



**TOTAL**

COMMITTED TO BETTER ENERGY

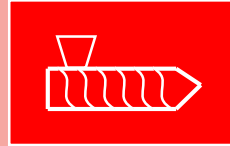


# HOUSEHOLDS & CHEMICALS PP & PE PRODUCT RANGE

# REQUIREMENTS FOR HDPE BLOW MOULDING MATERIALS

## • Processability

- Sufficient melt strength (parison)
- High Line output
- Low sagging during shaping
- Even Wall thickness distribution

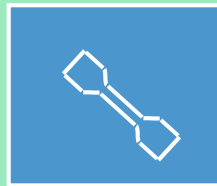


## • Chemical resistance

- High Environmental Stress Crack Resistance (ESCR)
- Barrier Properties (Oxygen, CO<sub>2</sub>, Oil)

## • Mechanical performance

- High stiffness
- Good Impact properties



## • Optical performance

- Good surface appearance
- High transparency,
- No frozen-in stress

# CONSUMER PACKAGING

## Lubricants



**5802**  
**rPE6306**

## Household Products



**5502**  
**5802**  
**rPE6306**

## Cosmetics



**5502**  
**M3410**  
**rPE6306**

## Small jerry cans



**5802**  
**51090**  
**53090**  
**rPE6306**

# HDPE 5502

<u>TYPE</u>	<u>DENSITY</u>	<u>MI2</u>	<u>HLMI</u>	<u>ESCR</u>	<u>FLEX MOD</u>
5502	0.954	0.30	22	60	1200

Bottles and medium-size containers for **solids and liquids** (liquid food, household products, cleaning liquids, detergents, etc ...)

- general multi purpose HDPE materials
- very easy processing on all equipments
- nice surface finish
- food approved
- ESCR ok for majority of applications



# TOTAL CIRCULAR COMPOUND RPE6306

<u>TYPE</u>	<u>DENSITY</u>	<u>HLMI</u>	<u>ESCR</u>	<u>FLEX MOD</u>
RPE6306	0.955	30	> 300	1150

Bottles and medium-size containers for **solids and liquids** (liquid food, household products, cleaning liquids, detergents, etc ...)

The ultimate solution when talking about circular economy in quality packaging.



- Contains 50% PCR waste. Ready-to-use product
- US FDA certificate for use in high quality requiring applications

# HDPE 5802

<u>TYPE</u>	<u>DENSITY</u>	<u>MI2</u>	<u>HLMI</u>	<u>ESCR</u>	<u>FLEX MOD</u>
5802	0.957	0.25	23	40	1500

Bottles and medium-size containers needing a good compromise rigidity / ESCR and a very high impact resistance

- performances level close to a semi high molecular weight HDPE
- easy processing
- excellent impact resistance (up to 50 L jerry cans)
- very nice surface finish
- food approved

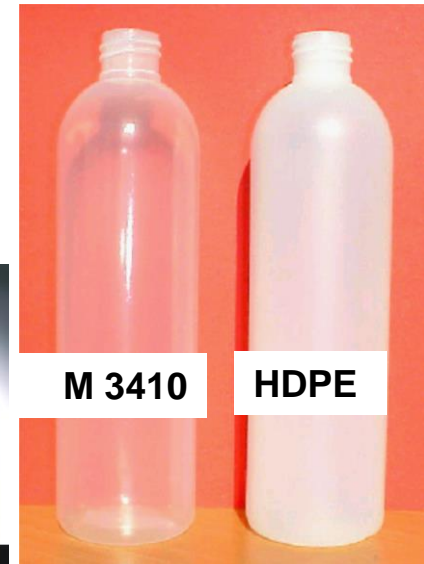


# LUMICENE M3410

<u>TYPE</u>	<u>DENSITY</u>	<u>MI2</u>	<u>HLMI</u>	<u>ESCR</u>	<u>FLEX MOD</u>
<b>M3410</b>	<b>0.934</b>	<b>0.9</b>	<b>27</b>	<b>&gt; 1000</b>	<b>600</b>

Flexible bottles with high ESCR, excellent gloss, transparency and contact clarity

- flexible, squeezable bottles in monolayer
- high contact clarity in blend with HDPE
- high gloss rigid bottles in co-ex with HDPE / PP
- very high resistance to stress cracking
- high impact resistance
- excellent transparency
- nice surface finish (gloss)
- food approved



# POLYPROPYLENE IN BLOW MOULDING

- Homopolymer
  - Excellent stiffness
  - Best heat resistance (hot filling)
  - Best scratch resistance
- Random Copolymer => Most used
  - High transparency if clarified & excellent gloss
  - Good impact
  - Good compromise melt strength & processability
- Impact Copolymer
  - Best impact resistance
  - High stiffness
  - Opaque





# PP GRADES FOR EXTRUSION BLOW MOULDING

Grade	MFI g/10'	Flex. Modulus MPa	IZOD notched, 23°C, kJ/m <sup>2</sup>	
PPH 3060	1.8	1300	6	-
PPC 2660	0.8	1100	>50	-
PPC 3060	1.3	1200	>50	
PPR 3221	1.8	900	22	clarified
PPR 3260	1.8	1000	7.5	-