

# Circular polyolefin solutions for mechanical recycling



# Circular solutions

## Proven at scale



Borouge International advances circularity through high-performance materials, responsible operations and integrated capabilities across the value chain. We offer the full circular portfolio from design to mechanical recycling and chemical recycling as well as bio-based offering.

Our established mechanical recycling platform, more than 30 years of heritage, helps customers integrate recycled content with the quality, consistency and application support needed to perform at scale and meet the evolving needs of resources independence.

➤ **Integrated capabilities across the circular value chain.**

From feedstock sourcing and recycling to polyolefin production and technical support, we help customers turn circular ambitions into commercial reality.

# European recycling capability – reliable supply

Our mechanical recycling footprint combines regional production, feedstock expertise and quality control to support consistent supply across Europe.



## Wildon, Austria

- 35+ years of experience
- Focus on high-quality recycled low-density polyethylene (rLDPE) Borcycle™ and Recleo™ solutions



## Niedergebra, Germany

- 30+ years of experience
- Modern compounding line for high-end rigid recyclate needs
- Focus on mixed polyolefin (rPO) and rigid polypropylene (rPP) Recleo™ solutions



## Elin Pelin, Bulgaria

- Built in 2019 with state-of-the-art equipment
- Focus on high end rigid polypropylene (rPP) Borcycle™ and Recleo™ solutions



## Certified traceability and verified claims

All our mechanical recycling plants hold RecyClass Recycling Process Certification, independently verifying waste origin and material traceability.



# One portfolio – the right solution for your application



## Recleo™

- Reliable recycled polyolefins for broad application needs
- PCR and PIR grades for flexible, rigid and technical applications

### Customer value

- Consistent quality, verified traceability and reliable supply

### Best fit

- Cost-effective recycled content where reliable performance matters



## Borcycle™ M

- Premium PCR performance for demanding applications
- Upgraded PCR, engineered with polymer and application expertise

### Customer value

- High purities, minimized contamination and gels, smoother processing for demanding end-use performance

### Best fit

- Choose when purity, odor and appearance are critical

➤ Our recycling experts work with customers to define performance, recycled-content, certification and processing requirements, then identify and validate the right solution.

# Our PCR recyclate product range for flexible applications

| Product group      | MFR (g/10 min)<br>190°C/2.16kg | Moisture<br>content (%) | Density<br>(g/cm <sup>3</sup> ) | Recycled<br>content % | Available colors        | Features                                                                          | Type of application                                      |
|--------------------|--------------------------------|-------------------------|---------------------------------|-----------------------|-------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------|
| Borcycle™ PE R0002 | 0.35                           | ≤ 0.1                   | 0.925                           | <b>100</b>            | Transparent/<br>natural | Very low gel LDPE 100 %<br>PCR ideal for high-end<br>film applications            | Hygiene, Pouches                                         |
| Borcycle™ PE U0013 | 2                              | ≤ 0.1                   | 0.918                           | <b>85</b>             | Transparent             | Low gel LLDPE 100%<br>PCR ideal for high-end<br>stretch film applications         | Stretch film                                             |
| Borcycle™ PE T1003 | 0.85                           | ≤ 0.1                   | 0.925                           | <b>100</b>            | Transparent             | Low gel LDPE 100%<br>PCR Ideal for printed<br>high-end blown film<br>applications | Collation shrink film                                    |
| Recleo™ PE S0003   | 0.50                           | ≤ 0.1                   | 0.925                           | <b>100</b>            | Transparent             | Low gel LDPE 100%<br>PCR ideal for<br>high-end blown film<br>applications         | Stretch hoods,<br>collation shrink film                  |
| Recleo™ PE T1005   | 0.85                           | ≤ 0.1                   | 0.925                           | <b>100</b>            | Transparent             | LDPE 100%<br>PCR for high-end blown<br>film applications                          | Hygiene, soil bags,<br>compounds                         |
| Recleo™ PE T2006   | 0.85                           | ≤ 0.1                   | 0.925                           | <b>100</b>            | Translucent             | LDPE 100%<br>PCR for blown<br>film applications                                   | Industrial packaging,<br>garbage bags                    |
| Recleo™ PE S3007   | 0.70                           | ≤ 0.1                   | 0.945                           | <b>100</b>            | Colored                 | Colored rLDPE for blown<br>film applications                                      | Garbage bags,<br>construction film,<br>agricultural film |
| Recleo™ PE S3008   | 0.70                           | ≤ 0.1                   | 0.945                           | <b>100</b>            | Colored                 | Colored rLDPE for blown<br>film applications                                      | Garbage bags,<br>construction film,<br>agricultural film |
| Recleo™ PE S4007   | 0.70                           | ≤ 0.1                   | 0.945                           | <b>98</b>             | Black                   | Black rLDPE ideal<br>for blown film<br>and pipe applications                      | Irrigation pipe                                          |
| Recleo™ PE S4008   | 0.70                           | ≤ 0.1                   | 0.945                           | <b>96</b>             | Black                   | Black rLDPE ideal for<br>pipe applicatons                                         | Irrigation pipe                                          |

Typical values. Data should not be used for specification work. Please consult us for more customized solutions.

Estimated cradle-to-gate CO<sub>2</sub>e footprint reductions

Compared to 100% virgin polyolefins in the same application, our PCR grades can reduce the carbon footprint by 80%-85% with transparent/translucent grades, by 70-80% with colored grades.

## Disclaimer

CO<sub>2</sub> reductions are based on Borealis internal product carbon footprint calculations and have not been critically reviewed in accordance with the relevant ISO standards. Calculations are based on the reference year 2023 and considering a cradle to gate system boundary. While all reasonable efforts have been taken to produce results that are representative of Borealis products, these data are bound to the assumptions (incl. data quality) under which the calculations have been made at the time of generation. This information is given to the best of Borealis' knowledge and does not constitute a comparative assessment performed in accordance with the requirements of the ISO14040/44 standards nor presented on a functional unit basis where it may be relevant. These information may not be used for comparative assertions and/ or public comparative claims, and the publication or dissemination of these data or parts of it is prohibited. Information herein is provided "as is" and without any representation or warranty, express or implied, including, without limitation, as to the accuracy, completeness, merchantability or fitness for a particular purpose. Borealis assumes no responsibility for any use of this data or any errors or consequences arising from its use

# Our PCR recyclate product range for rigid applications

## rPP recyclate product range

| Product group            | MFR<br>230°C/2.16kg | Tensile<br>modulus<br>(MPa) | Charpy<br>NIS 23°C<br>(kJ/m²) | Recycled<br>content %* | Available colors                                    | Features                                                     | Typical application                                          |
|--------------------------|---------------------|-----------------------------|-------------------------------|------------------------|-----------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
| Borcyclo™<br>AG1020MO-74 | 23                  | 1350                        | 4.8                           | 99                     | Dark Gray                                           | PCR rPP deodorized,<br>emission controlled                   | Caps with glossy, dark<br>color surface, OEM<br>compounds    |
| Borcyclo™<br>AG1020MO-90 | 23                  | 1350                        | 4.8                           | 99                     | White                                               | PCR rPP deodorized,<br>black spot and emission<br>controlled | Home care, cosmetic<br>care, caps, high end pails            |
| Borcyclo™<br>AH1040MO-90 | 40                  | 1350                        | 4.8                           | 98                     | White, Natural                                      | PCR rPP with reduced<br>odor, black spot<br>controlled       | Thin wall packaging,<br>pails                                |
| Recleo™<br>PP 3000       | 20/55               | 1150                        | 5                             | >95                    | Light/Natural,<br>Gray, black,<br>green, anthracite | PCR rPP with impact<br>performance                           | Non-food homeware,<br>buckets, pens, markers                 |
| Recleo™<br>PP 5000       | 12/20               | 1100-1200                   | 4- 4.5                        | >98                    | Warm gray,<br>Dark gray                             | PCR rPP                                                      | Buckets, garden,<br>industrial applications,<br>construction |
| Recleo™<br>PP 5100       | 12/20               | 1200                        | 4.5                           | >98                    | Light Gray                                          | PCR rPP with reduced<br>odor                                 | Non-food homeware,<br>stationary equipment                   |
| Recleo™<br>PP 6000       | 15                  | 1200                        | 5.5                           | >97                    | Gray, Black<br>Green, Anthracite                    | PCR rPP                                                      | Garden, thermoforming<br>applications                        |

## Mixed polyolefins (rPO) recyclate product range

| Product group      | MFR<br>230°C/2.16kg | Tensile<br>modulus<br>(MPa) | Charpy<br>NIS 23°C<br>(kJ/m²) | Recycled<br>content %* | Available colors                 | Features                                              | Typical application                               |
|--------------------|---------------------|-----------------------------|-------------------------------|------------------------|----------------------------------|-------------------------------------------------------|---------------------------------------------------|
| Recleo™<br>S D7000 | 9                   | 1000                        | 5.5                           | >95                    | Gray, Black<br>Green, Anthracite | PCR rPO with mixed<br>polyolefins, >50% PP<br>content | Buckets, garden,<br>construction parts            |
| Recleo™<br>S D8000 | 6                   | 820                         | 7                             | >98                    | Gray, Black<br>Green, Anthracite | PCR rPO with mixed<br>polyolefins                     | Pallets, boxes, bigger<br>injection molding parts |

\* The given value is the minimum PCR content of the Product Family. For detailed values, please refer to the RecyClass Certificate available on our website or contact us directly.

Typical values. Data should not be used for specification work. Please consult us for more customized solutions.

Estimated cradle-to-gate CO<sub>2</sub>e footprint reductions

Compared to 100% virgin polyolefins in the same application, our PCR grades can reduce the carbon footprint by 50%-65% with rPP/rPO PCR grades.

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# Our post-industrial recycled (PIR) product range for rigid applications

Our PIR portfolio uses polyolefin production streams to provide transparent and black solutions with melt-flow ranges tailored to specific applications.

| Product group         | MFR<br>230°C/2.16kg | Tensile<br>modulus<br>(MPa) | Charpy<br>NIS 23°C<br>(kJ/m²) | Recycled<br>content % | Available colors         | Features                                                           | Typical application                             |
|-----------------------|---------------------|-----------------------------|-------------------------------|-----------------------|--------------------------|--------------------------------------------------------------------|-------------------------------------------------|
| Recleo™<br>PP 9000-99 | 10/20/40            | 1500                        | 3                             | >98.5                 | Natural /<br>translucent | Natural / Translucent PIR<br>available in three melt<br>flow rates | Stationary equipment,<br>homeware, boxes        |
| Recleo™<br>PP 9000-95 | 2-55                | 1600                        | 7                             | >99                   | Black                    | Black PIR available in<br>different melt flow rates                | Construction, boxes,<br>crates, plastic pallets |



\* Our PIR definitions require at least an extrusion step in the upcycling processes.

Typical values. Data should not be used for specification work. Please consult us for more customized solutions.

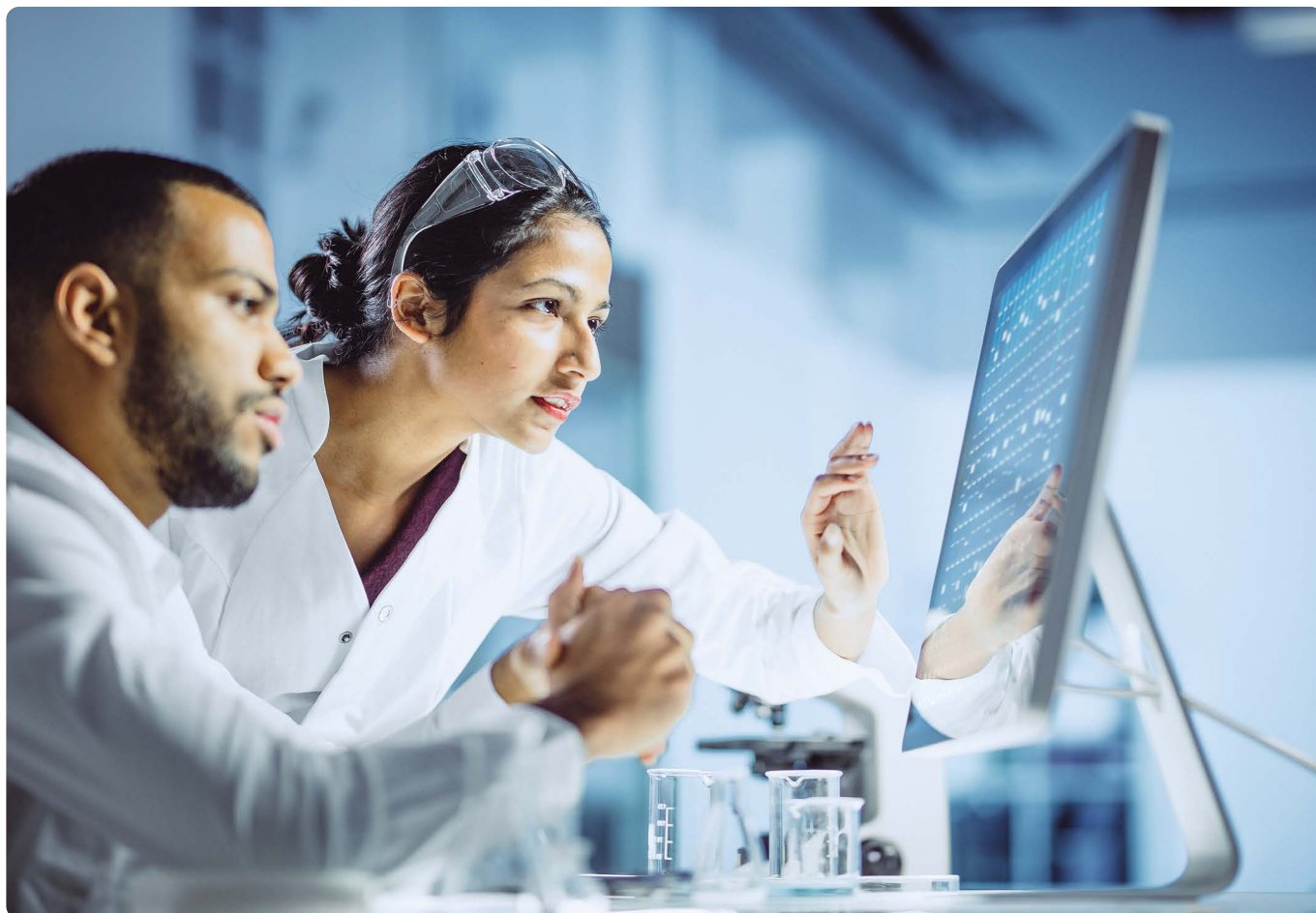
Estimated cradle-to-gate CO<sub>2</sub>e footprint reductions  
Compared to 100% virgin polyolefins in the same application, our PIR PP grades can reduce the carbon footprint by 70-80%.

**Disclaimer**

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# Consistency you can qualify – quality you can trust

Controlled throughout the process



Recycled materials come from diverse sources. That's why we apply rigorous controls, testing and batch management throughout the process, helping customers qualify materials with confidence and use them reliably in their applications.

- In-house laboratories support quality assurance throughout the production process, helping to deliver homogenized batches and reliable material quality
- Certified management systems, including ISO 9001, ISO 14001 and ISO 50001 across our recycling operations
- RecyClass certified
- ISCC PLUS certified at our Wildon site

Whether during material sourcing, receiving and post-sorting, after extrusion or before loading, our employees understand their responsibility. Through rigorous processes, expert know-how and attention to detail, they help turn naturally variable recycled feedstocks into reliable materials for customer applications.

➤ We do everything  
to meet this  
expectation,  
every single day.



➤ Because thinking circular today will provide us, our partners and society with a better tomorrow

**For more information**  
visit [borougeinternational.com](https://borougeinternational.com)

**About Borouge International**

Borouge Group International AG (Borouge International) is a global leader in polyolefins formed in 2026 through the combination of Borouge Plc, Borealis and NOVA Chemicals. Backed by long-term shareholders XRG, the international investment arm of ADNOC, and OMV, Borouge International brings together world-class assets, advantaged feedstock access and proprietary technology to deliver reliable high-performance polyolefin solutions across consumer products, infrastructure, energy, mobility and advanced products.

Borouge International combines a differentiated asset base, global reach and deep technical expertise to serve customers across key growth markets. The company is headquartered in Austria, with a regional headquarters in Abu Dhabi and corporate hubs in North America and Asia Pacific.

Learn more about the company: [borougeinternational.com](https://borougeinternational.com).

**Borouge International**

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