



Cables

Polyethylene / EVA / EBA / Polypropylene



Repsol. A global multi-energy company

 **Over 8 decades of experience** in the world of energy

One of the largest energy companies worldwide and one of the biggest private oil & gas companies.

Repsol is committed to our customers' global strategy putting our entire organization at their disposal to achieve a common goal: to create long-term relationships which enable us to rise to the common challenges our business presents.

 **Over 90 countries** where we market our products

Repsol has a diverse workforce of over 25,000 employees, marketing products in over 90 countries and reaching 10 million customers. Repsol's highly integrated Chemical Division focuses its strategy on the continuous generation of value through differentiated products and services.

Repsol Campus, Corporate Headquarters in Madrid

LEED® Platinum certificate, awarded by the prestigious U.S. Green Building Council (USGBC), for new buildings construction



Chemicals



Added value

Repsol's Chemicals Division, with a high degree of integration, focuses its strategy in the constant generation of value through differentiated products and services.



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

Base petrochemicals: ethylene, propylene, butadiene and benzene.

Intermediate products: styrene, propylene oxide, polyether polyols, and propylene glycols.

Polyolefins: 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.



Over 100 scientists and researchers working for you

Including qualified personnel specialized on Product Stewardship.

Repsol's commitment to R&D is an evidence of the company's aim to attain business excellence to meet future horizons.

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.

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 are therefore apt for the cable industry.

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 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.



Committed
to Net Zero
Emissions

Committed to cable innovation

Designing the future of cable technology



At Repsol, we believe in **constant innovation and product differentiation** to offer our clients always the best solutions, with more and more leading cable manufacturers trusting this approach.

Following our past developments, we are currently developing an **enhanced range of products for cable jacketing**, widening the solutions for natural and black-compounded jacketing applications, both **in energy and telecommunication cables**.

We are the **first company in our sector to set the net-zero emissions goal by 2050**. We believe in the **circular economy to drive the development of new innovative materials with recycled content**.

Our **circular polyolefins**, from chemically recycled plastic waste not suitable for mechanical recycling, are **ISCC PLUS certified and offer the same properties and quality as a virgin material** to deliver **excellent engineering performance**.



Cables



Over 33% expected increase
in energy consumption by 2030

Chemicals, and specialty plastics, are the key element to the development of modern and advanced cables to meet the increasingly higher requirements in electrical infrastructures.



Over 30 years of experience
in technical services and development

Our Repsol Technology Lab is the hub of our innovation and development. This is where our products come to life and are meticulously perfected in our quest for **innovative solutions to meet our customers' needs**. Our mission is to develop cutting-edge products and offer **high-quality solutions** to improve your business.

Offering solutions in:

LDPE

EVA

PP

HDPE

EBA





Over 40 grades for cables

Power and communication cables

Power cables

Insulation

Developed specifically for crosslinking process:

Low voltage: wide LDPE product range stabilized and additive free for use with both peroxide and silane crosslinking processes.

Medium voltage: clean LDPE product range for direct peroxide injection.

Semiconductive shields

Wide EVA and EBA range as base resins to manufacture semiconductive compounds.

Jacketing

LDPE, MDPE and HDPE grades which contain additivation for excellent stress cracking performance.

EVA, EBA and PP base resins intended for flame retardant (HFFR) compounds.

Communication cables

Insulation

LDPE and HDPE products stabilized with good processability.

Jacketing

LDPE, MDPE and HDPE grades which contain additivation for excellent stress cracking performance.

EVA, EBA and PP base resins intended for flame retardant (HFFR) compounds.

Insulation grades for medium voltage power cables



Grade	MFI	Density	Elongation at break	Tensile strength at break	Dielectric constant	Dissipation factor	Polymer type / Crosslinking / Description
	ISO 1133 g/10' 190°C; 2.16 kg	ISO 1183 Kg/m ³	ISO 527-2 %	ISO 527-2 MPa	ASTM D 1531 1MHz	ASTM D 1531 1MHz	
PE004	2.4	920	500	14	2.3	0.0003	LDPE / Direct peroxide injection XLPE / Clean XLPE insulation. Additive free.
CP104	2.4	920	500	14	2.3	0.0003	LDPE / Direct peroxide injection XLPE / Clean and stabilized XLPE insulation.
CP004TR	2.4	920	500	14	2.3	0.0003	LDPE / Direct peroxide injection XLPE / Water tree retardant XLPE insulation.
PE004S	2.4	920	500	14	2.3	0.0003	LDPE / Direct peroxide injection XLPE / Extra clean XLPE insulation. Additive free.

XLPE: crosslinkable polyethylene



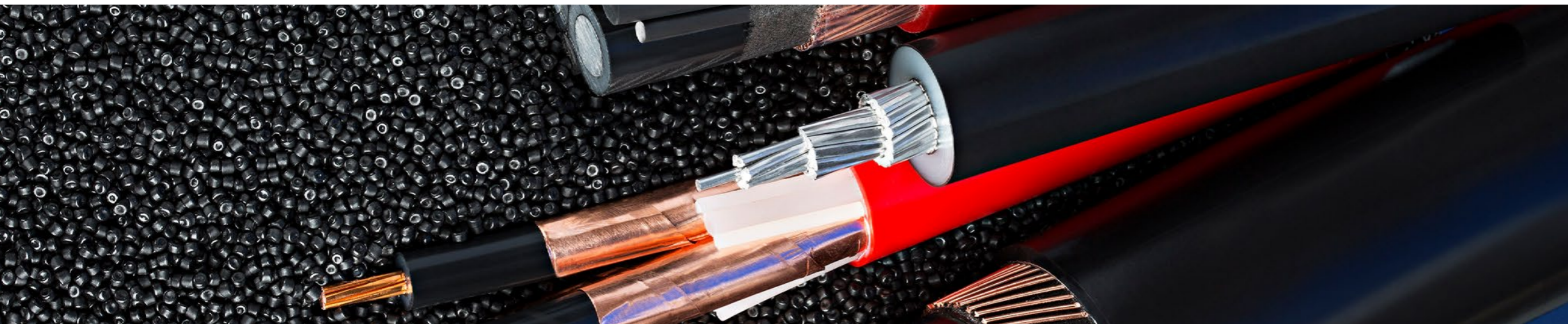
Repsol supplies insulation grades for low and medium voltage power cables. These have been developed specifically for crosslinking process

Insulation grades for low voltage power cables



	Grade	MFI	Density	Elongation at break	Tensile strength at break	Dielectric constant	Dissipation factor	Polymer type / Crosslinking / Description
		ISO 1133 g/10' 190°C; 2.16 kg	ISO 1183 Kg/m ³	ISO 527-2 %	ISO 527-2 MPa	ASTM D 1531 1MHz	ASTM D 1531 1MHz	
	PE003	2.4	920	500	14	2.3	0.0003	LDPE / Peroxide XLPE / Insulation. Additive free.
	2202C	0.3	921	600	16	2.3	0.0003	LDPE / Silane XLPE / Insulation for monosil process. Additive free.
	2303C	0.35	923	400	18	2.3	0.0003	LDPE / Silane XLPE / Insulation for monosil process. Stabilized with antioxidant and metal deactivator.
New	Resistex 1835C	3.5	918	700	35	2.2	0.0004	mLDPE / Silane XLPE / Insulation for monosil process.
New	Repsol GridEffect PSIL230	0.9	923	276	16	2.25	0.0003	LDPE / Silane XLPE / Ambient temperature moisture-curable insulation compound for LV power cables. Sioplas process.
New	Repsol GridEffect PSIL23X	0.7	923	>300	>20	2.25	0.0003	LDPE / Silane XLPE / More reactive / Ambient temperature moisture-curable insulation compound for LV power cables. Sioplas process.
New	Repsol GridEffect CAT230	6	923	-	-	-	-	Natural catalyst masterbatch for ambient temperature moisture-curable insulation system for LV power cables.
New	Repsol GridEffect CAT23X	6	923	-	-	-	-	Natural catalyst masterbatch for ambient temperature moisture-curable insulation system for LV power cables.

LV: low voltage



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Insulation grades for telecommunication cables



Grade	MFI	Density	Elongation at break	Tensile strength at break	Dielectric constant	Dissipation factor	Polymer type / Description
	ISO 1133 g/10' 190°C; 2.16 kg	ISO 1183 Kg/m ³	ISO 527-2 %	ISO 527-2 MPa	ASTM D 1531 1MHz	ASTM D 1531 1MHz	
CP121	0.35	921	600	16	2.3	0.0003	LDPE solid insulation. General purpose insulation. It contains a metal deactivator.
CAB4910	0.9	949	700	20	2.3	0.0004	HDPE stabilized with a metal deactivator. Solid insulation cables.
New PP020G9E	1 (230°C)	905	-	34	-	-	PP-H. Insulation compounds based on PP.
New PR264G1F	8,5 (230°C)	905	-	-	-	-	PP-H. Insulation compounds based on PP.



LDPE and HDPE grades for the communication industry are specially additivated to assure an excellent quality of the cable

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Jacketing grades for power and telecommunication cables



Grade	MFI	Density	Elongation at break	Tensile strength at break	Dielectric constant	Dissipation factor	Polymer type / Application / Description
	ISO 1133 g/10' 190°C; 2.16 kg	ISO 1183 Kg/m ³	ISO 527-2 %	ISO 527-2 MPa	ASTM D 1531 1MHz	ASTM D 1531 1MHz	
2202CN	0.25	934	600	14	2.6	0.005	Black LDPE / Telecommunication jacketing / Excellent processability.
3802N	1 (5 kg)	950	900	28	2.5	0.0002	Black HDPE / Jacketing for energy cables / High stiffness.
C220N	0.6	955	800	27	2.7	0.006	Black HDPE / Jacketing for fiber and telecommunication cables / Low shrinkage.
5605N	0.45	958	600	> 30	2.5	0.005	Black HDPE / Jacketing for energy and telecommunication cables.
C240UV	21 (21.6 kg)	939	800	28	2.3	0.00013	MDPE / Jacketing for energy and telecommunication cables / Colorable and UV protection.
3802	0.2	938	900	28	2.5	0,0002	HDPE / Jacketing for energy cables / High stiffness.
CAB4805UV	0.45	948	650	>30	-	-	HDPE / Jacketing for energy cables / Low shrinkage.
MF3810N	1	938	>600	>30	-	-	Black mLDPE / Jacketing for power and telecommunication cables.

New

New



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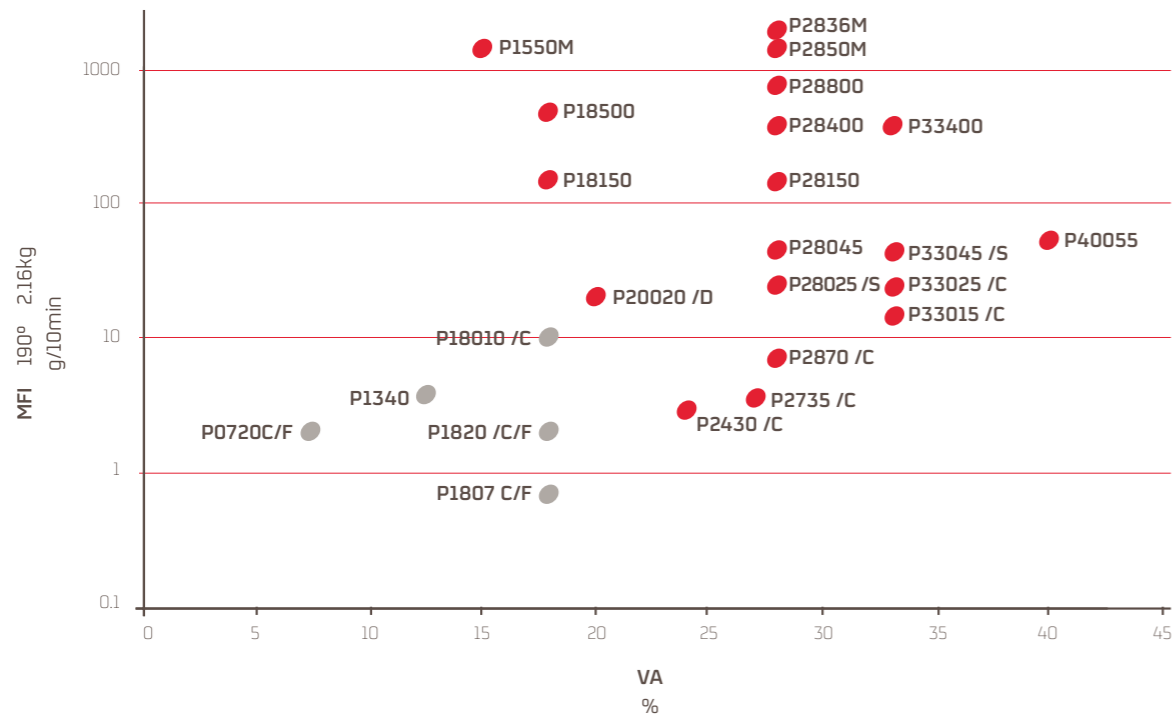
Base resins for cable compounds



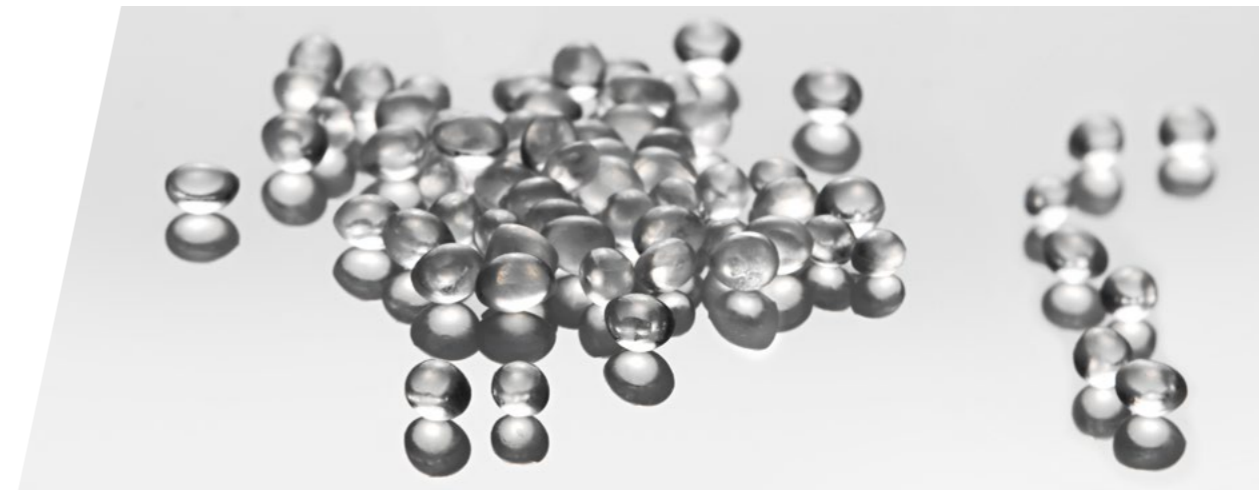
Grade	MFI ISO 1133 g/10' 190°C; 2.16 kg	VA content Internal method %	Density ISO 1183 kg/m ³	Elongation at break ISO 527-2 %	Tensile strength at break ISO 527-2 MPa	Polymer type / Application / Description
P1807C	0.7	18	941	850	32	EVA / HFFR compounds.
P1820C	2	18	937	750	17	EVA / HFFR compounds.
P2430C	3	24	944	740	25	EVA / HFFR compounds.
P2735C	3.5	27	953	555	23	EVA / HFFR compounds.
P2870C	7	28	950	760	22	EVA / HFFR compounds.
P33015C	15	33	956	800	14	EVA / HFFR compounds / Semiconductive compounds.
P33025C	25	33	956	825	6	EVA / HFFR compounds / Semiconductive compounds.
P40055	55	40	969	936	7	EVA / HFFR compounds / Semiconductive compounds.

* For further information regarding this grade, please contact Repsol's Technical Service & Development at atd_poliolefinas@repsol.com

These base resins are suitable for the fabrication of halogen-free flame-retardant (HFFR), semiconductive or other cable compounds



Also available these other qualities: /C - Cable /F - Film /S - Solar /D - Coating ● Low content ● High content



Base resins for cable compounds

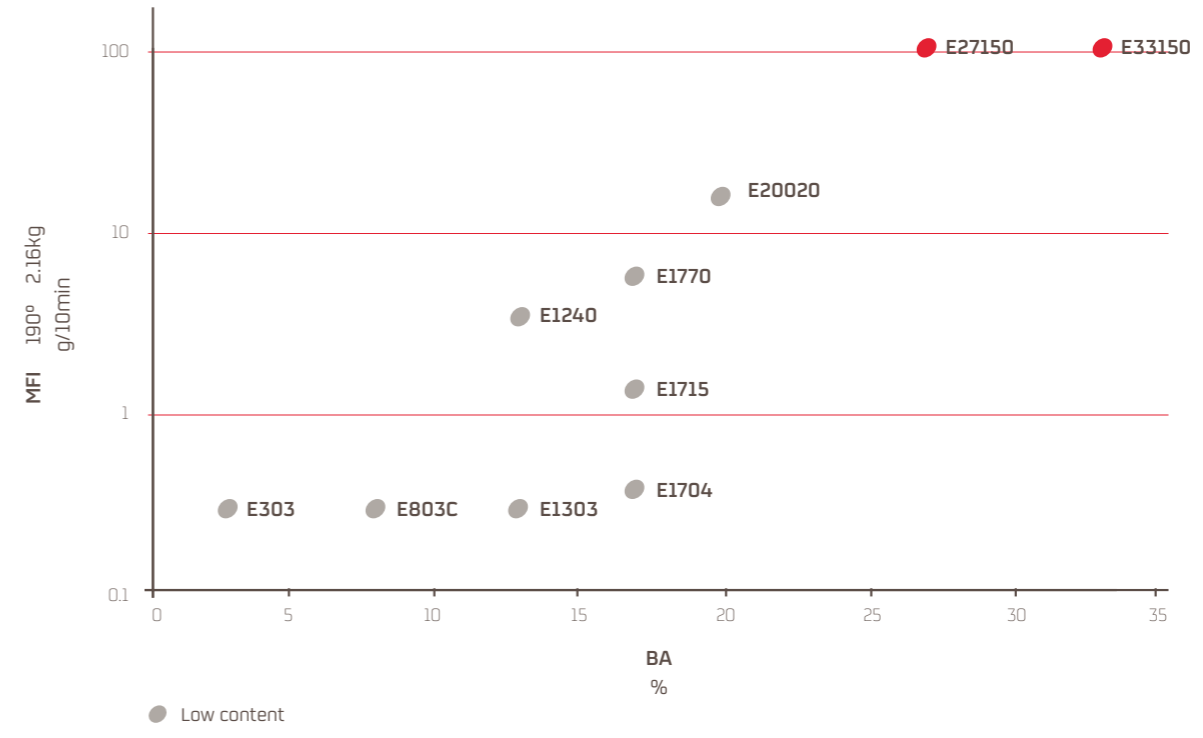


Grade	MFI ISO 1133 g/10' 190°C; 2.16 kg	BA content Internal method %	Density ISO 1183 kg/m ³	Elongation at break ISO 527-2 %	Tensile strength at break ISO 527-2 MPa	Polymer type / Application / Description
E803C	0.3	8	928	540	22	EBA / HFFR compounds.
E1240	4	12	925	700	14	EBA / HFFR compounds.
E1303	0.3	13	925	585	20	EBA / HFFR compounds.
E1704	0.4	17	925	640	19	EBA / HFFR compounds.
E1715	1.5	17	926	833	17	EBA / HFFR compounds / Semiconductive compounds.
E1770	7	17	924	800	12	EBA / Semiconductive compounds.
E17010	10	17	925	830	12	EBA / Semiconductive compounds.
E2735C	3.5	27	927	770	8	EBA / HFFR compounds.
E2770	7	27	926	600	7.5	EBA / HFFR compounds.
E33040	40	33	925	700	3.4	EBA / HFFR compounds.

New
New
New
New

* For further information regarding this grade, please contact Repsol's Technical Service & Development atd_poliiolefinas@repsol.com

These base resins are suitable for the fabrication of halogen-free flame-retardant (HFFR), semiconductive or other cable compounds

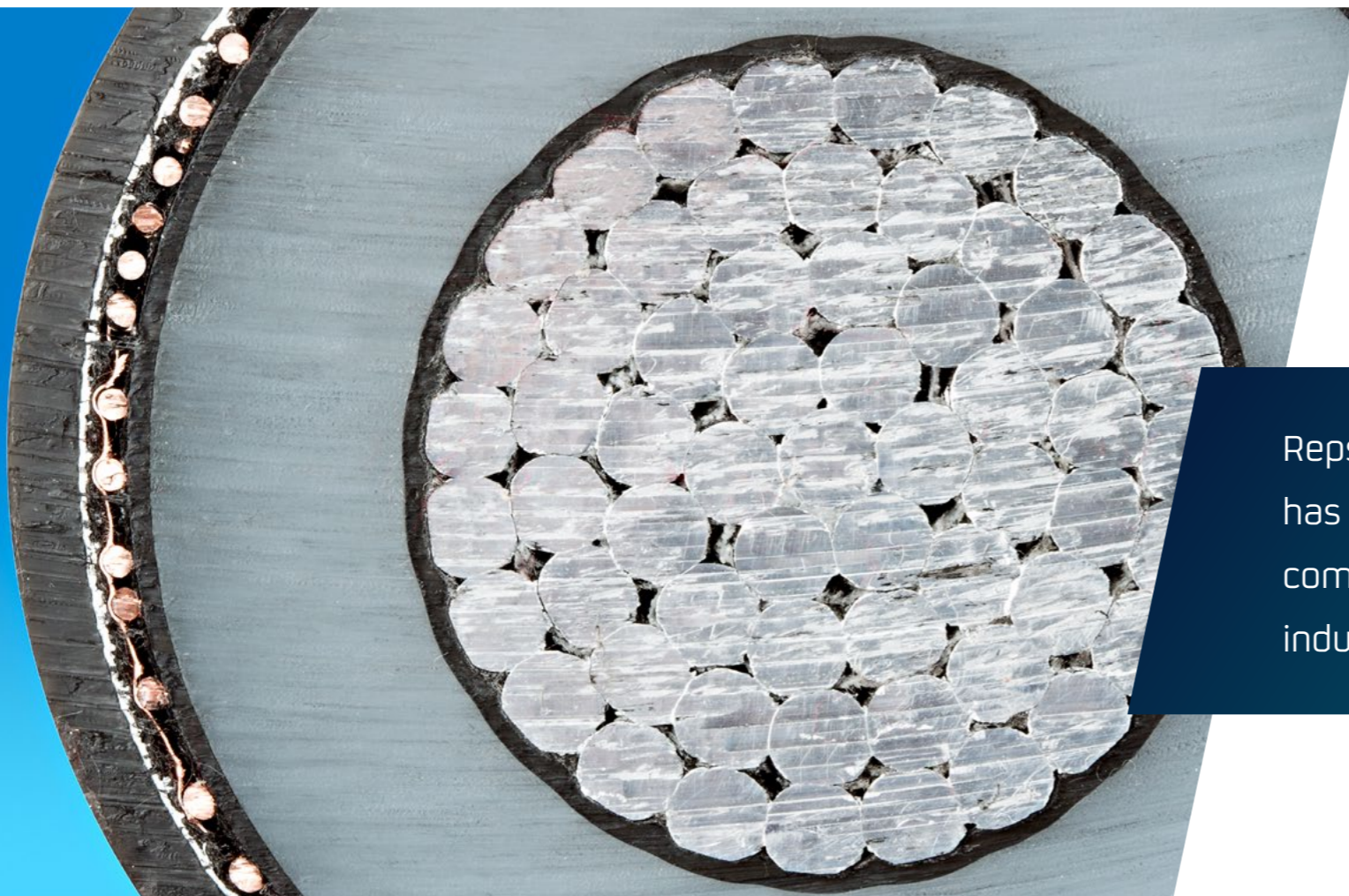


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Base resins for cable compounds: PP block Copolymer



Grade	MFI	BA content	Density	Elongation at break	Tensile strength at break	Polymer type / Application / Description
	ISO 1133 g/10' 190°C; 2.16 kg	Internal method %	ISO 1183 kg/m ³	ISO 527-2 %	ISO 527-2 MPa	
PB130 G1M	1.3	-	905	600	14	PP Block Copolymer / HFFR compounds.
PB140 G2M	3.5	-	905	600	18	PP Block Copolymer / HFFR compounds.



Repsol offers a comprehensive range of products which has been designed according to the standards of the communication cable, optic fiber, and power cables industry requirements



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

Safety is our priority

Petrochemical complexes and logistics centers all have ISO 45001.

We are food safety leaders. All our facilities are FSSC 22000 certified in recognition of our food safety risk management processes throughout the supply chain.

Technical Data Sheets and MSDS are available on: www.repsol.com

Petrochemical plants, plants and logistics

ISO 45001

All industrial complex

FSSC 22000

Puertollano, Tarragona, and Monzón plants

IATF 16949

Puertollano and Monzón plants

UNE-EN 15343

A global company that seeks the welfare of people and is a step ahead in building a better future through the development of smart energy

We offer sustainable solutions for our clients:

100% recyclable polyolefins



Quality

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 that use recycled plastic waste as raw material, and this certification is an example of our commitment to promote the Circular Economy of our materials.

All petrochemical plants

ISO 9001 / ISCC Plus

Environment

We have set up and deployed an ambitious CO₂ 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 CO₂ 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.

Puertollano, Tarragona and Sines

ISO 50001 / ISO 14001 / ISO 14064

Chemicals Customer Care

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Results Orientation

Collaboration

Inspiring Leadership

Accountability

Intrapreneurship