations, as well as **developing high-value-added raw materials, making it possible to manufacture an infinite number of products that improve human well-being, safety, and quality of life** while enhancing the environment.



# Innovative range of polyolefins solutions for the industry that moves the world

## INTERIOR

- High-impact resistance.
- Low VOC, odor.
- Scratch resistance.
- Low density materials for lighter parts.
- Thermal & UV stability
- Aesthetics.

## EXTERIOR

- Safety and resistance in bumpers, doors and steering column.
- Acoustic insulation in door panels and engine compartment.
- Stiffness and high impact resistance.
- Resistance to UV and heat.
- Good behavior at low temperatures.
- Low CLTE.

## FLUID SYSTEMS

- HDPE and HMW HDPE specially designed for blow molded automotive fuel reservoirs, filler pipes, air ducts and water boxes.

## UNDER-THE-HOOD

- Very high stiffness.
- Dimensional stability under high heat load.
- Reduced warpage.
- Excellent chemical resistance.



## Repsol Impacto<sup>®</sup>

[PP VHI: Very High Impact resistance Polypropylene](#) >

[PP VHI-compounds with mineral fillers](#) >

[Innovative PP VHI-compounds for foaming technologies](#) >

## Repsol Isplen

[Talc PP compounds](#) >

[Short glass fiber PP compounds](#) >

## Repsol Reciclex<sup>®</sup>

[% recycled post-consumer material](#) >



## PP VHI: Very High Impact resistance Polypropylene

Grade	MFI	Flexural modulus	Charpy notched	Additives	Key properties
	ISO 1133 (g/10 min) 230 °C / 2.16 Kg	ISO 178 (Mpa)	ISO 179 (KJ/m <sup>2</sup> ) 23 °C		
HI0850KM	8	1,000	60	NUC / AS	Excellent impact resistance, even at low temperatures.
HI1150ND	11	1,200	45	NUC	Excellent solution for high impact/stiffness applications.
HI1550KM	15	1,000	60	NUC / AS	Excellent impact resistance, even at low temperatures.
HI2050GM	20	800	60	-	Excellent impact resistance, even at low temperatures.
HI2050KM	20	1,000	60	NUC / AS	Excellent impact resistance, even at low temperatures.

NUC: Nucleating Agent; AS: Antistatic Agent.

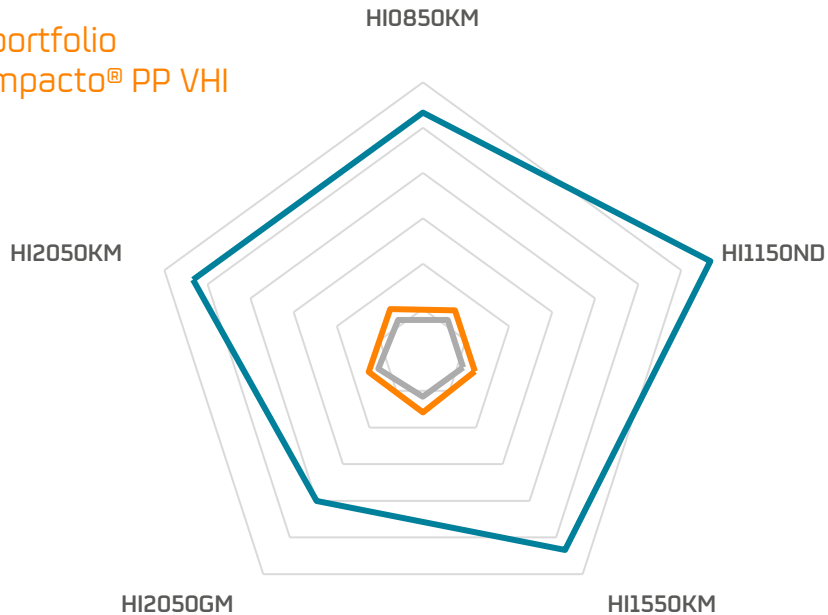


VHI with mineral fillers

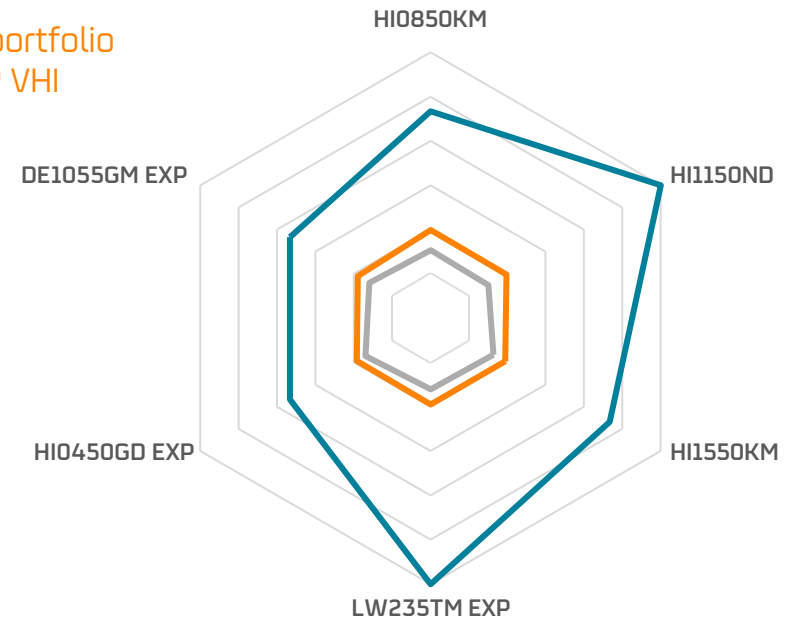
## PP VHI: Very High Impact resistance Polypropylene

Repsol decided to invest in improvements for its facilities with the installation of a new gas-phase reactor for the manufacture of very high-impact resistance polypropylene (PP VHI) for the automotive sector. These materials can reduce vehicle weight, thus improving their environmental footprint and significantly increasing the impact resistance, which protects the interior of the passenger compartment along with exterior bumper shields, increasing passenger safety.

Current portfolio  
Repsol Impacto® PP VHI



Current and future portfolio  
Repsol Impacto® PP VHI



— MFI [from 8 to 20 g/10 min]   
 — Flexural modulus [from 800 to 1200 MPa]   
 — Charpy notched 23 °C [from 25 to 60 kJ/m²]



## PP VHI-compounds with mineral fillers

### Automotive Advanced Solutions

Grade	MFI	Flexural modulus	Charpy notched	Additives	Key properties
	ISO 1133 (g/10 min) 230 °C / 2.16 Kg	ISO 178 (MPa)	ISO 179 (KJ/m <sup>2</sup> ) 23 °C		
HI1150ND	11	1,200	45	NUC	Excellent solution for high impact/stiffness applications. Available in Mistral HZD, UV stabilized. Other colors can be developed.
ITC75AE	15	1,500	50	UV	Copolymer 5% Mineral fillers reinforced. It is included in VW Approval List according to TL52388-H.
ITC85AE	20	1,450	40	UV	Copolymer 7% Mineral fillers reinforced. It is included in Renault PMR according to AS3b.
ITQ83AE	17	1,600	45	UV	Copolymer 16% Mineral fillers reinforced. It is included in VW Approval List according to TL52388-D.
ITV82AC	20	1,750	25	UV	Copolymer 17% Mineral fillers reinforced with high impact resistance with good scratch resistance.

NUC: Nucleating Agent; UV: Ultraviolet



[PP VHI](#)



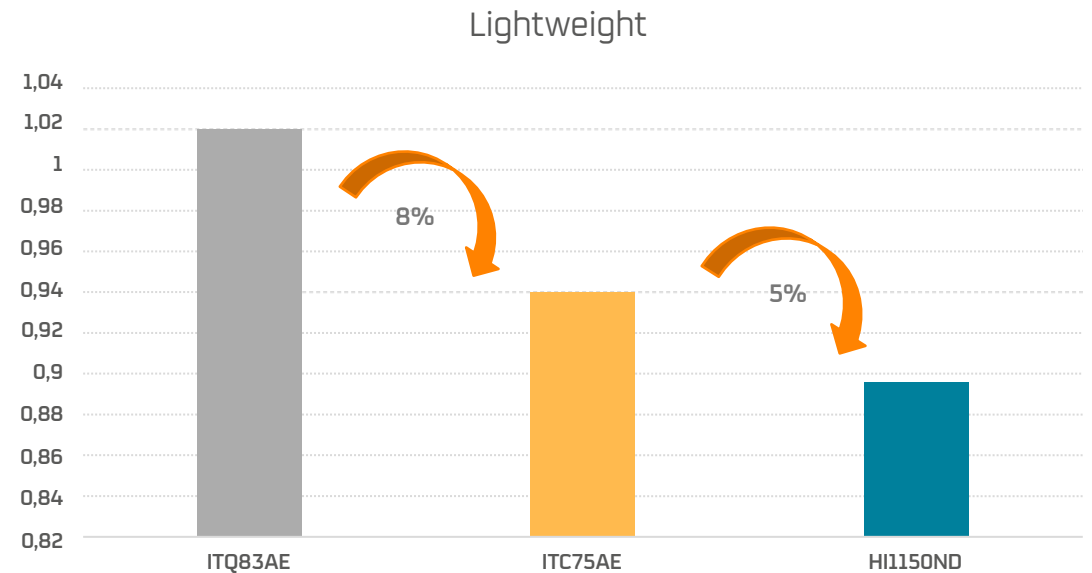
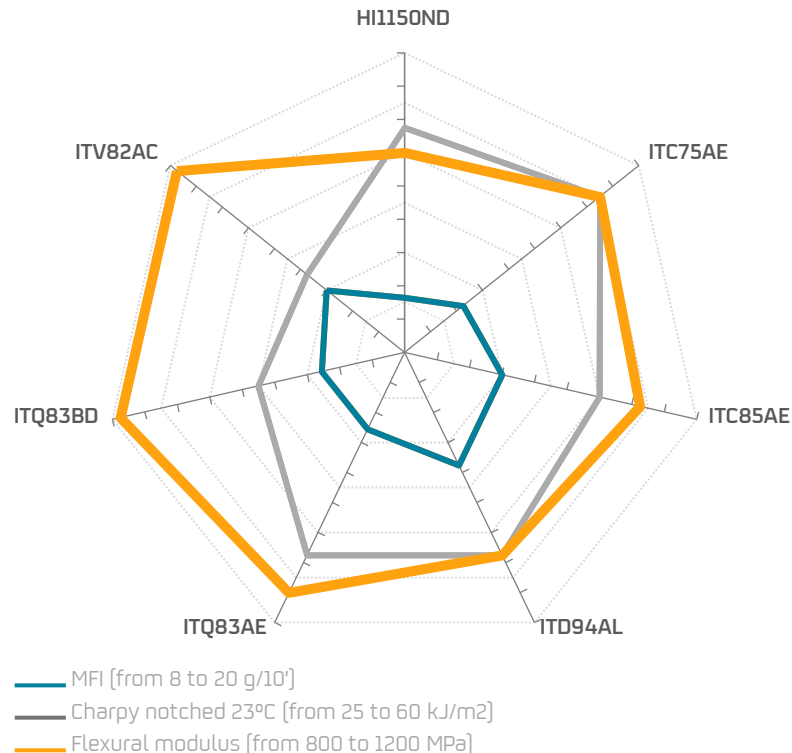
[VHI for foaming](#)



## PP VHI-compounds with mineral fillers

Repsol offers a new range of products under the Repsol Impacto® brand, our answer to the growing market demand for lightweight solutions. Our product portfolio includes three new grades with very high-impact resistance, scratch resistance and excellent aesthetical properties, suitable for interior applications such as instrument panels, door panels, central consoles, pillars, and interior trims.

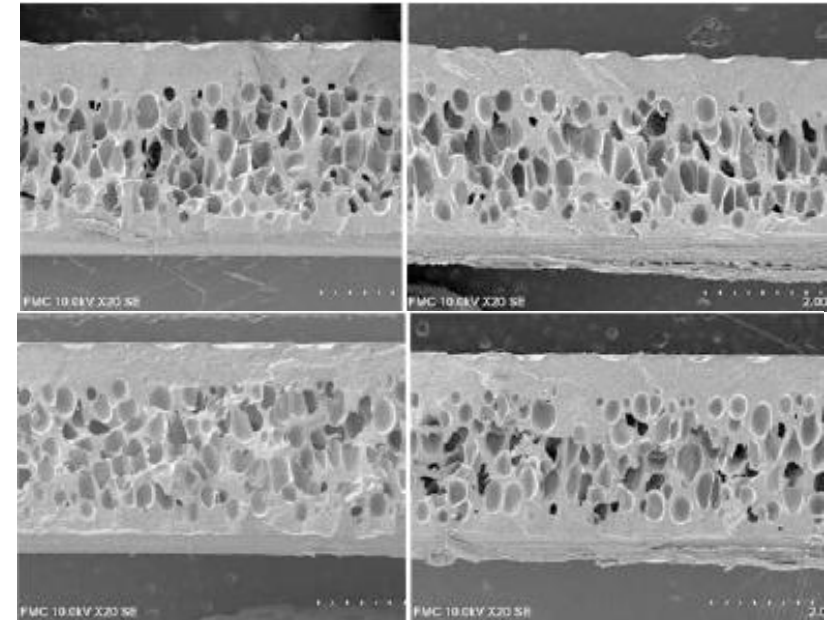
The graph on the right shows the density reduction that can be achieved without loss of mechanical properties like impact strength or stiffness.



## Innovative PP VHI-compounds for foaming technologies

It is an excellent solution for high-impact applications such as interior trims and door panels. Aesthetic properties were successfully achieved in visible colored door panel trials. Cell size is around 250 µm and pictures on the right show cell structure homogeneity.

Other PP compounds, such as mineral filled solutions 10% for interior and 20% for exterior aesthetic applications, were recently approved by our customers and have since joined our portfolio.



For detailed technical information, please contact Repsol's TS&D Department.

Grade	Ash level	Density	MFI	Flexural modulus	Charpy notched	Charpy notched	Additives	Key properties
	ISO 1172 [%]	ISO 1183 [g/cm <sup>3</sup> ]	ISO 1133 [g/10 min] 230 °C / 2.16 Kg	ISO 178 [MPa]	ISO 179 [KJ/m <sup>2</sup> ] 23°	ISO 179 [KJ/m <sup>2</sup> ] -20°		
<b>ITD94AL</b>	12	0,98	25	1,350	45	4,8	UV	Copolymer 12% mineral fillers reinforced developed for chemical foaming.

UV: Ultraviolet.



[VHI with mineral fillers](#)



[Talc PP Compounds](#)

# Repsol Impacto®



The **new Repsol Impacto® ITD 94AL** is a copolymer reinforced with 12% mineral fillers. It demonstrates high-impact resistance and is suitable for chemical foaming, such as Core Back technology.

Basic properties, mechanical/impact requirements and organic emissions were evaluated on injected specimens, while multiaxial impact, bending tests and microstructural properties were tested on Core Back plaques from a door panel.

**Repsol Impacto® ITD 94AL** was specifically designed and manufactured to comply with the increasingly demanding requirements of the automotive market, and, as such, boasts reduced weight (a reduction of approximately 15%) for consumption savings and decreased emissions.





## Talc PP compounds

### Automotive Interior under the hood applications

Grade		MFI	Impact	Flexural Modulus	Application	Key properties
		ISO 1133 (g/10 min) 230 °C / 2.16kg	ISO 179 (kJ/m <sup>2</sup> ) Notched 23 °C	ISO 178 (MPa)		
PM440AT	PP-T40	3	2.9	4,100	Under the bonnet parts subjected to high thermal stress (light housings, HVAC elements), AC inserts, heaters and air conditioning units.	High stiffness, as well as a low warpage and shrinkage behavior. High heat and chemical stabilized.
PM180AT	PP-T10	22	2.5	2,200	Technical parts, in general. Electrical appliances.	Good processability, high stiffness with good impact resistance, and low warpage, and shrinkage behavior.
PM270RT	PP-T20	12	2.5	2,600	Under the bonnet parts subjected to high thermal stress (light housings, heat and ventilation ducts). Heaters and air conditioning units.	High stiffness, low warpage, and shrinkage behavior. High heat stabilized low emission and low odor properties.
PM162AV	P/E-T20	10	4	1,800	Interior trims and panels, technical parts, in general and electrical appliances.	Good impact strength, medium rigidity, high stiffness, low warpage, and low shrinkage behavior. UV stabilized.
PM276EV	P/E-T15	15	9	1,700	Interior trims and panels and technical parts, in general.	High impact resistance with excellent scratch resistance, good stiffness, and demolding properties during the transformation process. UV stabilized
PM274AS	P/E-T20	14	5.5	2,400	Insertion, steps, structural parts, electrical appliances and white line and technical pieces, in general.	High stiffness, good impact strength, good aesthetic properties, and a high gloss surface. Standard stabilization.
PM281AV	P/E-T20	26	3	2,600	Interior trims and panels, electrical appliances and technical pieces, in general.	High stiffness, good impact resistance, low warpage, and high shrinkage behavior, an outstanding gloss surface, and excellent scratch resistance. UV stabilized.
PM288AV	P/E-T20	16	6.5	1,800	Interior trims and panels, electrical appliances and technical pieces, in general.	High stiffness and good impact strength. It was designed to show a high stiffness with good impact resistance, and low warpage and high shrinkage behavior. UV stabilized.



[VHI for foaming](#)



[SG fiber](#)

# Repsol Isplen

## Short glass fiber compounds



As previously stated, one of the more challenging goals in the automotive market is to reduce the weight of vehicles to improve fuel efficiency and reduce CO<sub>2</sub> emissions. In the case of electric vehicles (ELVs), lightweighting is also of utmost importance. As such, it is imperative to work towards enhanced polymers that are capable of replacing traditional materials such as metals, PA or PC/ABS blends primarily in structural parts.

Grade		MFI	Impact	Flexural Modulus	Key properties	Filler
		ISO 1133 (g/10 min) 230 °C / 2.16 Kg	ISO 179 (kJ/m <sup>2</sup> ) Notched 23 °C	ISO 178 (MPa)		
PG370AT	PP-GF30	13	9	5,650	High impact resistance with an excellent balance in mechanical properties in terms of good stiffness and low temperature impact behavior. UV stabilized for long-term outdoor applications.	30% glass fiber
PG370AV	PP-GF30	13	9	5,650	Very high stiffness, keeping good impact strength at every range of temperatures, low warpage, and shrinkage behavior. High heat stabilized, and UV protection.	30% glass fiber
PG370DT	PP-GF30	15	10	7,000	High impact resistance with an excellent balance in mechanical properties in terms of good stiffness and low temperature impact behavior. UV stabilized for long-term outdoor applications.	30% glass fiber
PG362AV	PP-GF30	18	16	6,200	Very high stiffness, keeping high impact strength at every range of temperatures, shows low warpage, and shrinkage behavior. This material is thermal, and UV stabilized.	30% glass fiber



[Talc PP Compounds](#)



[Glass fiber](#)

# Repsol Isplen

## Glass fiber PP compounds

### Automotive materials solutions for EV chargers



Grade	MFI	Impact	Flexural Modulus	Application	Key properties	
	ISO 1133 (g/10 min) 230 °C / 2.16 kg	ISO 179 (kJ/m <sup>2</sup> ) Notched 23°C	ISO 178 (MPa)			
PG560AV	PP-50GF	12	12,000	Parts subjected to severe mechanical stresses and technical parts, in general.	Very high stiffness, keeping good impact strength at every range of temperatures, shows low warpage, and shrinkage behavior. This material is thermal, and UV stabilized.	
PG370CV	PP-30GF	12	9	5,650	Under the bonnet parts subjected to severe mechanical stresses and technical parts, in general.	High impact resistance with an excellent balance in mechanical properties in terms of good stiffness and low temperature impact behavior. UV stabilized for long term outdoor applications.



[SG fiber](#)



[PP Reciclex](#)

The information contained herein is based on REPSOL QUIMICA's current knowledge and experience and is presented in good faith for guidance only. Although REPSOL QUIMICA declares to have been most diligent when including the information contained herein, taking into account that several and different factors may affect the processing, application or use of the products, the convertor shall be responsible in every case for the conditions under which the products are transformed as well as for the final use given to them. REPSOL QUIMICA warns that this information may undergo variations or improvements; therefore REPSOL QUIMICA is not obliged to reflect these in this document or to communicate them to whomever may have access to it. Moreover, these readers should be aware that some or all of the products might be protected by intellectual property rights. © REPSOL QUIMICA, S.A. 2023. All rights reserved.



# Repsol Reciclex<sup>®</sup>



## % recycled post-consumer material

	Grade		MFI	Impact	Flexural Modulus	Application	Key properties	% recycled post-consumer material
			ISO 1133 (g/10 min) 230 °C / 2.16Kg	ISO 179 (kJ/m <sup>2</sup> ) Notched 23 °C	ISO 178 (MPa)			
<b>NEW!</b>	05RXM440D	PP-T40	3	3	4,300	Under the bonnet parts subjected to severe mechanical stresses. Technical parts, in general.	Very high stiffness, keeping good impact strength at every range of temperatures. Shows a low warpage, and shrinkage behavior. With thermal protection.	5%
	10RXG370A	Homopolymer	15	7	5,600	Technical parts, in general, electrical housings, power tools and washing machines cylinders.	Very high stiffness, keeping good impact strength at every range of temperatures. Shows a low warpage, and shrinkage behavior.	10%
	50RXPP091	Homopolymer	35	4	3,000	Under the bonnet parts subjected to severe mechanical stresses. Technical parts, in general.	Good processability, excellent stiffness for technical pieces.	50%
<b>NEW!</b>	PM274ZS801	PP-T20	15	4	2,000	Technical parts, in general, insertion, steps, structural parts.	High stiffness, low warpage, and shrinkage behavior.	n/a



[Glass fiber](#)



[PP Reciclex](#)

The information contained herein is based on REPSOL QUIMICA's current knowledge and experience and is presented in good faith for guidance only. Although REPSOL QUIMICA declares to have been most diligent when including the information contained herein, taking into account that several and different factors may affect the processing, application or use of the products, the convertor shall be responsible in every case for the conditions under which the products are transformed as well as for the final use given to them. REPSOL QUIMICA warns that this information may undergo variations or improvements; therefore REPSOL QUIMICA is not obliged to reflect these in this document or to communicate them to whomever may have access to it. Moreover, these readers should be aware that some or all of the products might be protected by intellectual property rights. © REPSOL QUIMICA, S.A. 2023. All rights reserved.

# Repsol Reciclex<sup>®</sup>



## % recycled post-consumer material

	Grade		MFI	Impact	Flexural Modulus	Application	Key properties	Reinforcing material
			ISO 1133 (g/10 min) 230 °C / 2.16Kg	ISO 179 (kJ/m <sup>2</sup> ) Notched 23°C	ISO 178 (MPa)			
<b>NEW!</b>	PG180ZS000	Homopolymer	18	6.3	2,890	Automotive & structural parts, electrical housings, power tools.	High stiffness and low warpage and shrinkage.	Glass fiber
<b>NEW!</b>	PG370ZS000	Homopolymer	13.7	9.3	5,595	Under the bonnet parts.	High stiffness and low warpage and shrinkage.	Glass fiber



Glass fiber

The information contained herein is based on REPSOL QUIMICA's current knowledge and experience and is presented in good faith for guidance only. Although REPSOL QUIMICA declares to have been most diligent when including the information contained herein, taking into account that several and different factors may affect the processing, application or use of the products, the convertor shall be responsible in every case for the conditions under which the products are transformed as well as for the final use given to them. REPSOL QUIMICA warns that this information may undergo variations or improvements; therefore REPSOL QUIMICA is not obliged to reflect these in this document or to communicate them to whomever may have access to it. Moreover, these readers should be aware that some or all of the products might be protected by intellectual property rights. © REPSOL QUIMICA, S.A. 2023. All rights reserved.

# Safety and quality are our priority

All our petrochemical complexes and production plants meet the most stringent quality and safety standards.

Our petrochemical complexes, packaging production plants and logistics centers have rigorous food-safety management systems in place and hold ISO 45001.

Their manufacturing, distribution, transport, and end-product storage processes are also certified to the ISO 9001 quality standard. The Chemicals units at our complexes operate under an Energy Management System. Our Certified Environmental Management System guarantees that Best Available Practices and Technologies are in place to minimize the impact of our sites.

## IATF 16949 certified

In 2021 we have obtained the highest certification for our auto products, having adapted all our automotive materials production centers under the IATF 16949 standard, an international standard for quality management systems in the automotive industry. This standard is the most demanding for quality management systems in the automotive sector at an international level and one of the essential requirements that car manufacturers require from their suppliers.

## Certifications

<b>All Repsol complexes and plants</b>	<b>All Repsol complexes</b>	<b>Puertollano, Tarragona, and Sines</b>	<b>Puertollano, Tarragona and Monzón plants</b>	<b>Puertollano and Monzón plants</b>
ISO 45001 FSSC 22000	ISO 9001 ISCC Plus	ISO 50001 ISO 14001 ISO 14064	IATF 16949	UNE-EN 15343







# Environment

**We offer sustainable solutions for our clients: 100% recyclable polyolefins.**

We have set up and deployed an ambitious CO<sub>2</sub> program reduction that pursues a 40% reduction in SCOPE 1 & 2 emissions by 2030 (2017 as reference year) and zero emissions before 2050. Energy efficiency programs to reduce energy consumption and GHG emissions are one of the key elements of our strategy in the short term, followed by deep process electrification and CCUS. Biofeedstocks and renewable electricity will have a relevant role in this transition.

These programs pursue long-term targets made public to facilitate their progress by the stakeholders. In this sense, Repsol Química is committed to a reduction of 0.26 million tons per year of GHG emissions in the 2021-2025 Strategic Plan and a 1.3 million tons per year reduction until 2030 with a roadmap to be a net-zero company before 2050.

Regarding SCOPE 3 emissions, Repsol Química will contribute to the CO<sub>2</sub> emissions reduction at the plastics' end of life with our circularity projects.

All petrochemical complexes have ISO 14001 certification for their environmental management and the reduction

of the impact of their facilities, and ISO 14064 for the annual verification of greenhouse gas (GHG) emissions. In addition, the chemical area of our complexes in Tarragona (2015), Puertollano (2013), and Sines (2016) has implemented an Energy Management System according to the requirements indicated in the International Standard ISO 50001. This system is dedicated to developing and implementing our organization's energy policy and managing the energy aspects of our activities, products, or services. The objective is to increase and improve our energy efficiency based on systems implementation aimed at continuous energy performance improvement, thus contributing to more efficient and sustainable energy use.

Repsol Química has released on a yearly frequency the carbon footprint of all its product families since 2020, considering the "cradle to gate" scope based on ISO 14067.

Repsol's purpose is to become a net-zero emissions company by 2050, and our 2021-2025 Strategic Plan enables us to continue successfully advancing our multi-energy commitment.

*Collaboration*

*Results orientation*

*Inspiring leadership*

*Intrapreneurship*

*Accountability*





## Chemicals Customer Care

### SPAIN

Tel.: 900 10 32 39  
Tel.: + 34 91 753 18 01

### PORTUGAL

Tel.: 800 60 501 111  
Tel.: +34 91 753 18 05

### FRANCE

Tel.: 800 60 503 333 Tel.:  
+34 91 753 18 02

### ITALY

Tel.: 800 60 509 999  
Tel.: +34 91 753 18 04

### GERMANY

Tel.: 800 60 504 444 Tel.:  
+34 91 753 18 00

### UNITED KINGDOM

Tel.: 800 60 502 222  
Tel.: +34 91 753 18 03

[sacrq@repsol.com](mailto:sacrq@repsol.com)

[www.repsol.com](http://www.repsol.com)



## Corporate Headquarters

Méndez Álvaro, 44  
28045 Madrid. Spain  
Tel.: +34 91 753 81 00  
[www.repsol.com](http://www.repsol.com)

## Technical Service & Development Repsol Technology Lab

Agustín Betancourt, s/n  
28935 Móstoles, Madrid. Spain  
Tel.: +34 91 753 86 00  
[atd\\_poliolefinas@repsol.com](mailto:atd_poliolefinas@repsol.com)