



RECYCLED COMPOUNDS

LOWER YOUR CARBON FOOTPRINT

PA6

PA66

PP

PET



NUREL'S RECYCLED TECHNICAL POLYMERS

OUR PRODUCT LINE OF RECYCLED COMPOUNDS REDUCES THE ENVIRONMENTAL

Recent investments in new compounding and recycling facilities enable NUREL to launch an **extensive product range** made from **post-consumer and post-industrial plastic waste**. Our **secured, locally sourced supply chain** ensures high quality while helping to **minimize environmental impact**.

Our **Reco-line** offers **sustainable, customized solutions** based on **PP, PA6, PA66, and PET waste**, tailored to specific end-use requirements. These products maintain **stable properties** throughout their **eco-friendly lifecycle**, without sacrificing **performance**. Additionally, the **recycled content** of our compounds is **certified**, ensuring traceability and transparency in our processes.

Our **mechanical regeneration system** uses **no chemical substances** and operates on **100% sustainable energy**, delivering **high-performance compounds** with a focus on **reducing CO₂ emissions and water consumption**.



POWERED BY ON-SITE SOLAR ENERGY

100% RENEWABLE ENERGY → 30% FROM SELF PRODUCTION



SGS has recently certified that 100% of the energy used in our production center comes from renewable resources, saving 10.991.760 kg of CO₂ to the atmosphere.



28,310
SOLAR
PANELS



16,560
MWH
PRODUCED



11.85 MWP
TOTAL
INSTALLED



10 MWH
ENERGY



11,000
TONNES
OF CO₂

SECURED RECLAIMED MATERIAL FEEDSTOCK

EXTERNAL POST-CONSUMER WASTE VALORIZATION (PCR)

We are developing a collaborative network focused on automotive waste management, efficiently transforming materials from **end-of-life vehicles** into **high-quality PP compounds**. This reduces reliance on **virgin plastics** and minimizes the industry's **environmental footprint**.

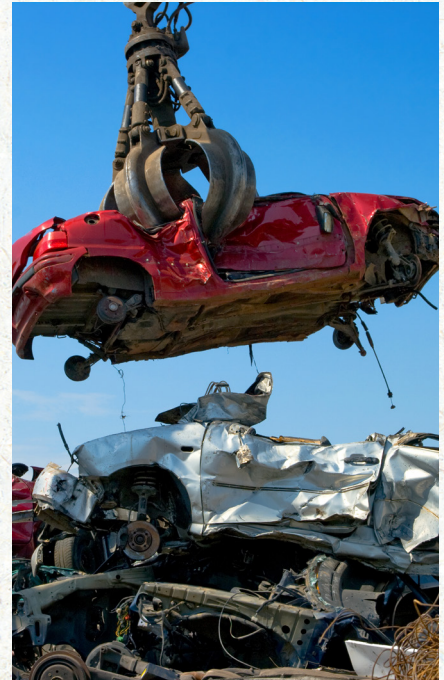


Furthermore, through our **UPtextile project**, we transform discarded nylon textiles into **engineering polyamides**, supporting a circular economy. We also process **recycled PET from packaging**, enhancing our sustainable materials portfolio.

INTERNAL POST-INDUSTRIAL SOURCES (PIR)

NUREL is an **integrated production site** that includes **polymerization plants, compounding units, recycling facilities, and a complete nylon fibre spinning plant**. We are committed to increasing productivity and reducing waste across all our processes, recycling all generated post-industrial waste.

Thanks to our state-of-the-art recycling units, we **reconvert nylon waste** into a consistent quality product range with a reduced carbon footprint, fully aligning with our Zero-Waste policy.



OUR RECYCLING MEANS

1 We carefully source **reclaimed materials** from both internal and external sources. These materials then go through a **rigorous identification and selection process** at our facilities to ensure they meet the required quality standards.

2 These materials are **remelted** in our recycling units through a **continuous mechanical recycling process**.

3 The **recovered polymers** are **stabilized and extruded** in our compounding units, incorporating **reinforcement additives, flame retardant agents, and colorants**, ensuring that the final product meets specific performance, safety, and aesthetic requirements.



POST-INDUSTRIAL AND
POST-CONSUMER



CONTINUOUS
MECHANICAL



RECYCLED
POLYMER



COMPOUNDING



CERTIFIED
RECYCLED CON-

RECYCLED CONTENT CERTIFICATIONS

CERTIFIED RECYCLED TECHNICAL COMPOUNDS



The new **mobility sector**, among others, demands **advanced technical compounds** with **challenging properties** and a **certified recycled origin and content**. Our **Reco-line** products provide the perfect solution to meet both these requirements.

Reco-line offers a **fully certified range** of **PP, PA, and PET compounds**, with recycled content certified from **30% to 100%**.

Our **recycled compounds** are available with a variety of **additive packages, reinforcements**, and in both **black and white** colour options.

CERTIFICATIONS

All **Reco-line** grades can be certified according to **EN15343, ISCC PLUS** or **GRS**.



EN15343

→ **EN15343 standard** verifies the **percentage of recycled plastic content** used in the manufacture of any product.



ISCC

International Sustainability
& Carbon Certification

→ **ISCC PLUS** is a **mass balance certification** that provides **assurance** about the **sustainable content** of a final product and ensures a robust traceability back to a **sustainable source**.



**Global Recycled
Standard**

→ **GRS (Global Recycled Standard)** verifies the **recycled material content** throughout the supply chain, covering **traceability, environmental principles, social responsibility, and labelling**.

EN15343

TRACEABILITY AND ASSESSMENT OF CONFORMITY AND RECYCLED CONTENT IN PLASTIC RECYCLING

This certification unifies the conformity of the **recycling process** and the certification of the **recycled content** of materials.

→ CERTIFICATION OF TRACEABILITY ON PLASTIC RECYCLING PROCESSES

This certification applies to recycling companies that process both **pre- and post-consumer plastic waste**. A **waste management license** is a mandatory requirement. The certification focuses on ensuring **traceability of plastic materials** throughout the entire supply chain and recycling process, while maintaining the **quality of recycled content** in the final product.

→ CERTIFICATION OF PRE-CONSUMER OR POST-CONSUMER RECYCLED PLASTIC CONTENT



EN15343

This certification is available for the entire supply chain, including **compounders, transformers**, and plastic product distributors. It certifies the **traceability of recycled material** from its origin and verifies the **percentage of recycled plastic** incorporated into the product.

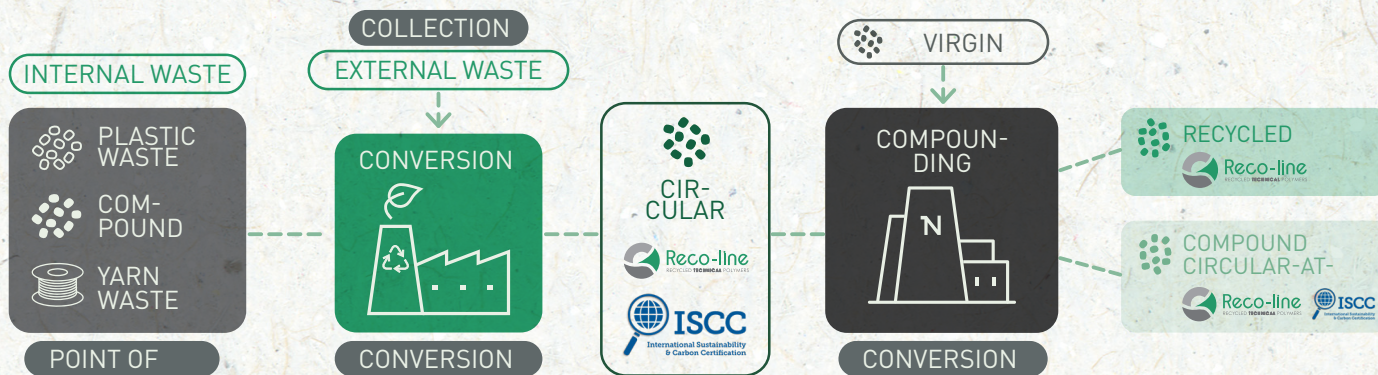


ISCC PLUS

MASS BALANCE APPROACH FOR CIRCULAR FEEDSTOCKS

NUREL's production site and processes are **ISCC Plus certified**, allowing for the processing and generation of circular materials using a **mass balance approach**. This certification ensures traceability and sustainable sourcing throughout the supply chain, covering social, environmental and economic aspects.

The mass balance methodology facilitates **the transition to the use of recycled raw materials alongside conventional** premises allowing the mixing of sustainable and non-sustainable materials within the same site. The volume of sustainable products should not exceed the volume of purchased sustainable raw materials, with a necessary **conversion factor** applied.



POST-CONSUMER RECYCLED PP COMPOUNDS



CERTIFIED POST-CONSUMER RECYCLED CONTENT



EN15343

Our **Olexene®-Reco** polypropylene (PP) compounds are derived from materials recovered from sources like automotive dismantling operations among other industrial waste. The recycled content in these compounds is fully traceable and can be certified in accordance with **EN15343** standards, ensuring transparency and sustainability throughout the production process.

TRANSITION TO A CIRCULAR ECONOMY

The transition from a linear to a circular economy is one of the greatest challenges we face today. The **European Union** has set a clear objective: to decouple economic growth from the consumption of natural resources, aiming to achieve **climate neutrality by 2050**.

In particular, the **European automotive market** currently lacks sufficient integration of circularity in vehicle design and production, which results in a heavy reliance on primary raw materials. The quality of vehicle end-of-life treatment (ELV) is not yet optimal, **leaving a significant unrealised potential for circularity in out-of-service vehicles**.

The key areas of focus include **circular design**, enhanced **recovery** at the end of a vehicle's life, and the incorporation of **25% post-consumer recycled plastic (PCR) by 2030**. Of this 25%, a quarter must come from end-of-life vehicles, advancing a circularity strategy within the sector.

AUTOMOTIVE TARGET 25% PCR BY 2030

It is crucial to **combat greenwashing with transparency**, ensuring that this transition to a circular economy is supported by the necessary verifications that guarantee **proper traceability throughout the value chain**. This builds credibility with our customers and helps to clearly explain the **environmental benefits of recycling**. The use of **certifications** plays a key role in demonstrating our genuine commitment to sustainability.

BY EMBRACING THESE STRATEGIES, WE CAN CONTRIBUTE TO A MORE CIRCULAR & SUSTAINABLE FUTURE FOR THE AUTOMOTIVE INDUSTRY



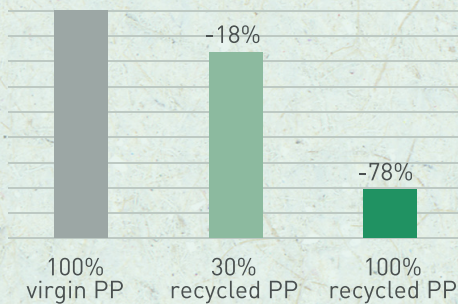
REDUCED ENVIRONMENTAL IMPACT



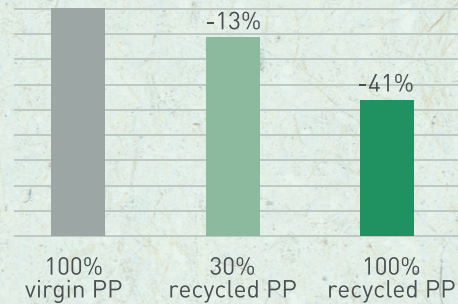
CARBON FOOTPRINT COMPARISON

By choosing **Olexene®-Reco** for your automotive parts, you can significantly reduce their environmental impact and carbon footprint. Olexene Reco utilises post-consumer recycled material, eliminating the need for virgin petroleum-based resources. Additionally, the mechanical recycling process is carried out in our facilities, which are powered entirely by **100% renewable energy**. This approach achieves **notable reductions in carbon emissions**, up to 78 % in 100% recycled products.

Olexene®-Reco 20% Mineral Filled



Olexene®-Reco 30% Glass Fiber Reinforced



* **SimaPro** calculation based on primary data

OUR PROCESS



① DISMANTLING & COLLECTION

NUREL partners with specialised companies to recover (PP) parts from end-of-life vehicles at dismantling facilities.



② SHREDDING & SORTING

Our partners handle the shredding and sorting of PP, ensuring a pure, contaminant-free material for recycling.



③ REPROCESSING & COMPOUNDING

NUREL manages the entire reprocessing and compounding process in-house, transforming the recycled PP into high-performance compounds with reinforcements or FR agents.



④ CERTIFICATION EN15343

The compounds are certified to ensure traceability, quality, and compliance with European recycling standards.



⑤ FINAL USE

The certified recycled PP is used in the production of new automotive parts and other products, supporting a circular economy.

RECYCLED PP COMPOUNDS



PHYSICAL PROPERTIES *	CONDITIONS	TEST METHOD	UNIT
Density	23 °C	ISO 1183	g/cm ³
MVR	23 °C, 2.16kg	ISO 1183	cm ³ /10min
Mould Shrinkage	longitudinal		%
	transversal		%

MECHANICAL PROPERTIES *			
Tensile modulus	23 °C, 1 mm/min	ISO 527-1/-2	MPa
Tensile strength	23 °C, 50 mm/min	ISO 527-1/-2	MPa
Elongation at break	23 °C, 50 mm/min	ISO 527-1/-2	%
Flexural modulus	23 °C, 2 mm/min	ISO 178	MPa
Flexural strength	23 °C, 2 mm/min	ISO 178	MPa
Charpy unnotched impact strength	23 °C	ISO 179/1eU	kJ/m ²
Charpy notched impact strength	23 °C	ISO 179/1eA	kJ/m ²

THERMAL PROPERTIES *			
Melting temperature (DSC)	10 °C/min	ISO 3146	°C
Heat Deflection Temperature (HDT)	1.8 MPa	ISO 75-1/-2	°C

RECYCLED CONTENT
BASE

RECYCLED PP	
MINERAL FILLED	
PPR10 T20 BL01 R30	PPCR10 T20 BL01 R30
1.05	1.05
9	12
1.1	1.1
1.0	1.0
2,700	1,900
35	22
> 10	> 15
2,600	1,850
43	28
5	20
35	70
163	163
70	70
30%	30%
HOMOPOLYMER	COPOLYMER

* Properties based on a compound with 30% recycled content as a reference. For information on other recycled content percentages, please contact

RECYCLED PP				
MINERAL FILLED			GLASS FIBER REINFORCED	
PPR10 C20 BL01 R30	PPR10 T40 BL01 R30	PPCR10 T40 BL01 R30	PPR10 G30 CA BL01 R30	
1.04	1.22	1.22	1.15	1.15
14	5	5	5	5
1.1	0.6	0.6	0.3	0.3
1.0	0.9	0.9	0.4	0.4
1,650	3,800	3,100	6,800	5,500
25	30	25	80	60
> 10	> 5	> 10	3	5
1,600	3,750	3,000	6,500	5,100
35	45	32	110	85
6	3	10	12	20
75	20	30	45	60
163	163	163	163	163
70	100	100	140	140
30%	30%	30%	30%	30%
HOMOPOLYMER	HOMOPOLYMER	COPOLYMER	HOMOPOLYMER	COPOLYMER

RECYCLED PA6 & PA66 COMPOUNDS



Recycling polyamide (PA) presents a significant challenge due to the limited availability of waste materials suitable for use in engineering plastics production. The scarcity of post-consumer PA waste makes it difficult to source high-quality recycled material.

However, thanks to **NUREL's vertical integration** in the production of nylon synthetic fibres, we have access to top-quality **pre-consumer material**, ideal for manufacturing high-performance PA compounds.

Additionally, we have initiated the **Up-Textile project**, which focuses on repurposing waste generated during the textile manufacturing process, further enhancing the value and sustainability of our recycled polyamide solutions.

ONE SINGLE SITE, ONE SUSTAINABLE PROCESS



A key advantage of these **recycled PA compounds** is their **low carbon footprint**, as the raw material used is waste, and the recycling process takes place in the same facility where the waste material is selected.

This site also handles the **mechanical recycling** of the polymer and operates using **100% renewable energy**.

Furthermore, the **compounding process**, where reinforcing agents and flame retardants are added, is conducted on-site, optimising efficiency and reducing the environmental impact

→ DECREASING ENVIRONMENTAL IMPACT:

REDUCING CO₂ EMISSIONS BY 90%

The production of **Recomyde®** generates **90% less CO₂ emissions than standard PA compounds**. Therefore, a production of 1 ton of **Recomyde** reduces emissions of an equivalent to*:



CO₂ produced by a gasoline powered car driving 15,760 km



CO₂ produced by 464,675 smartphones being charged



CO₂ absorbed by 18,615 m² of forest in one year



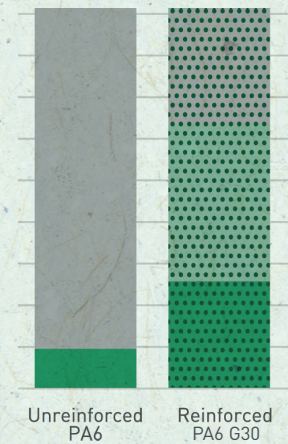
CO₂ produced by 1.3 tons of waste recycled instead of landfilled

*Calculations based on Greenhouse Gas Equivalencies Calculator | US EPA

90%

REDUCTION OF GLOBAL WARMING POTENTIAL (GWP)

CO₂ EMISSIONS



100% RECYCLED
30% RECYCLED

VIRGIN PA6
REINFORCED PA6 G30

*SimaPro calculation based on primary data

CERTIFIED RECYCLED CONTENT

All the recycled content in our **Recomyde® PA6 & PA66** recycled compounds is certified in accordance with the **EN15343** standard. Additionally, we offer certification options based on **ISCC Plus mass balance** or the **Global Recycled Standard (GRS)**, as the waste material primarily originates from the textile industry.

These certifications ensure **full traceability and transparency** throughout the recycling process, guaranteeing the high quality and sustainability of our compounds.

PRE- AND POST-CONSUMER RECYCLING

NUREL operates an integrated production site with recycling facilities, where post-industrial waste from our nylon spinning plant is **recycled into high-quality products**, minimizing our carbon footprint and supporting the **Zero Waste policy**.

We also recycle **discarded fabrics and nylon-based materials**, such as **fishing nets, films, ropes, and automotive parts**, converting them into valuable engineering polyamides. This initiative advances **circularity and sustainability** in the industry.

RECYCLED PA6 & PA66



PHYSICAL PROPERTIES	CONDITIONS	TEST METHOD	UNIT
Density	23 °C	ISO 1183	g/cm ³
Moisture absorption	23 °C/50% r.h.	ISO 62	%
Water absorption	23 °C/saturation	ISO 62	%
Mould Shrinkage	longitudinal		%
	transversal		%
Flamability	1,5 mm	UL-94	Class

MECHANICAL PROPERTIES	[dry/cond.]*		
Tensile modulus	23 °C, 1 mm/min	ISO 527-1/-2	MPa
Tensile strength	23 °C, 50 mm/min	ISO 527-1/-2	MPa
Elongation at break	23 °C, 50 mm/min	ISO 527-1/-2	%
Flexural modulus	23 °C, 2 mm/min	ISO 178	MPa
Flexural strength	23 °C, 2 mm/min	ISO 178	MPa
Charpy unnotched impact strength ⁽¹⁾	23 °C	ISO 179/1eU	kJ/m ²
Charpy notched impact strength	23 °C	ISO 179/1eA	kJ/m ²

THERMAL PROPERTIES			
Melting temperature (DSC)	10 °C/min	ISO 3146	°C
Heat Deflection Temperature (HDT)	1.8 MPa	ISO 75-1/-2	°C
	0.45 MPa	ISO 75-1/-2	°C

UNREINFORCED PA6			
B30 P4	B30 P4 BL01	B30 P4 MI	B30 P4 HI
1.13	1.13	1.10	1.08
3.00	3.00	2.30	2.30
9.50	9.50	8.50	8.20
0.90 - 1.20	0.90 - 1.20	0.90 - 1.10	0.90 - 1.10
1.00 - 1.30	1.00 - 1.30	0.90 - 1.20	0.90 - 1.20
-	-	HB	HB

3,200 / 1,700	3,200 / 1,700	2,700 / 1,300	2,200 / 1,000
75 / 50	75 / 50	60 / 30	45 / 30
>10 / >20	>10 / >20	>15 / >25	>20 / >50
2,500 / 1,200	2,500 / 1,200	2,300 / 1,000	2,000 / 900
105 / 65	105 / 65	80 / 40	60 / 30
150 / NB	150 / NB	NB / NB	NB / NB
4 / 20	4 / 20	11 / NB	55 / NB

222	222	222	222
65	65	55	55
180	180	150	130

(1) NB: No break. | * dry = dry as moulded / cond. = conditioned according to ISO 1110
All these grades are also available with UV & HS packages. All colours are available upon request.

UNREINFORCED PA66			REINFORCED PA6						REINFORCED PA66	
A30 P4	A30 P4 MI	A30 P4 HI	B30 P4 G15	B30 P4 G15 BL01	B30 P4 G30	B30 P4 G30 BL01	B30 P4 G50	B30 P4 G50 BL01	A30 P4 G15	A30 P4 G30
1.14	1.11	1.08	1.22	1.22	1.36	1.36	1.56	1.56	1.23	1.36
2.50	2.20	2.00	2.60	2.60	2.10	2.10	1.50	1.50	2.20	1.80
8.50	8.00	7.50	8.00	8.00	6.70	6.70	4.50	4.50	8.00	6.00
1.20	1.00	0.80	0.40 - 0.70	0.40 - 0.70	0.30 - 0.35	0.30 - 0.35	0.25 - 0.30	0.25 - 0.30	0.80	0.40
1.20	1.10	0.90	0.60 - 0.90	0.60 - 0.90	0.40 - 0.45	0.40 - 0.45	0.35 - 0.40	0.35 - 0.40	0.90	0.50
-	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB

3,400 / 1,300	2,700 / 1,100	2,300 / 900	6,000 / 3,500	6,000 / 3,500	9,500 / 6,000	9,500 / 6,000	14,000 / 10,000	14,000 / 10,000	5,500 / 3,500	9,500 / 7,000
70 / 40	70 / 40	60 / 30	120 / 70	120 / 70	150 / 95	150 / 95	170 / 120	170 / 120	110 / 70	150 / 100
>10 / >25	>15 / >25	>15 / >25	3.5 / 10.0	3.5 / 10.0	2.5 / 5.0	2.5 / 5.0	2.0 / 4.0	2.0 / 4.0	3.0 / 7.0	2.5 / 5.0
3,100 / 1,200	2,000 / 900	1,700 / 800	5,000 / 2,500	5,000 / 2,500	8,000 / 5,000	8,000 / 5,000	12,000 / 8,000	12,000 / 8,000	4,500 / 3,000	9,000 / 6,500
105 / 60	80 / 45	70 / 40	150 / 80	150 / 80	200 / 130	200 / 130	230 / 150	230 / 150	140 / 90	190 / 120
NB / NB	NB / NB	NB / NB	40 / 75	40 / 75	50 / 75	50 / 75	65 / 90	65 / 90	45 / 65	50 / 75
4 / 12	15 / 28	55 / NB	5 / 10	5 / 10	8 / 10	8 / 10	12 / 20	12 / 20	7 / 12	8 / 15

260	260	260	222	222	222	222	222	222	260	260
70	65	60	180	180	200	200	205	205	210	230
-	-	-	210	210	215	215	215	215	-	-

RECYCLED R-PET & PBT/R-PET



Proxylene-Reco R-PET reinforced with 30% glass fiber offers numerous advantages for injection-molded parts across various industries, particularly in the automotive sector.

This high-performance material combines the **environmental benefits** of recycling with **enhanced mechanical properties**, such as high strength, lightweight, chemical resistance and dimensional stability, making it an excellent **alternative to traditional materials** like virgin plastics or even metals.

NUREL offers **custom formulations** tailored to specific client needs, ensuring high performance and **reduced environmental impact**.



**PROXYLENE RECO G30
UP TO 47% CO₂ FOOTPRINT REDUCTION**

APPLICATIONS

In the **automotive sector**, Proxylene-Reco R-PET 30% glass fiber reinforced is commonly used for **engine covers, seat frames, dashboards**, and various **under-the-hood components**. It also finds applications in **electronics** for protective housings, **industrial machinery parts** like gear housings and pumps, and **durable consumer goods**.

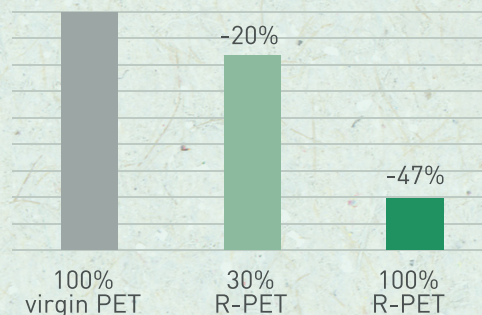
CERTIFIED SUSTAINABLE BENEFITS

Proxylene Reco is sourced from post-consumer PET packaging through **SAMCA Group synergies**, supporting circular economy efforts.

The recycled content of the product is **certified according to the EN15343 standard**, ensuring transparency and reliability in the use of recycled materials.

We provide **Product Carbon Footprint** for all grades (PCF).

Proxylene-Reco 30% Glass Fiber Reinforced



* **SimaPro** calculation based on Ecoinvent data

PHYSICAL PROPERTIES				CONDITIONS	TEST METHOD	UNIT	RECYCLED R-PET	RECYCLED PBT / R-PET
							A95R P2 G30 BL01	B55R P2 G30 BL01 RECO
Density		23 °C	ISO 1183		g/cm ³		1,56	1,56
Moisture absorption		23 °C/50% r.h.	ISO 62		%		0,2	0,2
Water absorption		23 °C/saturation	ISO 62		%		0,7	0,4
Flamability		1,5 mm	UL-94				HB	HB
PROCESSING CONDITIONS								
Melt Volume rate		275 °C/2,16 kg	ISO 1133		cm ³ /10 min		15	20
Melt temperature, injection moulding					°C		270-300	260-290
Mould temperature					°C		80-120	80-120
Moulding Shrinkage		longitudinal			%		0,3	0,4
		transversal					0,8	0,9
MECHANICAL PROPERTIES				(dry/cond.)*				
Tensile modulus		23 °C, 1 mm/min	ISO 527-1-2		MPa		10.500	9.500
Tensile strength		23 °C, 50 mm/min	ISO 527-1-2		MPa		155	140
Elongation at break		23 °C, 50 mm/min	ISO 527-1-2		%		3	2
Flexural modulus		23 °C, 2 mm/min	ISO 178		MPa		8.500	9.000
Flexural strength		23 °C, 2 mm/min	ISO 178		MPa		210	200
Charpy unnotched impact strength ⁽¹⁾		23°C	ISO 179/1eU		kJ/m ²		60	50
Charpy notched impact strength		23°C	ISO 179/1eA		kJ/m ²		10	9
THERMAL PROPERTIES								
Melting temperature (DSC)		10 °C/min	ISO 3146		°C		252	223
Heat Deflection Temperature (HDT)		1.8 MPa	ISO 75-1/-2		°C		220	210
		0.45 MPa	ISO 75-1/-2		°C		240	220
Thermal coefficient of linear expansion		23-80°C long.	ISO 11359-1/-2		10 ⁻⁴ /K		0,10	0,25
ELECTRICAL PROPERTIES								
Dielectric constant		1MHz	IEC 60250				3,8	3,8
Dissipation factor		1 MHz	IEC 60250				170	170
Volume resistivity			IEC 60093		Ω.m		>1013	>1013
Surface resistivity			IEC 60093		Ω		1013	1013
Comparative tracking index			IEC 60112				275	325



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