

# Film

Repsol Alcludia / Repsol PE Ultraclean® / Repsol Resistex®  
Repsol Primeva® / Repsol Ebantix® / Repsol Isplen



**REPSOL**



Trusting  
differentiation  
to make you  
unique

#### **Repsol Alcludia**

- / PE grades for high performance shrink film with excellent optical properties, increased rigidity and high processability.
- / Easy-tear grade for the hygiene segment.
- / Grades optimized for extrusion coating systems.

#### **Repsol PE Ultraclean<sup>®</sup>**

- / Range of LDPE products with very low gel content.
- / Analysis in continuous compliance with the strictest standards of quality.

what we add

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## GRADES VALUE TRUST

### **Repsol Resistex<sup>®</sup>**

- / mLLDPE grades with high transparency and gloss: sharper view in packaging of products.
- / Low seal initiation temperature: saving energy and time.
- / High tear resistance: higher security and performance of containers.

### **Repsol Primeva<sup>®</sup> and Repsol Ebantix<sup>®</sup>**

- / Wide range of EVA/EBA copolymers for film and stretch sleeves, agricultural film and extrusion coating.
- / Excellent optical and mechanical properties with good adhesion to different substrates (PE, PET, etc.).
- / Combinable in multilayer films, extrusion.

### **Repsol Isplen**

- / Extensive range of PP for cast film, blow molding and BOPP film: rigidity, cold impact resistance, stretchability and low sealing temperature.
- / Specialties: peelable, matte-look, high-quality film grades for co extrusion.
- / Grades suitable for metallisation.

# Repsol

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.

## Chemicals

Over **95** countries  
where we market our products

### 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**.

Over **1,500** references

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.

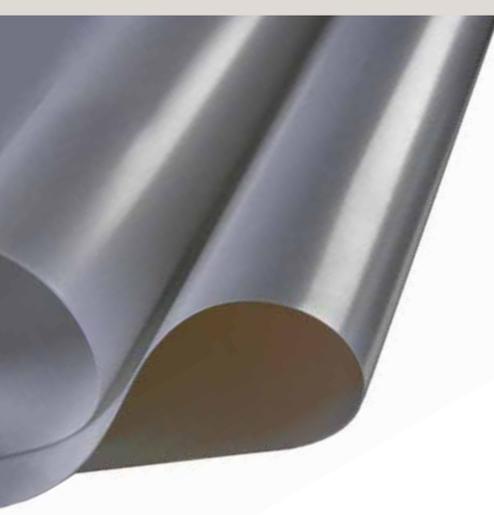


Over **100** scientists and researchers  
working for you

Including qualified personnel specialised 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.

Repsol Alcludia / Repsol PE Ultraclean<sup>®</sup> / Repsol Resistex<sup>®</sup>  
Repsol Primeva<sup>®</sup> / Repsol Ebantix<sup>®</sup> / Repsol Isplen



## Understanding your needs

At Repsol we are committed with the development of new products for our clients. We are in constant search of **innovative solutions to meet all your needs**. Our goal is to develop cutting-edge products to offer **reliable and quality solutions** to enhance your business. Due to this vision Repsol displays one of the widest ranges of film in the market.

Over **40** years of experience  
in the market

During our 43 years, we have developed an integrated chemical business. This way at Repsol we control all **key factors of the value chain**: research, development, manufacturing and distribution.

Over **75** grades  
for film

Our versatility allows us to produce one of the most extensive ranges of copolymers in the market for a wide range of industrial sectors like:



Agriculture



Automotive



Well-being &  
consumer products



Building &  
Infraestructure



Packaging



Healthcare



Household





## To innovate is to add value

### Variety

**Wide range of polyolefin grades** for film: LDPE, HDPE, mLLDPE, EVA, EBA and PP.

**Multiple applications** of film in food packaging, industry and agriculture.

### Properties

**Excellent optical and mechanical qualities.**

High processability.

### Service

**Solutions tailored** to each customer.

**Additives** designed to meet the specific needs of each application.

### Safety

Food safety is our priority. We anticipate the most stringent regulations and requirements. Our Tarragona industrial complex is the **1<sup>st</sup> Centre for polyolefins production with the FSSC 22000 certification.**

Our customers are free to use our **food safety assessment** service: regulations, legislation, certifications, migration tests, REACH.

### Commitment

Repsol offers you its full capacity for **innovation for the continual improvement** of its products.

**Strict compliance with the regulations** and requirements of each application.



# Repsol Alcludia

Blown film. LDPE

	Grade	MFI g/10 min 190°C, 2.16kg ISO 1133	Density kg/m <sup>3</sup> ISO 1183	Process	Additives	
					Thermal stabiliser	Antiblock (ppm)
	2202F	0.25	921	Tubular		
	2303F	0.30	922	Tubular		
	2203F	0.30	922	Autoclave		
	PE033	0.30	921	Autoclave	●	
	PE034	0.30	922	Autoclave	●	3000
	2107F	0.70	921	Autoclave		
	2107FG	0.70	921	Autoclave		800
	2308F	0.75	923	Tubular		
New	2308FGA	0.75	923	Tubular		800
	PE015	1.0	921	Autoclave		
	2212FA	1.2	922	Autoclave	●	850
	2212FG	1.2	922	Autoclave	●	850
	PE046	2.0	921	Autoclave	●	1125
	2221F	2.1	922	Autoclave	●	
	2221FG	2.1	922	Autoclave	●	850
	2321FS	2.1	923	Autoclave	●	1200
	PE003	2.3	920	Autoclave		
	2335FG	3.5	923	Autoclave	●	900
	3235FGA	3.5	932	Autoclave	●	400
	PE063	4.0	920	Autoclave	●	1200

*For the hygiene segment, there is an easy-tear grade, with optimized additivation*

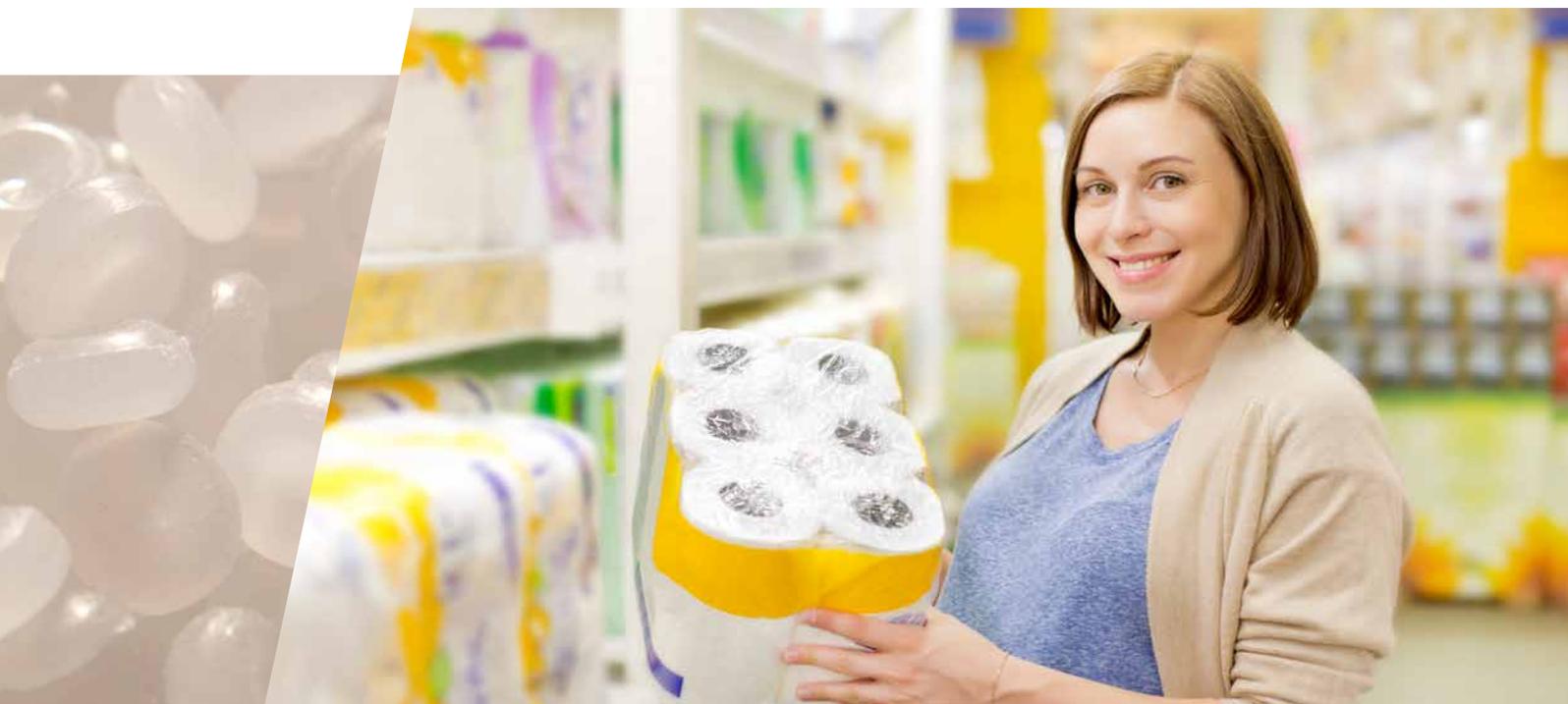


## Application

Slip (ppm)

Antistatic

		Shrink film, protection industrial film
		Shrink film, protection industrial film
		Shrink film, protection industrial film
		Shrink film, protection industrial film
		Shrink film, protection industrial film
		Packing film, shrink film, medium duty bags
500		Packing film, shrink film, medium duty bags
		Packing film, lamination, food packaging, shrink film, medium duty bags
500		Packing film, lamination, food packaging, shrink film, medium duty bags
		Packing film, shrink film, medium duty bags
		Packing film, shrink film, medium duty bags
450		Packing film, shrink film, medium duty bags
550		Packing and packaging, shrink film
		Packing and packaging, internal layer in coextrusion, shrink film
500		Packing and packaging, external layer in coextrusion, shrink film, bubble film
500	●	High brightness film, coextrusion, antistatic film
		Packing and packaging, hot melt adhesive, shrink film, bubble film
700		Thin film bags, automatic packaging, textile film
650		Thin film bags, high rigidity and easy-tear film, applications hygiéniques
580		Thin film bags, automatic packaging, textile film

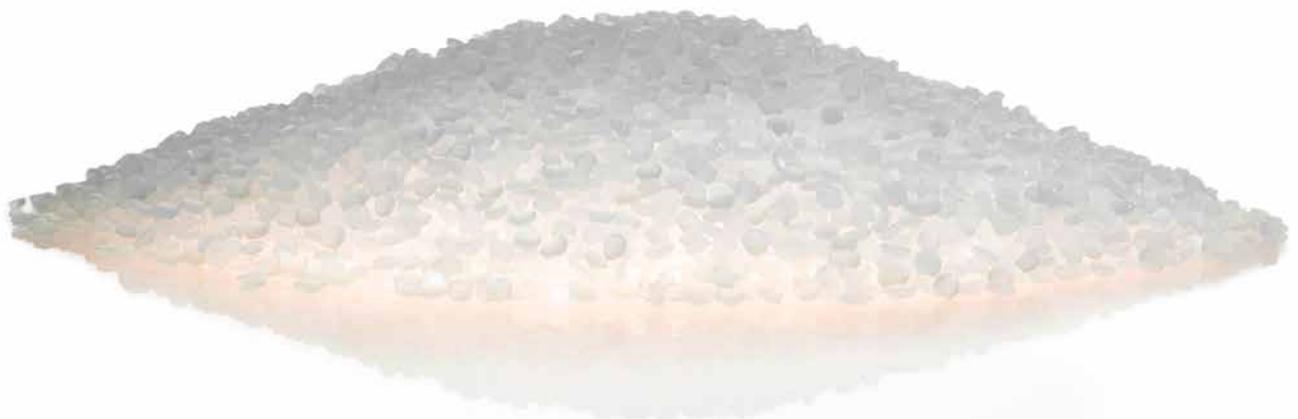
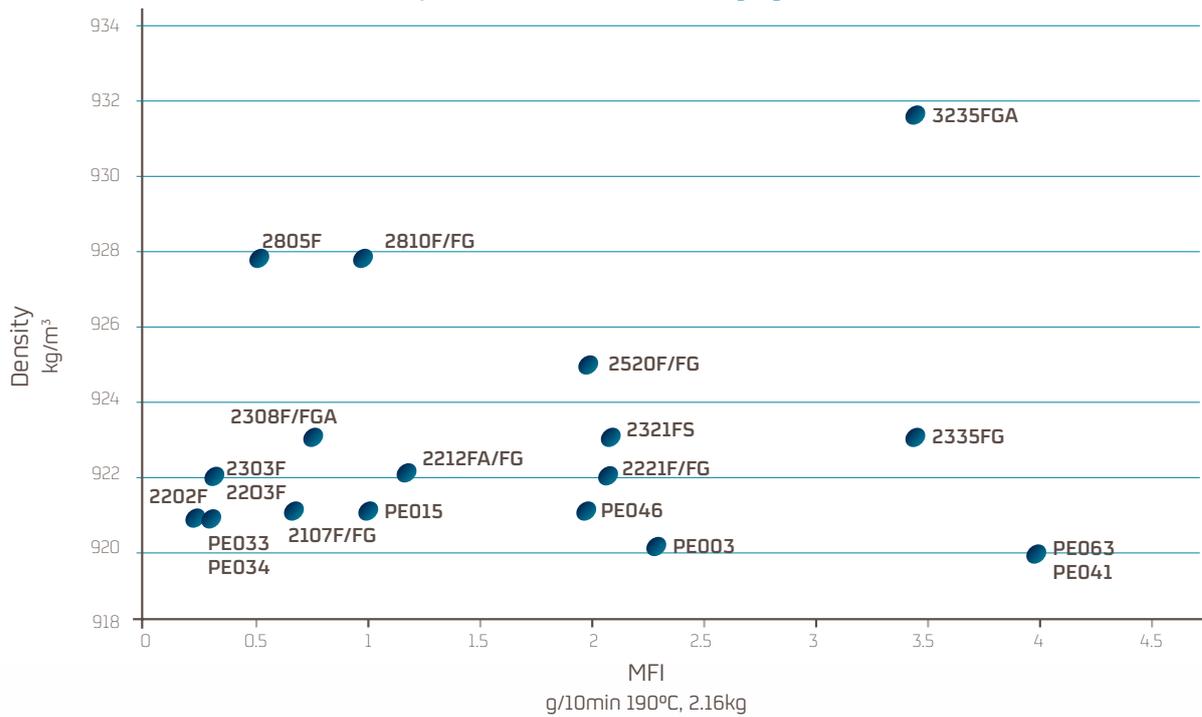


# Repsol Alcludia

High gloss film. LDPE

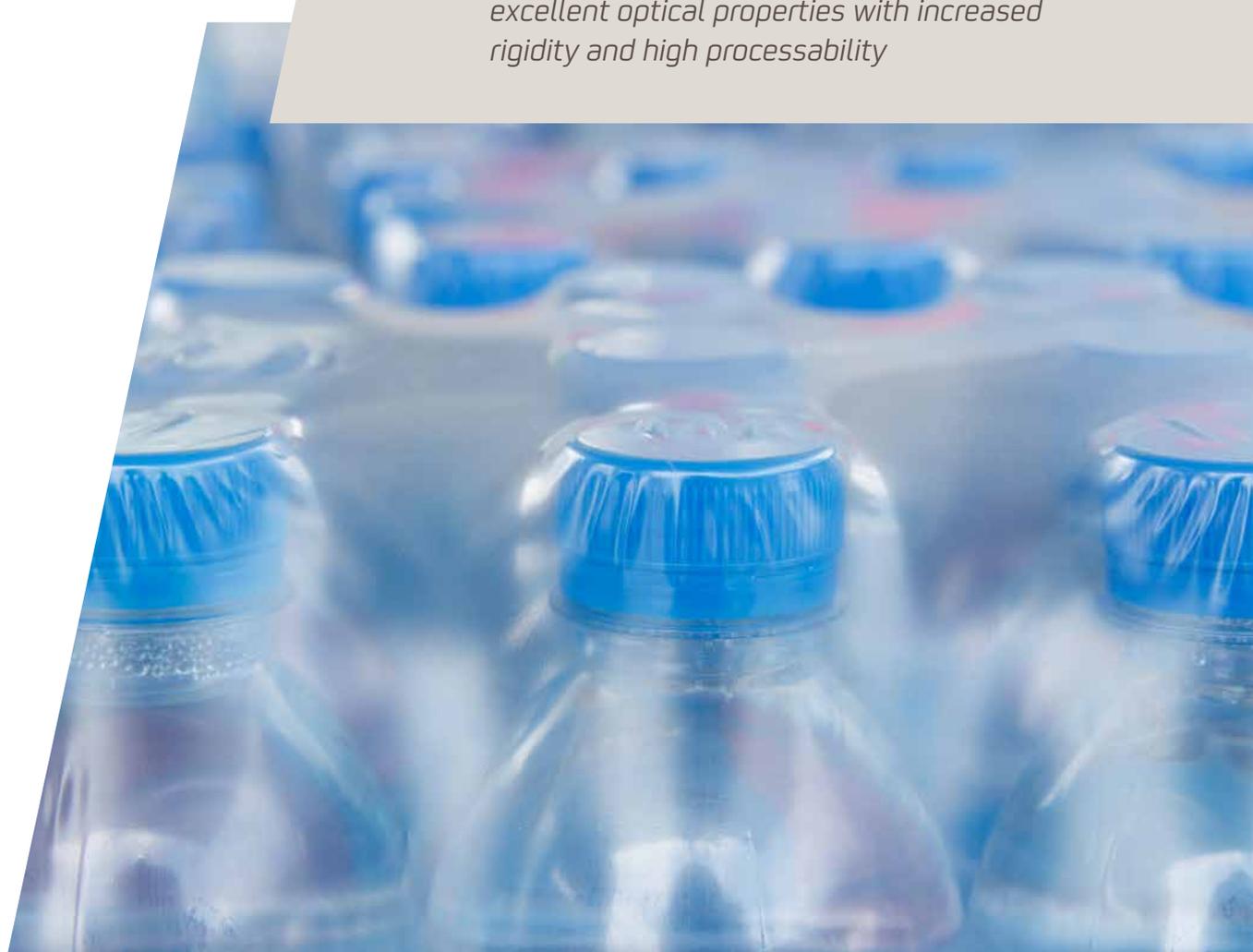
	Grade	MFI g/10 min 190°C, 2.16kg ISO 1133	Density kg/m <sup>3</sup> ISO 1183	Process	Gloss 60° ISO 2813	Haze % ASTM D-1003
	<b>2805F</b>	0.55	928	Autoclave	92	6.5
	<b>2810F</b>	1.0	928	Autoclave	102	6.3
	<b>2810FG</b>	1.0	928	Autoclave	97	9.0
New /	<b>2520F</b>	2.0	925	Autoclave	106	6.5
New /	<b>2520FG</b>	2.0	925	Autoclave	100	7.5

Repsol Alcludia. Blown and high gloss film. LDPE



Additives			Application
Thermal stabiliser	Antiblock (ppm)	Slip (ppm)	
●			General purpose, shrink film/groups, packaging
●			General purpose, shrink film/groups, packaging, lamination
●	850	500	General purpose, shrink film/groups, packaging, lamination
●			Automatic packaging, shrink film, coextrusion film with excellent optical properties, lamination
●	850	500	Automatic packaging, shrink film, coextrusion film with excellent optical properties, lamination

*Our developments of grades for high performance shrink film succeed in combining excellent optical properties with increased rigidity and high processability*



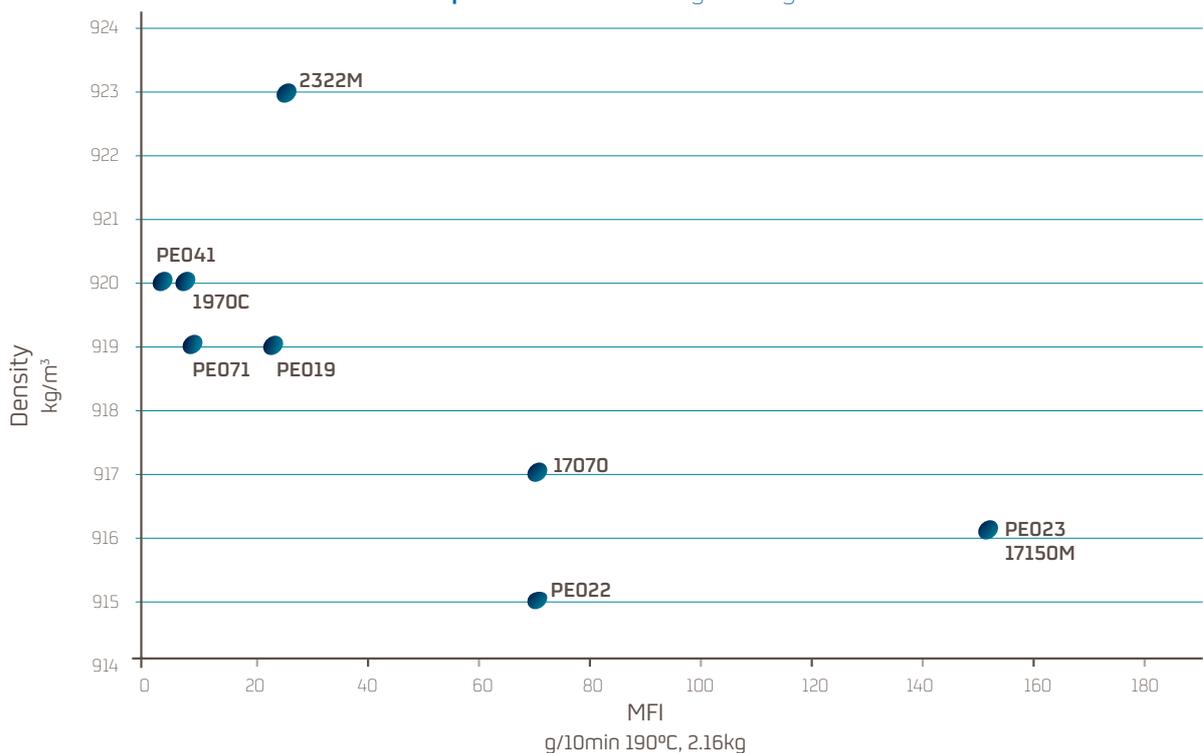
# Repsol Alcudia

## Coating and high MFI. LDPE

Grade	MFI g/10 min 190°C, 2.16kg ISO 1133	Density kg/m <sup>3</sup> ISO 1183	Process	Application
PE041	4.0	920	Autoclave	Extrusion coating, coextruded thin film, cast film
1970C	7.5	920	Autoclave	Extrusion coating
PE071	8.5	919	Autoclave	Extrusion coating
PE019	20	919	Autoclave	Masterbatches, extrusion coating
2322M	22	923	Autoclave	Masterbatches, extrusion coating
PE022	70	915	Autoclave	Masterbatches, hot sealing adhesive, caps and closures, wax blends
17070M	70	917	Autoclave	Masterbatches, hot sealing adhesive, caps and closures, wax blends
17150M	150	916	Autoclave	Masterbatches, hot sealing adhesive, caps and closures, wax blends
PE023	150	916	Autoclave	Masterbatches, hot sealing adhesive, caps and closures, wax blends



Repsol Alcudia. Coating and high MFI. LDPE



# Repsol Alcludia

Blown film. HDPE

Grade	MFI	Density	Process	Additives	Application
	g/10 min 190°C, 21.6kg ISO 1133	kg/m <sup>3</sup> ISO 1183		Thermal stabiliser	
TR156G	9.0	956	Slurry	●	Strong film of very low thickness, carrier bags, industrial liners, paper lamination films
TR135	12	938	Loop	●	Strong film of very low thickness, carrier bags, industrial liners, paper lamination films

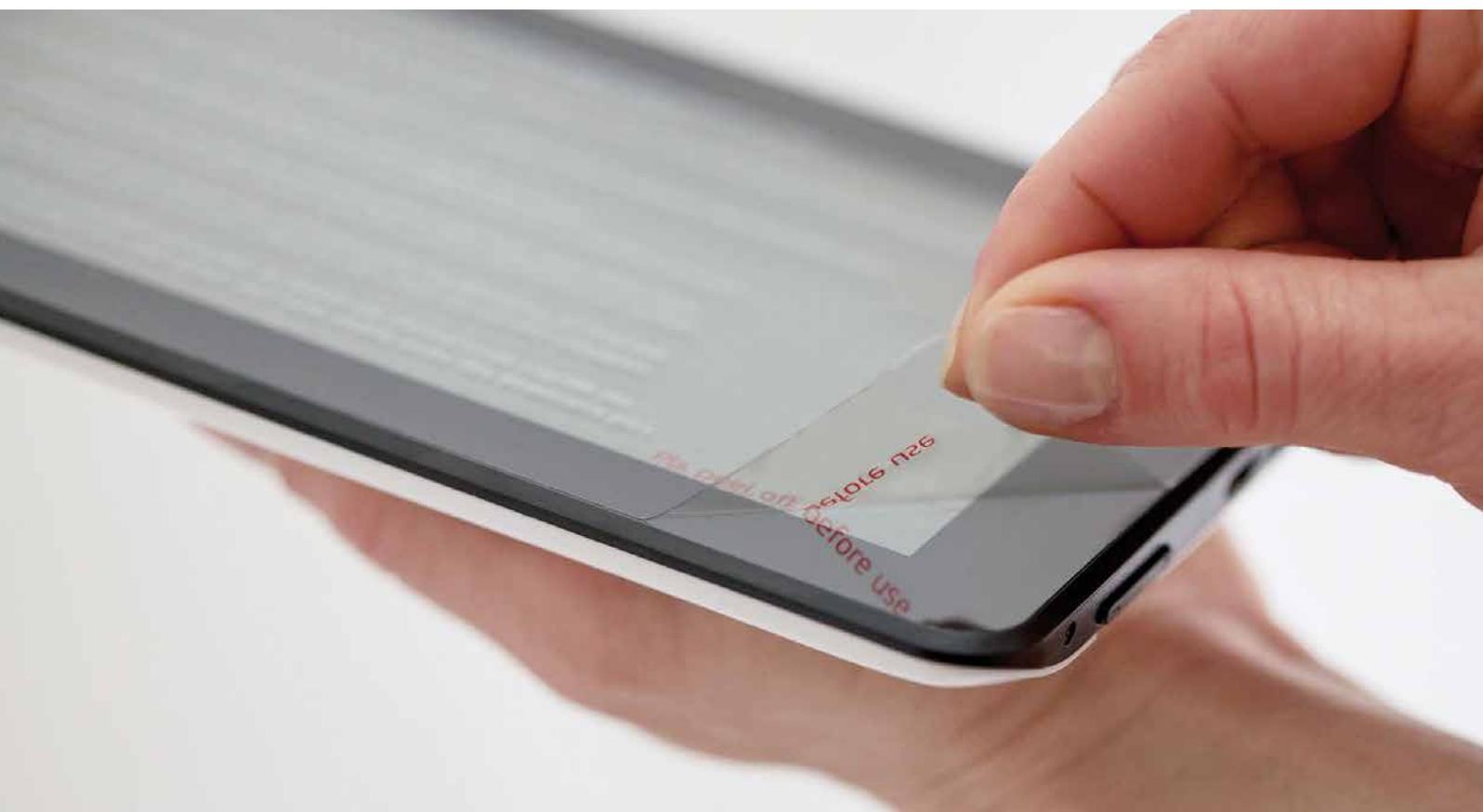
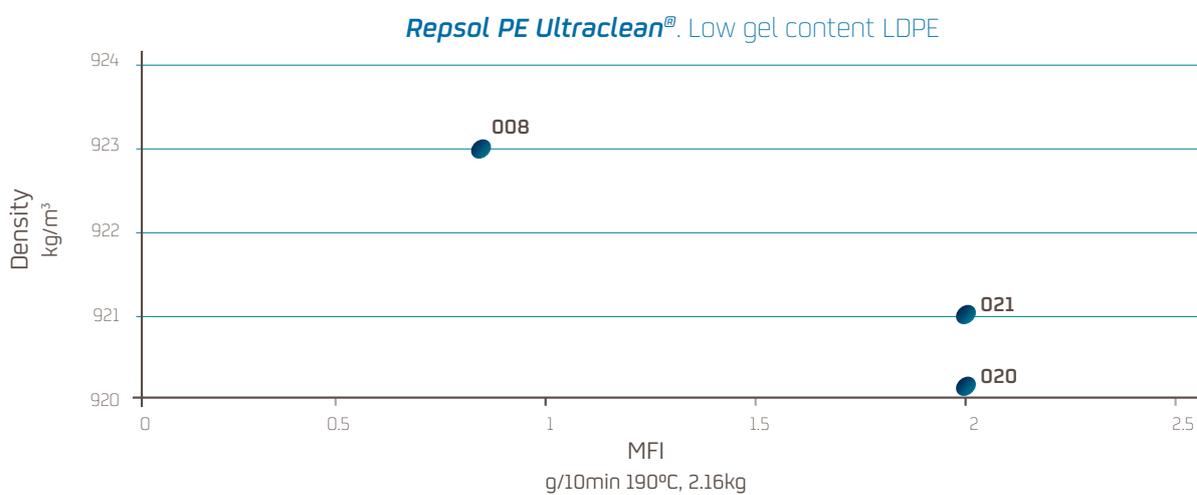
*Excellent properties with very low thickness. We also have grades optimised for the most modern extrusion coating systems*



# Repsol PE Ultraclean®

Low gel content LDPE

	Grade	MFI	Density	Process	Additives		
		g/10 min 190°C, 2.16kg ISO 1133	kg/m <sup>3</sup> ISO 1183		Thermal stabiliser	Antiblock [ppm]	Slip [ppm]
New /	<b>008</b>	0.75	923	Tubular			
New /	<b>020</b>	2.0	920	Autoclave			
New /	<b>021</b>	2.0	921	Autoclave	●	1125	550



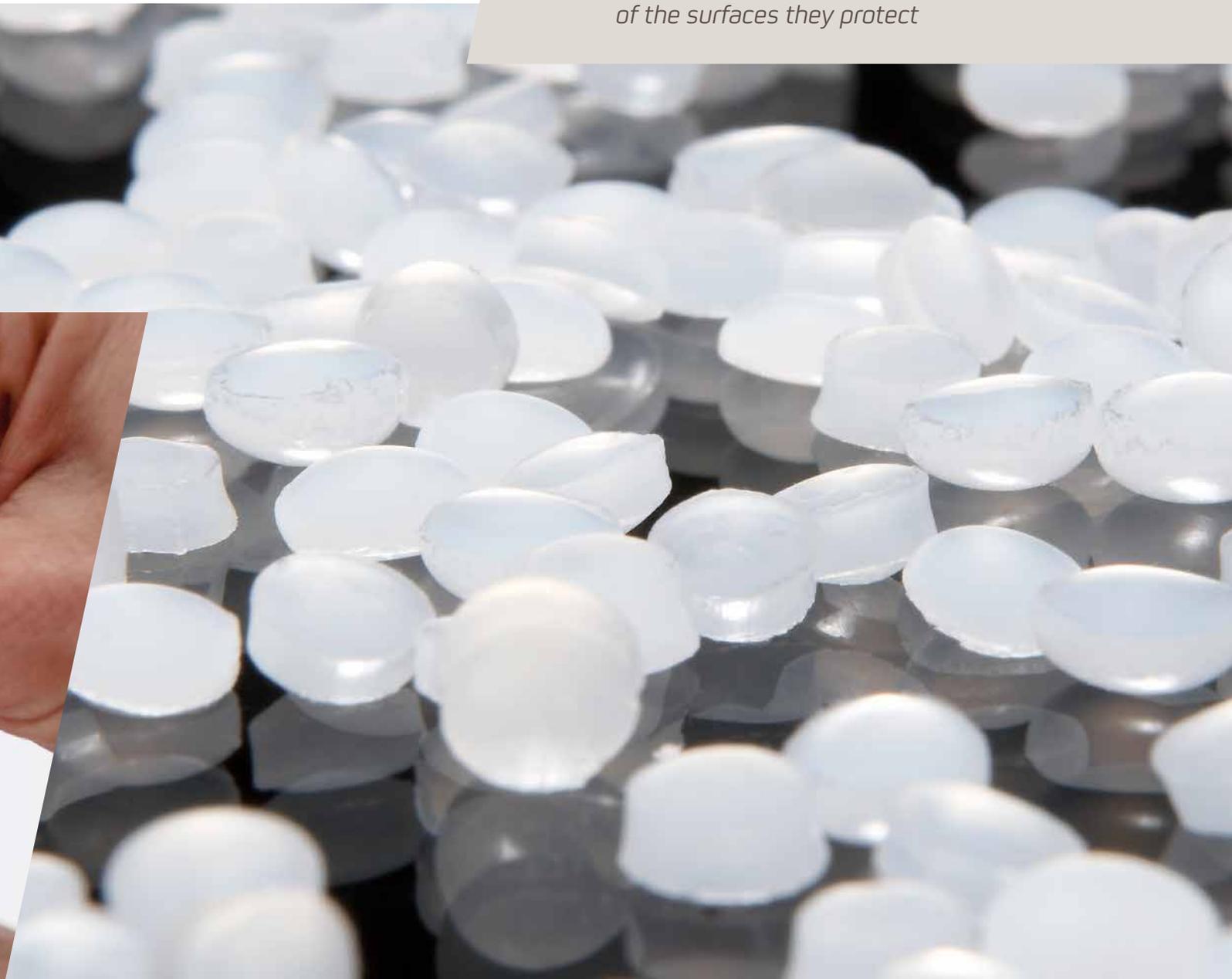
## Application

Protective or high added value film with very low gel content, packaging films requiring low gel content

Film with very low gel content, lamination with different substrates with and without adhesives (paper, aluminum, etc.), low thickness shrink-wrap film

Film with very low gel content, lamination with different substrates with and without adhesives (paper, aluminum, etc.), low thickness shrink-wrap film

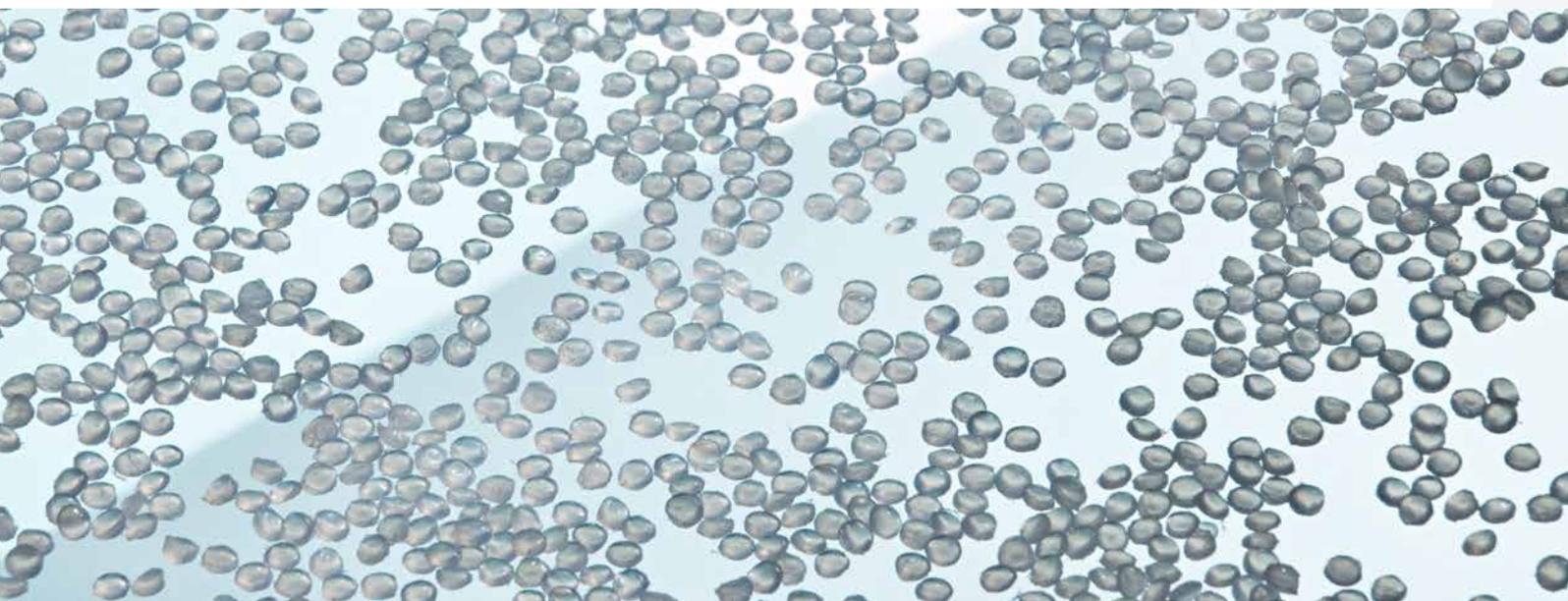
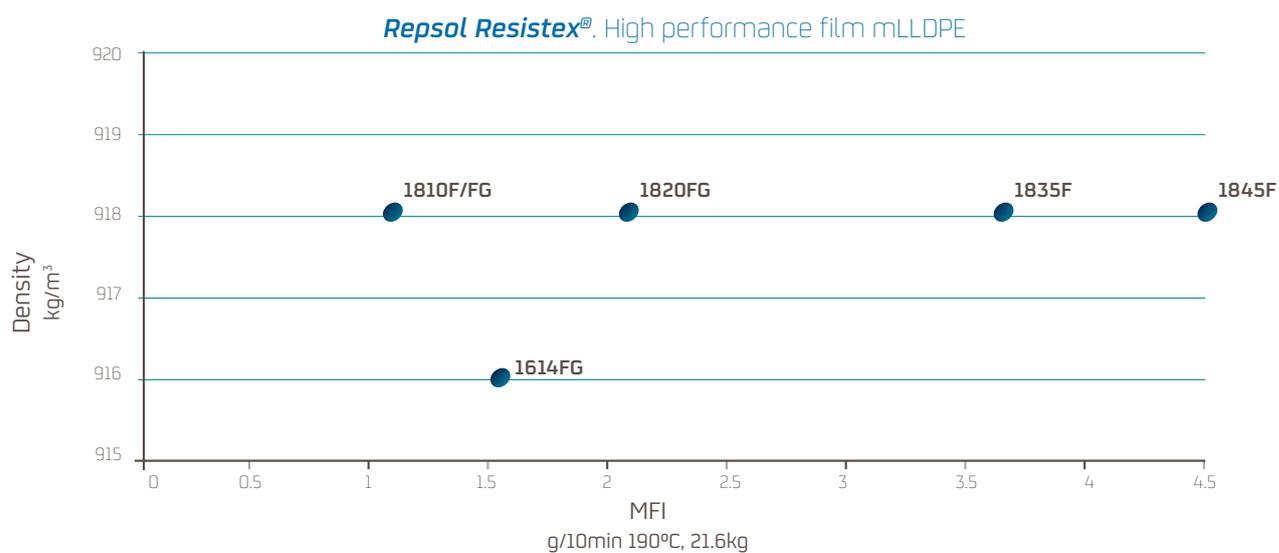
*Repsol PE Ultraclean® is specially designed for those film applications with the market's strictest quality requirements, which respect the impeccable finish of the surfaces they protect*



# Repsol Resistex<sup>®</sup>

## High performance film mLLDPE

Grade	MFI	Density	Process	Gloss	Haze	Thermal stabiliser
	g/10 min 190°C, 21.6kg ISO 1133	kg/m <sup>3</sup> ISO 1183		60° ISO 2813	% ASTM D-1003	
<b>1810F</b>	1.0	918	Loop	136	4	●
<b>1810FG</b>	1.0	918	Loop	120	5	●
New / <b>1614FG</b>	1.4	916	Loop	130	2	●
New / <b>1820FG</b>	2.0	918	Loop	130	3	●
New / <b>1835F</b>	3.5	918	Loop	140	2	●
New / <b>1845F</b>	4.5	918	Loop	140	2	●



Additives			Application
Antiblock (ppm)	Slip (ppm)	Processing aid	
		●	Film with excellent mechanical and optical properties. Sealing layer in co extrusions, packaging for food and industrial applications
2500	1000	●	Film with excellent mechanical and optical properties. Sealing layer in co extrusions, packaging for food and industrial applications
2500	1000	●	High processability, puncture resistance and excellent low sealing initiation temperature. Sealing in multilayer packaging and lamination
2500	1000	●	High processability, low thickness films with high mechanical performance. Sealing in multilayer packaging and lamination
			Excellent elongation and tenacity capacity, high puncture resistance and gloss. Single and multilayer cast film
			Excellent elongation and tenacity capacity, high puncture resistance and gloss. Single and multilayer cast film



*Our linear metallocene catalysed polyethylene film combines excellent processability with outstanding optical properties, transparency and gloss, and mechanical properties such as stretchability, weldability and puncture resistance. All our mLLDPE grades comply with European regulation EU-10-2011 for food contact*

REPSOL

Primeva



## EVA Copolymer

Grade	MFI	Density	Comonomer	Process	Application
	g/10 min 190°C, 2.16kg ISO 1133	kg/m <sup>3</sup> ISO 1183	% Vinyl acetate		
<b>P1807F</b>	0.70	941	18	Autoclave	Stretch agricultural and industrial film, stretch hood
<b>P1820F</b>	2.0	937	18	Autoclave	Stretch agricultural and industrial film, stretch hood, coextrusion, thermofusible bags
<b>P2430C</b>	3.0	944	24	Autoclave	Extrusion coating, coextrusion, thermo adhesive film, thermofusible bags
<b>P2735C</b>	3.5	953	27	Autoclave	Extrusion coating, coextrusion, thermo adhesive film, thermofusible bags
<b>P20020D</b>	20	940	20	Autoclave	Extrusion coating, coextrusion

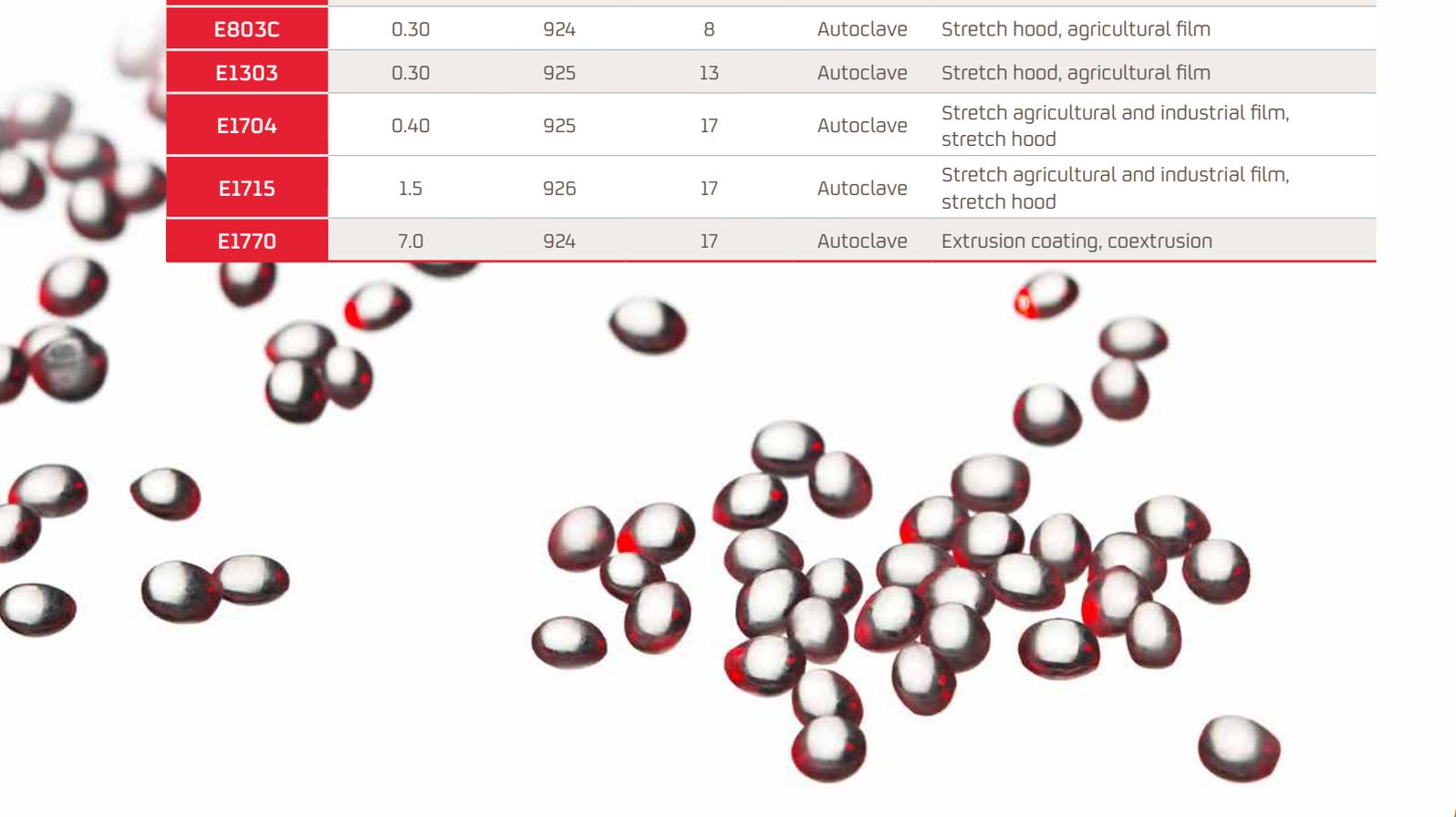
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Ebantix

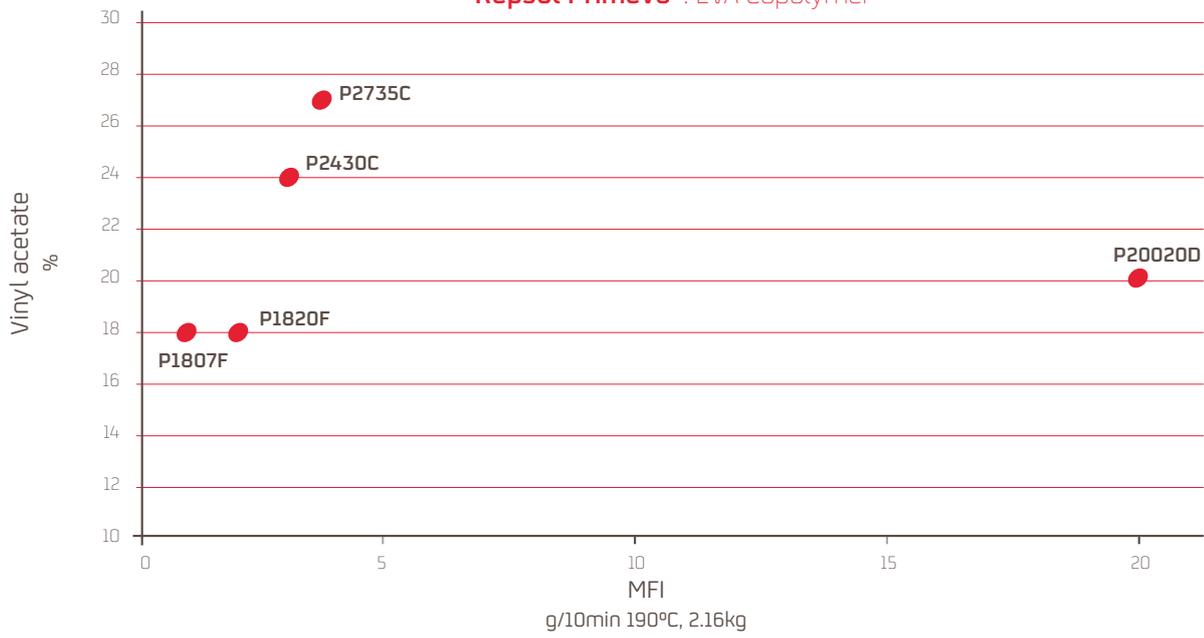


## EBA Copolymer

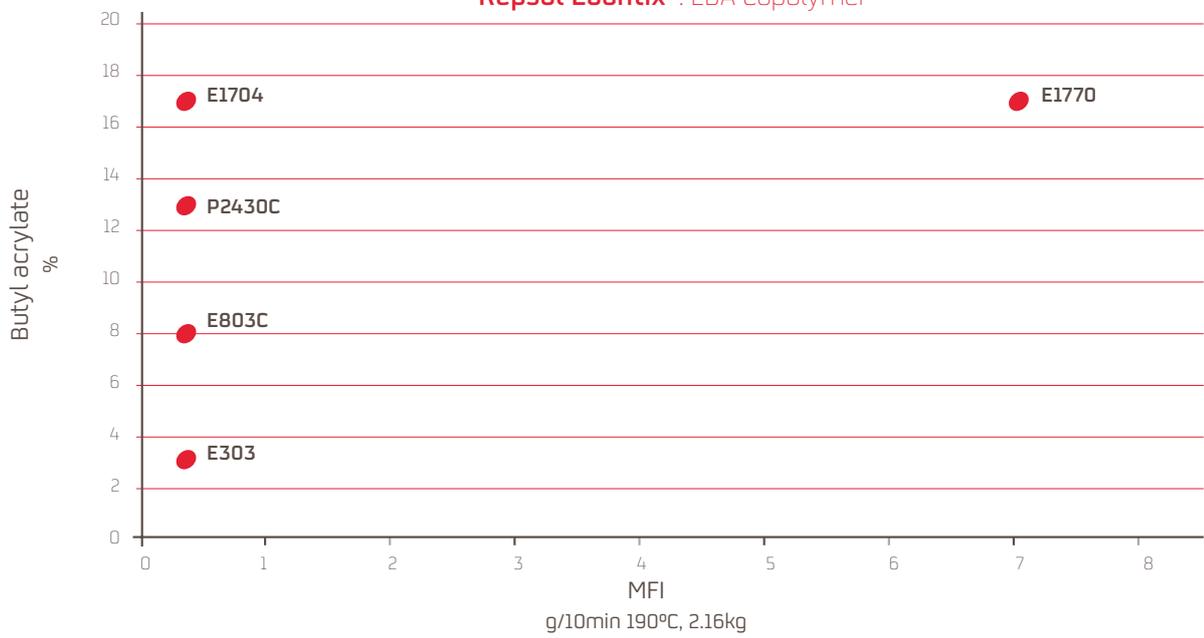
Grade	MFI	Density	Comonomer	Process	Application
	g/10 min 190°C, 2.16kg ISO 1133	kg/m <sup>3</sup> ISO 1183	% Butyl acrylate		
<b>E303</b>	0.30	923	3	Autoclave	Stretch hood, agricultural film
<b>E803C</b>	0.30	924	8	Autoclave	Stretch hood, agricultural film
<b>E1303</b>	0.30	925	13	Autoclave	Stretch hood, agricultural film
<b>E1704</b>	0.40	925	17	Autoclave	Stretch agricultural and industrial film, stretch hood
<b>E1715</b>	1.5	926	17	Autoclave	Stretch agricultural and industrial film, stretch hood
<b>E1770</b>	7.0	924	17	Autoclave	Extrusion coating, coextrusion



### Repsol Primeva<sup>®</sup>. EVA Copolymer



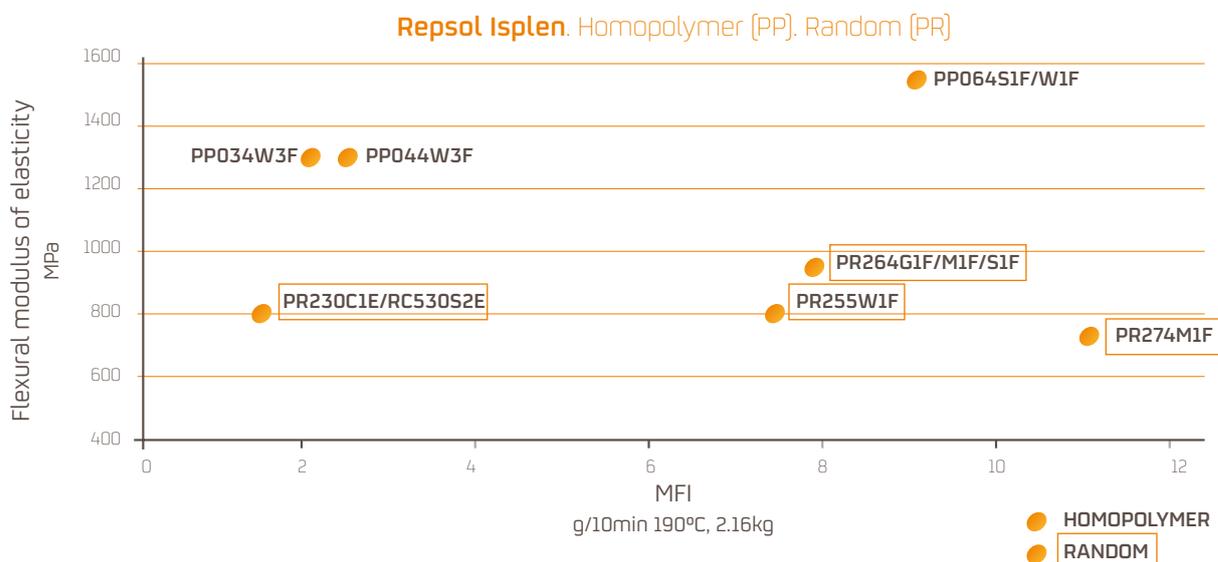
### Repsol Ebantix<sup>®</sup>. EBA Copolymer



# Repsol Isplen

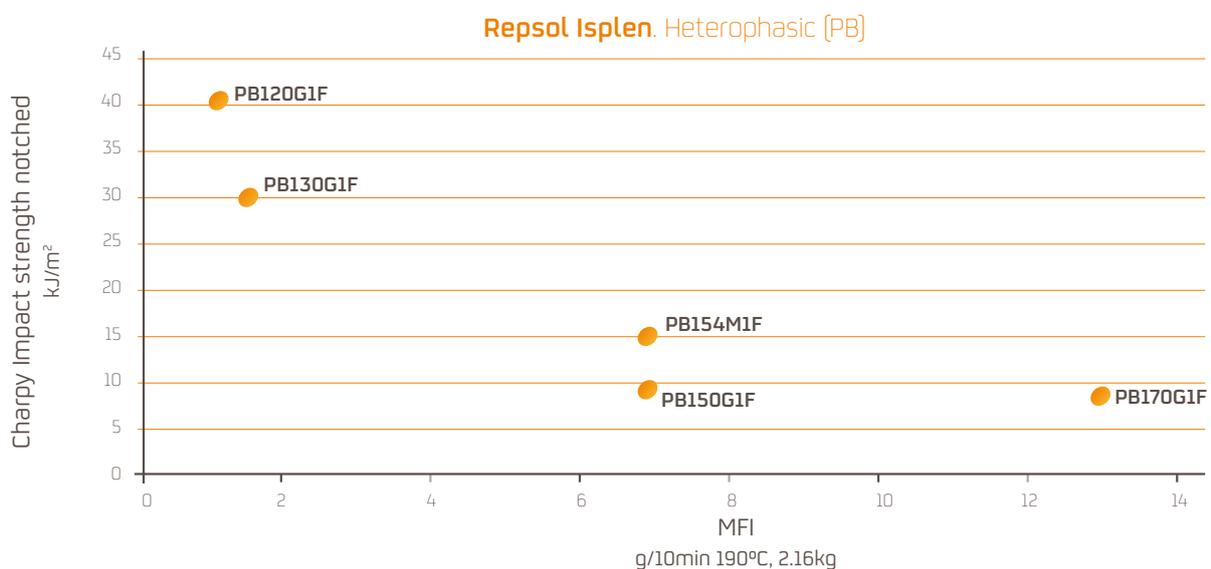
## Extrusion. Polypropylene

Grade	Type	MFI	Flexural modulus of elasticity	Tensile strength at yield	Charpy Impact strength notched	Antiblock [ppm]
		g/10 min 230°C, 2.16kg ISO 1133	MPa ISO 178	MPa ISO 527	kJ/m <sup>2</sup> 23°C ISO 179	
PP034W3F	Homopolymers	2.0	1300	35	5	
PP044W3F	Homopolymers	3.0	1300	35	5	
PP064S1F	Homopolymers	9.0	1500	35	4	1900
PP064W1F	Homopolymers	9.0	1500	35	4	
PB120G1F	Heterophasic	0.95	1100	21	40	
PB130G1F	Heterophasic	1.3	1100	27	30	
PB150G1F	Heterophasic	7.0	1150	27	9	
PB154M1F	Heterophasic	7.0	1100	27	15	1750
PB170G1F	Heterophasic	13	1150	27	8	
PR230C1E	Random	1.5	800	27	22	
RC530S2E	Random	1.5	800	27	22	
New / PR255W1F	Random	8.0	800	25	7	
PR264G1F	Random	9.0	950	25	6	
PR264M1F	Random	9.0	950	25	6	1650
PR264S1F	Random	9.0	950	25	6	1650
New / PR274M1F	Random	11	700	25	8	1650
New / PX440AF	Specialties	3.0				
PX452AF	Specialties	6.5				
PX262CF	Specialties	11				1300
New / PX262DF	Specialties	11				





Additives			Application
Slip (ppm)	Antistatic (ppm)	Without calcium stearate	
		●	Bioriented or metallised filmes
		●	Bioriented or metallised filmes
1900	500		For cast film. Provides the film with rigidity and good optical properties. Slip and antiblock formulated
		●	For cast film. Provides rigidity and good optical properties. Formulation suitable for metallisation
			Tapes, high tenacity mono-oriented films, blown film, cast film. Sterilisable. High tenacity
			Blown film, mono-oriented film and sheet with low temperature requirement. General purposes
			Cast film with good low-temperature impact properties. General purposes
1750			For cast film. High impact at low temperatures, good optical properties. Slip and antiblock formulated
			General purposes, cast film with low temperature requirement
			Clarified grade for blown film with good transparency, gloss and impact resistance
			Clarified grade for blown film with very high transparency, gloss and impact resistance
		●	Cast film of very high transparency, gloss and stretchability. Formulation suitable for metallisation
			Cast film of good transparency and good sealing properties. General purposes
1650			Cast film of good transparency and good sealing properties. Slip and antiblock formulated
1650	500		Cast film of good transparency and good sealing properties. Slip, antiblock and antistatic formulated
1650			Sealing layer in multilayer films. Low sealing initiation temperature
			Matte film for BOPP: excellent film quality, low gloss and high haze
			Matte film: excellent film quality, low gloss and high haze
1300			Peelable films on polypropylene. Slip and antiblock formulated
			Peelable films on polypropylene.



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, packaging facilities and logistics centres all have OHSAS 18001.2007 [Occupational Health and Safety Assessment Series] certification for their rigorous safety measures.

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

Petrochemical complexes,  
packaging facilities  
and logistics centres

**OHSAS 18001.2007**



*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*

## Quality

All petrochemical plants are compliant with the current ISO 9001:2015 standards, for the quality of processes from manufacture to distribution, transport management and end product warehousing.

All petrochemical plants

**ISO 9001:2015**

Tarragona industrial complex

**FSSC 22000**

## Environment

We set up and deploy ambitious energy efficiency programmes to reduce energy consumption and GHG emissions as one of the key elements of our strategy. These programmes pursue long term targets which have been made public in order to facilitate their progress by the stakeholders. In this sense, Repsol Química has attained a final reduction of 0.56 million tonnes at the end of the 2006-2013 period. Repsol is currently working on a new target covering the period 2014-2020, that involves an additional reduction of 0.42 million tonnes of CO<sub>2</sub>.

They also, 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.

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, as well as manage 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 performances improvement and thus contribute to a more efficient and sustainable use of energy.

Puertollano, Tarragona  
and Sines

**ISO 50001**

**ISO 14001**

**ISO 14064**



*Differentiation*

*Vision*

*Safety*

*Efficiency*

*Globalization*

April 2018

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*Transparency*

*Flexibility*

*Integrity*

*Responsibility*

*Innovation*