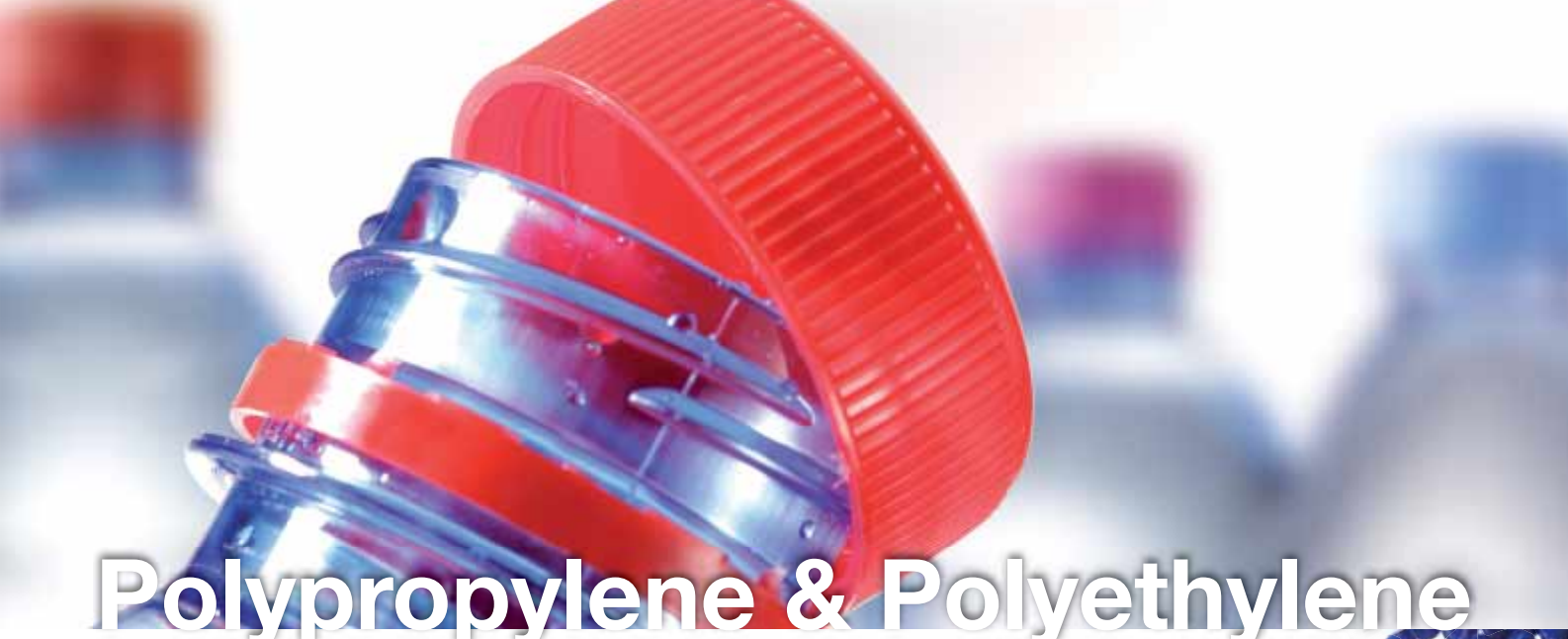


Polypropylene & Polyethylene

Product range for caps & closures.

Increased dimensional stability and more consistent shrinkage

Superior organoleptical properties (odour & taste), superior aesthetics (transparency, gloss)

Courtesy of Netstal

Outstanding processing, far exceeding the traditional HDPE caps resins

Excellent stress-cracking resistance (ESCR) of Lumicene M 5220 & M 5220 M, surpassing caps requirements for carbonated drinks

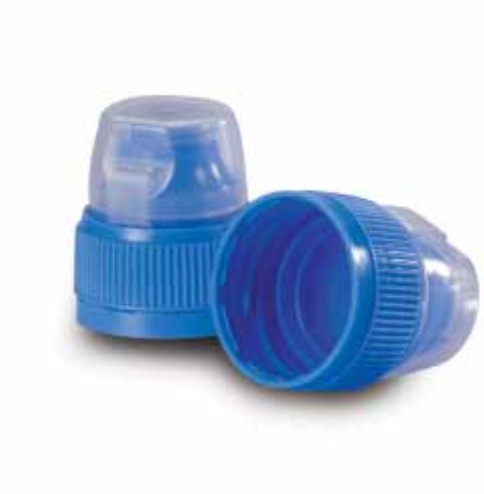
TOTAL PETROCHEMICALS

TOTAL

Commitment to your business

Caps & Closures is a key segment for Total Petrochemicals with a major presence for many years. The product range is large, encompassing both PE & PP resins, and well established in the market. Following tables give a partial overview of Total Petrochemicals product range.

A full range of Polypropylene and Polyethylene...



For more data on our products, please contact your sales representative or visit www.totalpetrochemicals.com

Polypropylene (PP)

Grade	Main properties	
	Melt Flow Index (g/10 min)	Other characteristics
lumicene® Random Copolymers		
lumicene® MR10MX0	10	Outstanding transparency and organo
lumicene® MR30MC2	30	Transparent, antistatic and organo
lumicene® MR30MX0	30	Outstanding transparency and organo
lumicene® MR60MC2	60	Transparent, antistatic and organo
Homopolymer		
PPH 5060	6	
PPH 7060	12	
PPH 7062	12	Antistatic
PPH 9082	25	Antistatic
PPH 9084	25	Nucleated, slip agent
PPH 9040	25	Super high rigidity, nucleated
PPH 10012	42	Nucleated and antistatic
PPH 11012	55	Nucleated and antistatic
Random Copolymers		
PPR 7220	10	Transparent
PPR 7227	10	Transparent and organo
PPR 9220	20	Transparent
PPR 10232	40	Transparent and antistatic
Impact Copolymers		
PPC 5660	7	
PPC 7652	16	Nucleated and antistatic
PPC 11712	55	Nucleated and antistatic

Lumicene® Random Polypropylene is a new catalyst platform technology

TOTAL PETROCHEMICALS *lumicene*®

	lumicene® vs standard random
High Gloss	++
Low Extractables	++
Outstanding Organoleptics	++
High Transparency	+(+)*
High Moulding reproducibility	++
Impact resistance	++

* MR30MX0, MR10MX0

Information contained in this publication is true and accurate at the time of publication and to the best of our knowledge. The nominal values stated herein are obtained using laboratory test specimens. Before using one of the products mentioned herein, customers and other users should take all care in determining the suitability of such product for the intended use. Unless specifically indicated, the products mentioned herein are not suitable for applications in the pharmaceutical or medical sector.
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Our technologies at your service

Total Petrochemicals offers a well established full range of PE and PP resins for caps and closures with recognized performances in all market segments such as food and beverage, personal care, household and pharmaceuticals, both for injection and compression moulding. By combining different proprietary process and catalyst solutions, including the metallocene catalyst platform, Total Petrochemicals differentiates itself by providing resins with improved characteristics compared to the traditional solutions.
More specifically, our Lumicene® HDPE product range delivers superior organoleptics (odour and taste), improved stress crack resistance and outstanding processing in injection moulding (cycle time reduction, energy savings), therefore meeting the most stringent requirements of the bottle cap market, both for carbonated and still beverages.

...to match your highest requirements in caps and closures production

High Density Polyethylene (HDPE)

Grade	Main properties									Typical applications
	Density	Melt flow rate 2.16 kg - 190°C	Slip agent	Tensile Modulus	Yield Stress	ESCR (F50)	Melting temperature	Recommended process		
	g/cm³	g/10 min		MPa	MPa	h	°C			
	ISO 1183	ISO 1133/D	-	ISO 527 (1)	ISO 527 (1)	ASTM D1693-B (2)	ISO 11357	CM	IM	
lumicene® M 5220	0.952	2	No	1000	25	> 200	131	X	X	Carbonated drinks
lumicene® M 5220 M	0.952	2	Yes	1000	25	> 200	131	X	X	Carbonated drinks
lumicene® M 6040	0.960	4	No	1300	29	-	133	X		Still drinks, food and cosmetic
HD 6081	0.960	8	No	1300	29	-	131		X	Still drinks, food and cosmetic

Organoleptic quality available for all grades upon request

(1) specimen 1B, 23°C, 1 mm/min
(2) in 100% Igepal, 50°C
CM : compression moulding
IM : injection moulding

Low Density Polyethylene (LDPE)

Grade	Main properties									Typical applications
	Density	Melt flow rate 2.16 kg - 190°C	Additives	Yield Strength	Stress at break	Elongation at break	Flexural Modulus	Vicat temperature	Melting temperature	
	g/cm³	g/10 min		MPa	MPa	%	MPa	°C	°C	
	ISO 1183	ISO 1133/D		ISO 527	ISO 527	ISO 527-3	ISO 178	ISO 306	ISO 11357	
1022 FN 24	0.923	2.3	No	10	9	520	220	96	110	Flexible lids, spouts, cosmetics, industrial, teats in sport caps
1022 FH 24	0.923	2.3	Yes*	10	11	440	220	94	110	
LD 0304	0.924	4.0	No	9	13	550	250	95	111	
LA 0710	0.918	7.5	No	9	12	450	180	90	108	
1200 MN 18 C	0.918	22.0	No	8	7	200	150	85	106	
1700 MN 18 C	0.918	70.0	No	8	7	120	140	84	103	

* Includes 750 ppm Erucamide & 750 ppm Talc

Total Petrochemicals

a Petrochemicals World Major

Total Petrochemicals, one of the world's leading petrochemicals producers, brings together the petrochemicals activities of the Total Group: base chemicals and their related polymers (polyethylene, polypropylene and polystyrene).

With about 6,250 employees worldwide, Total Petrochemicals is present in Europe, the United States, the Middle East and Asia. Our products serve numerous consumer and industrial markets, including packaging, construction and the car industry.

As part of the Total Group, Total Petrochemicals draws on strong synergies with Total's refining business, particularly in Europe and the United States, as well as with its exploration and production segment, mainly in the Middle East. To ensure ongoing development, Total Petrochemicals pursues a strategy aimed at improving the competitiveness of its plants in Europe and the United States, as strengthening its position in Asia and at developing projects that benefit from a more favourable access to raw materials, such as ethane in Qatar, or strong synergies with refining such as aromatics units on the site of the future Jubail refinery.

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www.entercom.be 10-2010 H7901

Contact us

If you wish to evaluate all the potential of the caps & closures product range, please contact your regular Total Petrochemicals sales representative or contact us at:

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