



# Sustainable solutions in polymers

Towards a Circular Economy

*repsol*



# Innovating for a sustainable world

At Repsol, we believe in the circular economy. We focus our innovation solely on our customers' needs to create highly differentiated products compliant with even the strictest standards.

Our Repsol Reciclex® range includes three certified sustainable polyolefin families:

- ✓ **Mechanical Recycling Range:** Over 30 grades with high recycled content, offering excellent technical performance. **Certified by Recyclass.**
- ✓ **Chemical Recycling Range:** Circular polyolefins from plastic waste, maintaining virgin-like quality. **Certified by ISCC Plus.**
- ✓ **Bio-Circular Range:** Polyolefins from renewable waste, with identical properties to virgin materials. **Certified by ISCC Plus.**



# Repsol. A global multi-energy company

## With over 8 decades of experience

We are leading the energy transition by being the first company in the energy sector to set the goal of reaching net-zero emissions by 2050.

Present throughout the energy value chain, the **company employs 25,000 people worldwide** and distributes its products **in over 90 countries**. Customer-focused product and services portfolio meets all consumer needs of around **24 million customers**, whether at home or on the move.

Repsol Campus, Corporate Headquarters in Madrid LEED® Platinum certificate, awarded by the prestigious U.S. Green Building Council (USGBC), for new buildings construction



# Materials



## We market our products in over 90 countries

With **over 60 years of experience producing materials**, we provide the expertise to manage every crucial aspect of the value chain: research, development, manufacturing, marketing, and distribution.

**Operating three integrated production sites** in the Iberian Peninsula, we have experience launching high-purity products with strict handling protocols and consistently supplying materials to the food packaging sector.

**Our Technology Lab serves as the core of our innovation and development efforts.** It is where our products are created and refined with great care as we strive to deliver innovative solutions tailored to our customers' requirements.

## Producing from base petrochemicals to derivatives

Repsol manufactures a wide variety of products, ranging from base petrochemicals to derivatives

**Base chemicals:** ethylene, propylene, butadiene, benzene, and styrene.

**PO Derivates:** propylene oxide, polyether polyols, and propylene glycols.

**Polymers:** polypropylene (PP) and PP compounds, both high- and low-density polyethylene (HDPE and LDPE), metallocene linear low-density polyethylene (mLLDPE), ethylene vinyl acetate (EVA), and ethylene butyl acrylate (EBA) copolymers.

## Our goal

We aim **to create advanced products and provide high-quality solutions** that support the growth of your business.

# Working for a more sustainable future

We run targeted projects that minimize the environmental impact of our materials. To this end, we are committed to improving the efficiency of our industrial processes and reducing the carbon footprint of our polymers.



We have a **specialized circular economy department** dedicated to recycling post-consumer materials, driving the development of new materials that offer 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 RecyClass**.

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.

Furthermore, we offer a **full Repsol ISCC Plus Certified polyolefin circular range**, derived from bio and organic waste.

Moreover, our wide range of polyolefins is **100% recyclable**.

Our ambition is to **produce 10% of our polyolefins as circular and bio-circular products by 2030**, supporting, in conjunction with 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 our emissions neutrality goal, we have set the **objective of reducing our carbon intensity by 30% by 2030**.

Advancing the circular economy and lowering carbon intensity of our operations will contribute towards transforming Repsol's industrial business, 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.

# Repsol Reciclex<sup>®</sup> range

## Advancing the sustainability circle

Repsol Reciclex<sup>®</sup> products support our clients in their sustainability goals comprehensively.

With **three ranges** to support each project in a **personalized way**:

- ✔ Mechanical Recycling
- ✔ Chemical Recycling
- ✔ Bio-circular Polymers

With a vocation to continue advancing and supporting the goal of **zero net emissions**.



# The range that fosters circularity

## How do we name our sustainable grades?

**Mechanical recycling** grades equivalent to standard grades include RX in their nomenclature:

**LDPE/LLPE/HDPE:** 00RXYYYY  
i.e.: Repsol Reciclex® 70RX5203  
(incorporating 70% recycled content)

**PP:** RXP/RXIYYY  
i.e.: Repsol Reciclex® RXI52BG000

**Chemical recycling** grades equivalent to standard grades include CIRC before their regular nomenclature Repsol Reciclex® CIRCYYYYYY, i.e.

Repsol Primeva® P28400 >  
Repsol Reciclex® CIRC P28400



## Mechanical Recycling

Over 30 grades with high proportions of recycled content.

Applications in film, rigid packaging, auto, blow molding, compounding and others.

Non-food applications.

Low carbon footprint.

Recyclclass traceability certificate.

Consistent quality and homogeneity.

100% recyclable.



## Chemical Recycling

100% PCR.

Completes the material life cycle.

Full Repsol range across all applications.

Same properties as standard range.

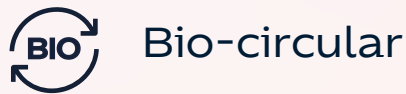
Suitable for sensitive applications: food, hygiene and medical use.

ISCC Plus certificate.

100% recyclable.

# The range of polyolefins derived from renewable waste

Advancing towards a circular economy



100% bio-circular

Complies with all Food Safety regulations and, like the rest of our range.

100% recyclable to close the circle of sustainability.

ISCC Plus certificate

Suitable for sensitive applications: food, cosmetics, hygiene, and medical use.

Low carbon footprint

How do we name our sustainable grades?

Bio-circular grades equivalent to standard grades include CBIO to their regular nomenclature **Repsol Reciclex®** CBIOYYYYYY, i.e.:

Repsol Primeva® P28400 >  
Repsol Reciclex® CBIO P28400



# Close to 30 grades of Repsol Reciclex®

We are embarking on partnerships to find solutions together.

We are committed to innovating to increase the circularity and efficient use of plastic materials.

- Incorporating mechanically and chemically recycled plastics.
- Giving plastic waste a new life to avoid it ending up in a landfill.
- Reducing fossil raw material consumption.
- Reducing carbon footprint. Committing to technical requirements.
- Helping to meet voluntary commitments and legislative targets.



Automotive



Well-being &  
consumer products



Packaging

[Flexible packaging](#)

[Blow molding](#)

[Injection molding](#)

[Sheet & general extrusion](#)

[Fibers molding](#)

[Wire & cable](#)

[Caps & closures](#)



# Flexible packaging

## LDPE

| Grade            | Recycled material<br>(%) PCR | Similar reference | Color   | LLDPE content<br>(%) | MFI<br>(g/10 min)<br>190 °C/2.16 Kg | Density<br>(kg/m <sup>3</sup> ) | Application   |
|------------------|------------------------------|-------------------|---------|----------------------|-------------------------------------|---------------------------------|---|
| <b>50RX2404F</b> | 50                           | 2203F             | Natural | 15-25                | 0.4                                 | 924                             | Thin shrink film, medium duty industrial bags, films for general packaging. |
| <b>80RX2404F</b> | 80                           | 2203F             | Natural | 15-25                | 0.4                                 | 924                             |   |
| <b>70RX2805F</b> | 70                           | 2805F             | Natural | 35-45                | 0.8                                 | 925                             | Shrink film, medium duty industrial bags, films for general packaging.      |
| <b>60RX3235G</b> | 60                           | 3235FGA           | Natural | 35-45                | 2                                   | 923                             | Hygiene overwrap films and easy tear films.                                 |
| <b>85RX2310F</b> | 85                           |                   | Natural | 45-55                | 1                                   | 921                             | Packaging and medium-capacity bags.   |



**Sustainability**  
Materials that incorporate plastic post-consumer waste lower the carbon footprint



**Less energy**  
High fluidity, excellent processability

## LLDPE/mLLDPE

| Grade            | Recycled material<br>(%) PCR | Similar reference | Color   | LLDPE content<br>(%) | MFI<br>(g/10 min)<br>190 °C/2,16 kg | Density<br>(kg/m <sup>3</sup> ) | Application   |
|------------------|------------------------------|-------------------|---------|----------------------|-------------------------------------|---------------------------------|---|
| <b>70RX2110G</b> | 70                           | MF1810FG          | Natural | 70-85                | 1                                   | 923                             | Carrier bags, refuse bags with demanding properties.      |
| <b>70RX2110F</b> | 70                           | MF1810F           | Natural | 70-85                | 1                                   | 923                             | Medium duty industrial bags, films for general packaging. |
| <b>80RX1830F</b> | 80                           | MF1835F           | Natural | 85-95                | 3                                   | 918                             | Stretch film.   |



**Downgauging**  
Film thickness reduction



[Blow molding](#)

# Blow molding

## HDPE

| Grade               | Recycled material (% PCR) | Similar reference | Color                   | MFI (g/10 min) | Density (kg/m <sup>3</sup> ) | Tensile strength at break (MPa) | ESCR (h) | Flexural modulus (MPa) | Application  |
|---------------------|---------------------------|-------------------|-------------------------|----------------|------------------------------|---------------------------------|----------|------------------------|--|
| <b>30RX5203</b>     | 30                        | 5203              | Natural, grey and white | 0,25 *         | 955                          | 25                              | 45       | 1100                   | Thin walls blow molded containers up to 10 liters for liquid detergents and chemicals. |
| <b>50RX5203</b>     | 50                        | 5203              | Natural, grey and white | 0,25 *         | 955                          | 20                              | 45       | 1100                   | Blow molded containers up to 10 liters for liquid detergents and chemicals.            |
| <b>50RX5503</b>     | 50                        | 5503              | Natural, grey and white | 0,25 *         | 955                          | 20                              | 100      | 1100                   |  |
| <b>70RX5203</b>     | 70                        | 5203              | Natural, grey and white | 0,25 *         | 955                          | 20                              | 60       | 1100                   |  |
| <b>100RX5203G/B</b> | 100                       | 5203              | Grey and white          | 0.3 *          | 955                          | 17                              | 40       | 1150                   | Blow molding of jerrycan containers and industrial packaging for ADR.                  |
| <b>80RX55050</b>    | 80                        | 55050             | Light grey              | 10,5 **        | 960                          | 25                              | 200      | 950                    |  |

\* MFI (190 °C / 2.16 kg)

\*\* MFI (190 °C / 21.6 kg)



[Flexible packaging](#)



[Injection molding](#)



# Injection molding

## Polypropylene

| Grade             | Recycled material<br>(%) PCR | Similar reference | Color      | MFI<br>(g/10 min)<br>230° C/2,16 kg | Density<br>(kg/m <sup>3</sup> ) | Flexural modulus<br>(MPa) | Charpy impact strength<br>23°C, notched<br>(kJ/m <sup>2</sup> ) | Application   |
|-------------------|------------------------------|-------------------|------------|-------------------------------------|---------------------------------|---------------------------|---|---|
| <b>RXP48AH000</b> | 40                           | PP080G2M          | Light grey | 16                                  | 905                             | 1550                      | 4   | Containers and rigid packaging, garden, and domestic furniture, base product for compounds, caps, and closures.         |
| <b>RXP52BI000</b> | 50                           | PB170G2M          | Light grey | 10                                  | 910                             | 1100                      | 10  | Domestic and leisure furniture, square boxes and round storage containers for consumer appliances, flowerpots, buckets. |
| <b>RXP49AG000</b> | 40                           | PB190K2M          | Light grey | 30                                  | 905                             | 1200                      | 9.0   |   |
| <b>RXP59AG000</b> | 50                           | PB196K1M          | Natural    | 30                                  | 905                             | 1400                      | 10  | Pallets, furniture, and technical parts, in general.  |
| <b>RXP77AT000</b> | 80                           |                   | Black      | 12                                  |                                 | 1600                      | 4.5   |   |



[Blow molding](#)



[Sheet & extrusion](#)

# Sheet & general extrusion

## Polypropylene

| Grade             | Type of recycled material | Recycled material % | Similar reference | Color   | MFI (g/10 min) 230 °C/2,16 kg | Density (kg/m <sup>3</sup> ) | Flexural modulus (MPa) | Charpy impact strength 23°C, notched (kJ/m <sup>2</sup> ) | Application                           |
|-------------------|---------------------------|---------------------|-------------------|---------|-------------------------------|------------------------------|------------------------|---|---------------------------------------|
| <b>RXI52BG000</b> | PIR                       | 50                  | PB130G1F          | Natural | 1                             | 905                          | 1500                   | 10  | Sheet extrusion. Boards and profiles. |



[Injection molding](#)



[Fibers molding](#)

# Fibers molding

## Polypropylene

| Grade             | Type of recycled material | Recycled material % | Similar reference   | Color      | MFI (g/10 min) 230 °C/2,16 kg | Flexural modulus (MPa) | Charpy impact strength 23°C, notched (kJ/m <sup>2</sup> ) | Application                              |
|-------------------|---------------------------|---------------------|---------------------|------------|-------------------------------|------------------------|---|--|
| <b>RXP33AA000</b> | PCR                       | 35                  | PP020G1E / PP030G1E | Light grey | 2                             | 1600                   | 5   | Monofilament, strap and sheet extrusion. |
| <b>RXP59HY000</b> | PIR                       | 50                  | PP086Y3E            | Natural    | 25                            | 1600                   | 4   | Spunbond, BCF and CF.                    |



Lightweight



Reusable



Recyclable



Recycled content

New PP grade **incorporates recycled material while ensuring consistency** in quality and functionality

# Wire & cable

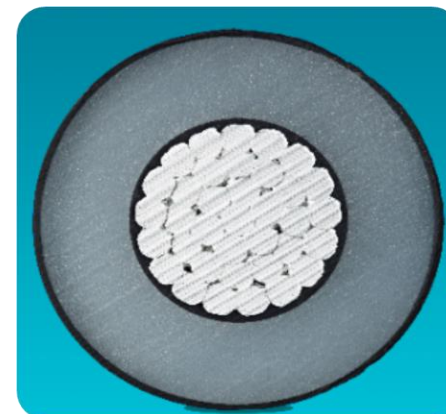
## LDPE

| Grade            | Recycled material<br>(%) PCR | Similar reference | Color   | LLDPE content<br>(%) | MFI<br>(g/10 min)<br>190 °C/2.16 Kg | Density<br>(g/cm <sup>3</sup> ) | Application                               |
|------------------|------------------------------|-------------------|---------|----------------------|-------------------------------------|---------------------------------|---|
| <b>60RX3235G</b> | 60                           | 3235FGA           | Natural | 35-45                | 2                                   | 923                             | LDPE for jacketing and bedding compounds. |



## LLDPE/mLLDPE

| Grade            | Recycled material<br>(%) PCR | Similar reference | Color   | LLDPE content<br>(%) | MFI<br>(g/10 min)<br>190 °C/2.16 Kg | Density<br>(g/cm <sup>3</sup> ) | Application                                |
|------------------|------------------------------|-------------------|---------|----------------------|-------------------------------------|---------------------------------|--|
| <b>70RX2110G</b> | 70                           | MF1810FG          | Natural | 70-85                | 1                                   | 923                             | LLDPE for jacketing and bedding compounds. |
| <b>70RX2110F</b> | 70                           | MF1810F           | Natural | 70-85                | 1                                   | 923                             |  |
| <b>80RX1830F</b> | 80                           | MF1835F           | Natural | 85-95                | 3                                   | 918                             |  |



# Caps & closures

## Polypropylene

| Grade            | Recycled material<br>(%) PCR | Similar reference | Color   | LLDPE content<br>(%) | MFI<br>(g/10 min)<br>190 °C/2.16 Kg | Density<br>(g/cm <sup>3</sup> ) | Application                               |
|------------------|------------------------------|-------------------|---------|----------------------|-------------------------------------|---------------------------------|---|
| <b>60RX3235G</b> | 60                           | 3235FGA           | Natural | 35-45                | 2                                   | 923                             | LDPE for jacketing and bedding compounds. |



[Wire & cable](#) 

# Safety & quality are our priority

Excellence is intrinsic to Repsol's values. It infuses our daily work and helps guide our decisions and actions, contributing to the achievement of the commitments made to our customers, stakeholders, employees, suppliers/partners, and society to build a better future.

Our chemical complexes and logistics centers are all ISO 45001 certified. We are food safety leaders. All our facilities are FSSC 22000 certified, recognizing our food safety risk management processes throughout the supply chain.

Technical Data Sheets and MSDS are available on: [www.repsol.com](http://www.repsol.com)

All petrochemical plants are compliant with the current ISO 9001 standards for the quality of processes from manufacture to distribution, transport management, and end-product warehousing.

In February 2019, we obtained the ISCC PLUS certification in all our polyolefin production centers. We are one of the leading companies in the production of circular polyolefins, utilizing recycled plastic waste as a raw material. This certification exemplifies our commitment to promoting the Circular Economy of our materials.

## Certifications

**Petrochemical plants, plants, & logistics**

ISO 45001

**All industrial complexes**

FSSC 22000

**All chemical plants**

ISO 9001  
ISCC Plus

**Puertollano, Tarragona, & Monzón plants**

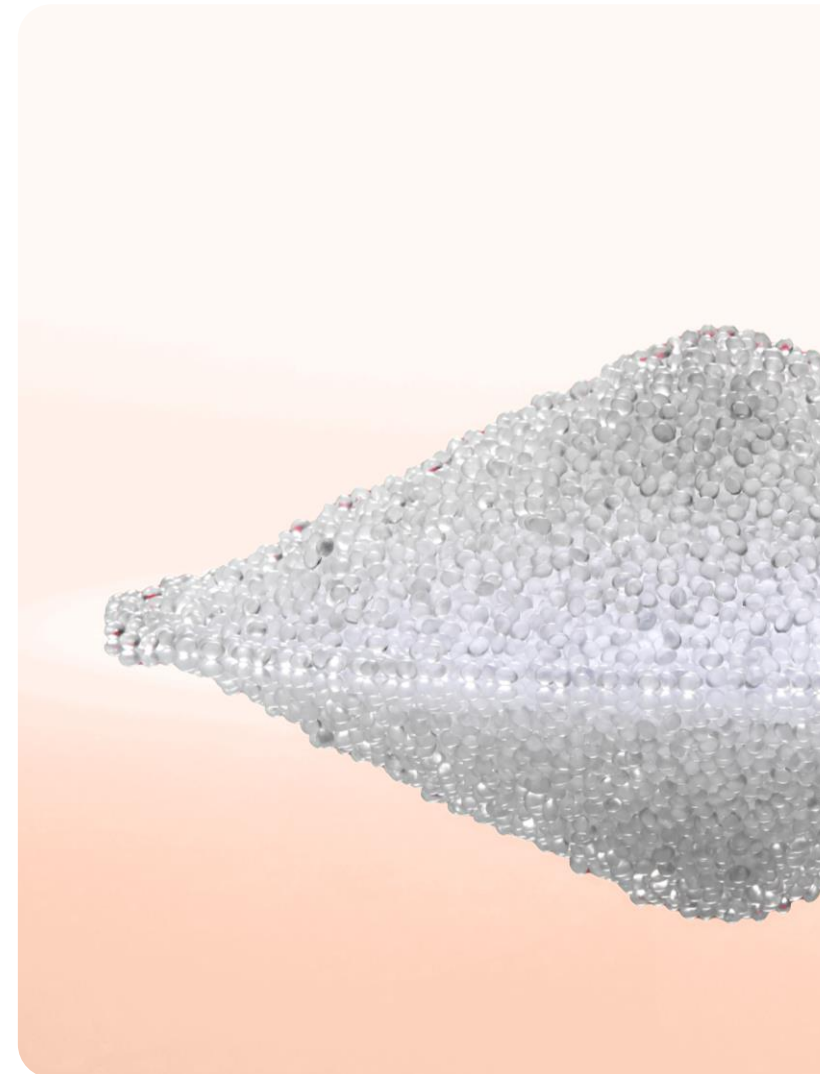
IATF 16949

**Puertollano and Monzón plants**

RecyClass

**Puertollano, Tarragona and Sines**

ISO 45001



# Environment

Repsol's purpose is to become a net-zero emissions company by 2050, and our 2024-2027 Strategic Plan enables us to continue successfully advancing our multi-energy commitment.

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, the Industrial Area is committed to reducing 1.6 million tons of CO<sub>2</sub> under the 2024-2027 Strategic Plan, which, combined with the reductions achieved through the 2024-2025 Strategic Plan, amounts to more than 2 million tons of CO<sub>2</sub>.

Regarding SCOPE 3 emissions, Repsol Materials, S.A. will contribute to the CO<sub>2</sub> emissions reduction at the plastics' end of life with our circularity projects, while we offer sustainable solutions for our clients: 100% recyclable polyolefins.

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 Materials, S.A. 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.



## Corporate Headquarters

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## Customer Care

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