Polyethylene Lumicene® mPE M 2310 EP

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For other Regulations, please consult our Product Stewardship Certificate available on this website. We have included in our Polyethylene Product Stewardship Certificate the conformity to a number of regulations whenever it could be certified for all our European polyethylene products.

In case you might need additional technical or regulatory information, please contact your sales representative.

Polyethylene

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Website: www.totalpetrochemicals.biz

Polyethylene Lumicene® mPE M 2310 EP

Technical data sheet
Metallocene Polyethylene BLOWN FILM
Produced in Europe

Description

Lumicene® mPE M 2310 EP is a second generation metallocene based Linear Low Density Polyethylene with hexene as comonomer.

Lumicene® mPE M 2310 EP can be processed at high output rates with low extrusion pressure, excellent bubble stability and gauge control and in comparison with conventional LLDPE and first generation metallocene based polyethylene.

Lumicene® mPE M 2310 EP is especially dedicated to film applications where superior optical properties in combination with excellent impact resistance (even at low temperature) and sealing strength are required, particularly in blend and coextrusion with LLDPE or LDPE.

Lumicene® mPE M 2310 EP is suited for many applications in the field of consumer, industrial, food or hygiene packaging such as bags, deep freeze, collation shrink and lamination.

Characteristics

Property	Method	Unit	Typical value
Density	ISO 1183	g/cm³	0.923
Melt Flow Rate (190°C/2.16 kg)	ISO 1133	g/10 min	0.9
Melting temperature	ISO 11357	°C	116
Vicat temperature	ISO 306	°C	114

Values indicated are typical for this product. Density and MFR are properties routinely measured during “the standard quality control procedure”. The other figures are generated by tests not included in the "standard quality control procedure", and are given for information only. Data are not intended for specification purposes.

Processing

Lumicene® mPE M 2310 EP is typically extruded at a melt temperature around 200°C.
Lumicene® mPE M 2310 EP can be blown easily at any of the following conditions:
Temperature: 180 to 230°C

- BUR : 1.5:1 to 4.5:1
- Die gap : 0.8 to 2.8 mm

An excellent blending ability of mPE M 2310 EP with LDPE and LLDPE was observed.

Additives

Antioxidant : yes
PPA : yes

Polyethylene

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Blown film properties

These values have been measured on a 40 µm blown film.

Property	Method	Unit	Typical value (*)
Tensile Strength at Yield MD/TD (**)	ISO 527-3	MPa	12/12
Tensile Strength at Break MD/TD (**)	ISO 527-3	MPa	59/58
Elongation at Break MD/TD (**)	ISO 527-3	%	650/740
Elmendorf MD/TD (**)	ISO 6383-2	N/mm	80/165
Dart test	ISO 7765-1	g	310
Haze	ISO 14782	%	5.5
Gloss 45°	ASTM D2457		73

(*) Figures stated hereabove are obtained using laboratory test specimens produced with the following extrusion conditions: 45 mm screw diameter, L/D = 30, die diameter = 120 mm, die gap = 1.4 mm, BUR = 2.5:1, temperature = 210°C.

(**) MD : Machine Direction, TD : Transverse Direction

Handling and storage

Please refer to the safety data sheet (SDS) for handling and storage information. It is advisable to convert the product within one year after delivery provided storage conditions are used as given in the SDS of our product. SDS may be obtained from the website: www.totalpetrochemicals.biz

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CERTIFICATE N° 33757

Feluy, December 10, 2009

POLYETHYLENE - mPE M2310EP grade as produced in Europe

1.STATEMENT OF COMPLIANCE FOR FOOD CONTACT APPLICATIONS :

1.1 PLASTICS DIRECTIVE

We confirm that the above-mentioned Product fulfils the harmonized requirements on materials used for articles or components of articles intended to come into contact with food as described in the European Directive 2002/72/EC amended by Directives 2004/1/EC, 2004/19/EC, 2005/79/EC, 2007/19/EC, 2008/39/EC and by the regulation 975/2009/EC and its transposition and /or application into national laws as incorporated in the following food contact regulations:

in Belgium :
- Arrêté Royal du 03/07/2005 concernant les matériaux et objets destinés à entrer en contact avec les denrées alimentaires (Moniteur Belge du 29/07/2005).
- Arrêté Royal du 05/07/2006 (Moniteur Belge du 07/09/2006) modifiant l'Arrêté Royal du 3/07/2005.

in France :
- Décret Ministériel n° 73-138 du 12/02/73 et n° 2007-766 du 10/05/2007 ainsi que les lettres circulaires de la Répression des Fraudes et contrôle de la qualité (Recueil de textes: brochure n° 1227 "Matériaux au contact des aliments et denrées destinées à l'alimentation humaine" - édition : 15/07/2002);
- Instruction relative à l'emploi d'additifs dans les matières plastiques au contact des denrées alimentaires (Bulletin Officiel de la concurrence, de la consommation et de la répression des fraudes du 11/08/93);
- Arrêté du 19/11/2008 modifiant l'Arrêté du 02/01/2003 relatif aux matériaux et objets en matière plastique mis ou destinés à être mis au contact avec les denrées, produits et boissons alimentaires.

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in Germany :
- Gesundheitliche Beurteilung von Kunststoffen im Rahmen des Lebensmittel- und Bedarfsgegenständegesetzes (BfR): Empfehlung VII: Polypropylen Stand 01.06.2007 - 210 Mitteilung - B. Gesundh. Bl. 50 (2007) 1470,
- Bedarfsgegenständeverordnung vom 10. April 1992 (BGBL.I.S.866) und Änderungen vom 11. April 1993 (BGBL.I.S.775), vom 17. April 1997 (BGBL.I.S.796), vom 21. Dezember 2000 (BGBL. I. S.1886), vom 7. April 2003 (BGBL.I.S.486) und vom 6.September 2005 (BGBL.I.S.2618).

in Italy :
- Decreto Ministeriale 21/03/1973 (G.U. n° 104 - 20/4/1973) Disciplina igienica degli imballaggi, recipienti, ustensili, destinati a venire in contatto con le sostanze alimentari o con sostanze d'uso personale as amended by Decree of the Ministry of Health N°411 of 1/12/2000 (G.U. N°11-15/01/2001)
- Decreto Ministeriale 26/04/1993, n°220 (G.U. n° 162 - 13/7/1993) Regolamento recante aggiornamento del decreto ministeriale 21/03/1973, concernente la disciplina igienica degli imballagi, reciepienti, ustensili destinati a venire in contatto con le sostanze alimentari e con sostanze d'uso personale as updated up to D.M. n° 174 of 24/09/2008 (G.U. n° 261 – 7/11/2008).

in Spain :
- Orden SCO/ 983/ 2003 de 15 de abril (B.O.E. n° 99 de 25/04/2003).
- Resoluciones del Ministerio de Sanidad de 04.11.1982 (B.O.E. n° 282 de 24.11.1982).
- Orden del Ministerio de Sanidad de 03.07.1985 (B.O.E. n° 166 de 12.07.1985).
- Real Decreto 2207/1994 de 16/11/1994 as updated to R.D. 442/2001.
- Real Decreto 118/2003 de 31/01/2003 as updated to R.D. 866/2008.

in the United kingdom :
- The Plastic Materials and Articles in Contact with Food Regulations - 2008
- England: Statutory Instruments 2008/916
- Northern Ireland: Statutory Rules 2008/167
- Scotland: Statutory Instruments 2008/127
- Wales: Statutory Instruments 2008/1237 (W.124)

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Conditions:

- Overall Migration Limit:

According to Directive 82/711/EEC (and its amendments 93/8/EEC and 97/48/EEC), 85/572/EEC and 2002/72/EC, the overall migration limit, for which a maximum value of 10 mg/dm2 or 60 mg/kg is set (Directive 2002/72/EC, article 2) , has to be controlled on the finished articles intended to come into contact with foodstuffs; consequently it is the responsibility of the end-user of the above-mentioned Product.

Moreover we inform you that the overall migration result is influenced by the conditions of use e.g. temperature, type of packaged foodstuff (fatty food or aqueous food). Consequently the packaging has to be controlled following the specific end-use conditions of use as described in Directives 82/711/EEC and 85/572/EEC.

- Specific Migration Limit(s) and/or other restrictions :

1. Restriction for Monomer [a]:

1- Hexene (CAS RN : 00592-41-6 - PM Ref : 18820 - Status : SML= 3 ppm)

2. Restriction for Additive(s) [b]:

It pertains also to end-users to check by appropriate specific migration tests on the final material or article the suitability for contact with different food-types and various end-use conditions. However these are beyond the control of TOTAL PETROCHEMICALS RESEARCH FELUY and are a part of the responsibility of the user of the above-mentioned Product.

Moreover we inform you that the specific migration result is influenced by the conditions of use e.g. temperature, type of packaged foodstuff (fatty food or aqueous food). Consequently the packaging has to be controlled following the specific end-use conditions of use as described in Directives 82/711/EEC and 85/572/EEC.

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- Dual use additive (2004/19/EC):

We inform you that the above-mentioned Product contains one or more food additive(s) authorized and subject of a use restriction in food under Consolidated Directive 95/2/EC. We received from the concerned additive(s) suppliers' information demonstrating that the applicable restriction in food under Consolidated Directive 95/2/EC will be met in the finished products. The end-user must contact us for additional information and you must inform the end-user accordingly.

1.2 REGULATION 1935/2004/EC (Framework Regulation)

We hereby confirm that the above-mentioned Product, when used under normal or foreseeable conditions of use, meets the relevant requirements laid down in Regulation 1935/2004/EC.

1.3 REGULATION 2023/2006/EC (GMP)

We inform you that the production of the above-mentioned Product is systematically reviewed with regards to good manufacturing practice (GMP) using our ISO 9001 System, and following the Plastics Europe guideline specifically dedicated to GMP.
Therefore we can state that the above-mentioned Product meets the relevant requirements laid down in Regulation 2023/2006/EC.

2. STATEMENT OF COMPLIANCE FOR FOOD CONTACT IN THE UNITED STATES OF AMERICA :

- Code of Federal Regulations, Food and Drugs (FDA) Title 21 (2009) §177.1520 : Olefins Polymers;(a) (3) (i) *(a) (1)*, (b) and (c) 3.2a. The above-mentioned Product meets the criteria in §176.170(c), with Food Types I through IX of Table 1, under conditions of use B through H of Table 2.

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GENERAL USE CONDITIONS (FOOD CONTACT) :

it pertains to end-users of materials intended to come into contact with food, to ensure that the material does not bring about an unacceptable change in the composition of the food, or bring about a deterioration in the organoleptic characteristics which render it unfit.

3. STATEMENT OF COMPLIANCE FOR TOYS - EUROPEAN STANDARDS EN 71- 3.1994 and EN 71- 9.2005 :

We hereby confirm that the above-mentioned Product meets the relevant requirements of European Standards EN 71-3 1994, its amendment EN 71- 3/ A1 2000, its corrigendum AC: 2002 entitled "Safety of Toys - Part 3 : Migration of certain elements" and EN 71-9, September 2005 “Organic chemical compounds- requirements”.

The above-mentioned Product meets this standard because every time analyses were performed on this product, results were below the prescribed limits.

4. STATEMENT ON NO COMPLIANCE WITH EUROPEAN PHARMACOPOEIA :

We **DO NOT** certify that the above-mentioned product would comply with the European pharmacopoeia.

5. STATEMENT ON NO COMPLIANCE WITH UNITED STATES PHARMACOPOEIA :

The above-mentioned product is **NOT** in compliance with the US pharmacopoeia because we **DID NOT** perform the required tests.

6. STATEMENT ON NO COMPLIANCE WITH CANADIAN PHARMACOPOEIA:

The above-mentioned Product has **NOT** a DMF in Canada.

For obtaining more information regarding the Pharmacopoeia and DMF, please contact directly our ATC (Phone : +32.64.51.43.83, Fax : +32.64.51.46.50) or our vendor.

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7. STATEMENT ON TRANSMISSIBLE BOVINE SPONGIFORM ENCEPHALOPATHY (BSE) :

We hereby confirm that we did receive an indication from our suppliers of additives (by additive is meant a substance which is incorporated into plastics to achieve a technical effect in the finished product) used in the above-mentioned Product mentioning the absence of any substances which are of animal origin. Based on the above, we are confident that the above-mentioned Product is free of SRM (Specified Risk Materials).

8. STATEMENT ON GENETICALLY MODIFIED ORGANISMS (GMO).

We hereby confirm that we did receive an indication from our suppliers of additives [b)] used in the above-mentioned Product mentioning the absence of any Genetically Modified Organisms (GMO).

9. STATEMENT ON INVENTORIES:

We declare that the monomers [a)] and, if present, the additives [b)] of the above-mentioned Product are listed or exempted from listing on the inventories of the following countries:
- Canada: DSL (Domestic Substances List)
- China: IECSC (Inventory of Existing Chemical Substances Manufactured or Imported in China)
- Europe: EINECS AND/OR ELINCS (Replaced by REACH)
- Korea: KECL (Korean Existing Chemicals List)
- United States: TSCA (Toxics Substances Control Act Inventory)

NOTE :

[a)] Monomer as defined in the EC Directive 2002/72/EC and its amendments up to Regulation 975/2009/EC.
[b)] Additive as defined in the EC Directive 2002/72/EC and its amendments up to Regulation 975/2009/EC.

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DISCLAIMER :

Our certificate does not cover:

- any modification of the above-mentioned Product by any addition of any other product or ingredient to it;
- any prejudicial modification of the above-mentioned Product resulting from a processing of it;
- an inadequate use and/or storage of the above-mentioned Product and/or of the finished articles.

The present certificate is valid for a period of one year starting from the date first above written. Upon the expiration of this certificate, we can issue a new one at your request. In case of change during this period a new certificate will be issued automatically; kindly forward it to any recipient of the present certificate.

TOTAL PETROCHEMICALS RESEARCH FELUY

C. RAIMOND
Regulatory Affairs

F. WYLIN
Regulatory Affairs, Manager

Issued by an electronic system

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