

Recycled and Recyclable Raw Materials (Polyethylene) are sought by Greek Factory

Summary

Profile type	Company's country	POD reference
Business request	Greece	BRGR20230427005
Profile status	Type of partnership	Targeted countries
PUBLISHED	Commercial agreement Supplier agreement	• World
Contact Person	Term of validity	Last update
Rita Elste - Tomsone	27 Apr 2023 26 Apr 2024	27 Apr 2023

General Information

Short summary

A Greek company which produces packaging items from low (LDPE) and high (HDPE) density polyethylene and polypropylene (PP), as well as biodegradable materials based on starch, is looking for producers of recycled and recyclable raw materials from low polyethylene (LDPE) and high polyethylene (HDPE) in order to establish commercial agreement with technical assistance.

Full description

A Greek company that was founded in 1999 has a product range that includes all kinds of packaging bags, T-shirt multipurpose plastic bags, confectionery bags, packaging rolls, cleaning rolls, plastic sheets, polypropylene bags, garbage bags, biodegradable bags, biodegradable pharmacy bags, food bags and various other products. The factory has two vertically integrated and modern lines for the production and processing of polyethylene and Biodegradable-compostable materials, a modern flexographic printing machine as well as a recycling station for all the residues resulting from the production process.

The company, being active in the production of low (LDPE) and high (HDPE) density polyethylene packaging items, is interested in modernizing its manufacturing processes and make them more environmentally friendly. For this reason, it is looking for partners who are able to provide it with raw materials which are recycled and at the same time recyclable and have specific technical specifications.

Advantages and innovations

Technical specification or expertise sought

The technical specifications of the material provided are the following :

The materials provided should have low (LDPE) and high (HDPE) density polyethylene.

For low density polyethylene (LDPE):

The Low density polyethylene (LDPE), should be additivated with slip and antiblocking agent, suitable for blown film extrusion. The material should be characterized by a good balance between processability, mechanical and optical properties.

Main Applications: The material should be recommended for general blown film applications, for the production of low gauge film and shrink film, and for blend.

Main Properties:

Resin Properties Value Unit Test Method
Melt Flow Rate (190 °C/2.16 kg) 2.1 g/10min ISO 1133
Melt Flow Rate (190 °C/5 kg) - g/10min ISO 1133
Melt Flow Rate (190 °C/21.6 kg) - g/10min ISO 1133
Density 0.923 g/cm³ ISO 1183
Melting Point 114 °C Internal method
Brittleness temperature <- 75 °C ASTM D 746
Vicat softening point (1 kg) 93 °C ISO 306/A

Film Properties * Value Unit Test Method
Tensile stress at yield MD 11 MPa ISO 527-3
Tensile stress at yield TD 11 MPa ISO 527-3
Tensile stress at break MD 23 MPa ISO 527-3
Tensile stress at break TD 18 MPa ISO 527-3
Elongation at break MD 300 % ISO 527-3
Elongation at break TD 580 % ISO 527-3
1% Secant modulus MD 180 MPa ISO 527-3
1% Secant modulus TD 190 MPa ISO 527-3
Elmendorf tear resistance MD 80 N/mm ISO 6383-2
Elmendorf tear resistance TD 50 N/mm ISO 6383-2
Impact resistance F50 (Dart Drop Test) 125 g ISO 7765-1/A
Dynamic coefficient of friction (COF) 0.10 - ISO 8295
Haze 6 % ISO 14782
Gloss, 45° 70 % ASTM D 2457
Recommended film thickness 25 ÷ 80 micron -

Processing notes:

The material should be easily processable using blown film technology. Melt temperature should be between 160°

For high density polyethylene (HDPE):

The material should be, copolymer of ethylene and hexene tailored for blown film production. Extraordinary melt toughness made possible to get film down to 0.006 mm thickness. Extruded film has high impact resistance, good tear strength, excellent antiblock and good barrier properties, low gel content and excellent sealing and printing

properties.

Processing Recommendations:

Processing temperature: 195 – 220 oC

Blow-up ratio: 3.5–5 : 1

Neck height: 6 -10 times die diameter

PROPERTY TEST METHOD UNIT NOMINAL VALUE

MELT FLOW RATE EN ISO 1133-1 190°C / 2.16 kg g/10 min 0.18

DENSITY EN ISO 1183-2 kg/m3 940

TENSILE STRENGTH AT BREAK EN ISO 527-2 EN ISO 527-3 MPa 32 43/33

TENSILE STRENGTH AT YIELD EN ISO 527-2 EN ISO 527-3 MPa 18 24/19

ELONGATION AT BREAK EN ISO 527-2 EN ISO 527-3 % 800 550/700

IZOD IMPACT STRENGTH EN ISO 180 kJ/m2 18 (no fracture)

SHORE D HARDNESS EN ISO 868 Shore D 58

ESC RESISTANCE , F50 EN ISO 22088-3 method B ASTM D 1693 h > 1000

DART DROP ASTM D 1709 EN ISO 7765-1 g 88

TEAR STRENGTH (ELMENDORF) ASTM D 1922 g/mil 45/700

Application:

The material should be suitable for production of advertising bags, industrial bags, bags for food package, and for production of composite films and blends with other kind of polyethylene.

The material should have conformity with the European norms for materials intended to come into contact with foodstuffs.

Recycling:

Polyethylene is a material suitable for recycling.

The waste, that could appear during processing, should be kept clean before new usage through direct recycling.

Stage of development

Sustainable Development goals

- **Goal 12: Responsible Consumption and Production**
- **Goal 11: Sustainable Cities and Communities**
- **Goal 13: Climate Action**
- **Goal 7: Affordable and Clean Energy**

IPR Status

Partner Sought

Expected role of the partner

The potential partner should be producer of recycled and recyclable raw materials from low polyethylene (LDPE) and high polyethylene (HDPE)

Type of partnership

Commercial agreement

Supplier agreement

Type and size of the partner

• **Big company**

• **SME 50 - 249**

• **SME <=10**

• **SME 11-49**

Dissemination

Technology keywords

- **10002007 - Environmental Engineering / Technology**
- **02005004 - Packaging for materials**
- **10003004 - Recycling, Recovery**
- **03004008 - Plastics and Rubber related to Chemical Technology**

Targeted countries

- **World**

Market keywords

- **08001018 - Polymer (plastics) materials**
- **09004006 - Packing products and systems**
- **08001009 - Speciality/performance materials: producers and fabricators**
- **08001001 - Plastic fabricators**
- **08001005 - Other fabricated plastics**

Sector groups involved

- **Materials**
- **Environment**