Technical Data Sheet

Lupolen 4106F RM

High Density Polyethylene

Product Description

Lupolen 4106F RM is a UV stabilised hexene high density polyethylene granule specifically developed for use in rotational moulding. This grade is typically used by customers to manufacture large tanks, boats, fishboxes and underground infrastructure parts. **Lupolen 4106F RM** has a wide processing window, very good melt flow, outstanding ESCR and impact strength (especially at low temperatures). In comparison with similar rotomoulding large tank grades this material can process at reduced oven and cooling times and therefore use less gas or energy. It can be moulded to lower than typical PIATs. It is not intended for use in medical and pharmaceutical applications.

Regulatory Status

For regulatory compliance information, see *Lupolen* 4106F RM Product Stewardship Bulletin (PSB) and Safety Data Sheet (SDS).

This grade is supported for use in drinking water applications.

Status	Commercial: Active
Availability	Africa-Middle East; Asia-Pacific; Europe
Application	Agricultural Tanks; Containers; Flotation Devices; Industrial Containers; Intermediate Bulk Containers; Marine Applications; Pallets; Septic Tanks; Tanks; Tanks, Industrial
Market	Agriculture; Industrial, Building & Construction
Processing Method	Rotomolding
Attribute	Good Processability; High ESCR (Environmental Stress Cracking Resistance); Low Temperature Impact Resistance; Low Warpage

Typical Properties	Nominal Value	Units	Test Method
Physical			
Melt Flow Rate, (190 °C/2.16 kg)	6.0	g/10 min	ISO 1133
Density	0.940	g/cm³	ISO 1183
Mechanical			
Flexural Modulus Rotomoulded specimen 4mm PIAT 150C	850	MPa	ISO 178
Tensile Modulus, (23 °C) Rotomoulded specimen 4mm PIAT 150C	790	MPa	ISO 527-1, -2
Tensile Strength, (23 °C) Rotomoulded specimen yield 4mm PIAT 170C	19	MPa	ISO 527-1, -2
Tensile Strain at Break, (23 °C, 50 mm/min) Rotomoulded specimen 4mm PIAT 150C	340	%	ISO 527-1, -2
Environmental Stress Crack Resistance, (Condition B, F50, 100% Igepal, 50 °C)	>2000	hr	ASTM D1693
FNCT, (6.0 MPa, 6.6% Dehyton PL, 50 °C)	8,0	hr	ISO 16770
Impact			

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Charpy Impact Strength - Notched			
(23 °C)	38	kJ/m²	ISO 179-1/1eA
Rotomoulded specimen 4mm 130 PIAT			
(-30 °C, Type 1, Edgewise, Notch A)	6.3	kJ/m²	ISO 179-1/1eA
Rotomoulded specimen 4mm 130 PIAT			
Impact Strength, (-40 °C, 3.20 mm, Rotational Molded)	62	J	ARM
Rotomoulded specimen 3.2mm PIAT 150C -230C 100% ductile			
Hardness			
Shore Hardness, (Shore D, Rotational Molded)	58		ISO 868
Thermal			
Deflection Temperature Under Load Unannealed (0.45 MPa)	>66	°C	ISO 75-2/B
Melting Temperature	127	°C	DSC

Notes

These are typical property values not to be construed as specification limits.

Processing Techniques

Users should determine the conditions necessary to obtain optimum product properties and suitability of the product for the intended application.

In cases where higher temperatures are required, please contact your appropriate technical contact for support.

Further Information

Health and Safety:

The resin is manufactured to the highest standards, but special requirements apply to certain applications such as food end-use contact and direct medical use. For specific information on regulatory compliance contact your local representative.

Workers should be protected from the possibility of skin or eye contact with molten polymer. Safety glasses are suggested as a minimal precaution to prevent mechanical or thermal injury to the eyes.

Molten polymer may be degraded if it is exposed to air during any of the processing and off-line operations. The products of degradation may have an unpleasant odor. In higher concentrations they may cause irritation of the mucus membranes. Fabrication areas should be ventilated to carry away fumes or vapours. Legislation on the control of emissions and pollution prevention should be observed.

The resin will burn when supplied with excess heat and oxygen. It should be handled and stored away from contact with direct flames and/or ignition sources. While burning, the resin contributes high heat and may generate a dense black smoke.

Recycled resins may have previously been used as packaging for, or may have otherwise been in contact with, hazardous goods. Converters are responsible for taking all necessary precautions to ensure that recycled resins are safe for continued use.

For further information about safety in handling and processing please refer to the Safety Data Sheet.

Conveying:

Conveying equipment should be designed to prevent production and accumulation of fines and dust particles that are contained in polymer resins. These particles can under certain conditions pose an explosion hazard. Conveying systems should be grounded, equipped with adequate filters and regularly inspected for leaks.

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Storage:
The resin is packed in 25 kg bags, octabins or bulk containers protecting it from contamination. If it is stored under certain conditions, i. e. if there are large fluctuations in ambient temperature and the atmospheric humidity is high, moisture may condense inside the packaging. Under these circumstances, it is recommended to dry the resin before use. Unfavorable storage conditions may also intensify the resin's slight characteristic odor.

Resin should be protected from direct sunlight, temperatures above 40°C and high atmospheric humidity during storage. Higher storage temperatures may reduce the storage time.

The information submitted is based on our current knowledge and experience. In view of the many factors that may affect processing and application, these data do not relieve processors of the responsibility of carrying out their own tests and experiments; neither do they imply any legally binding assurance of certain properties or of suitability for a specific purpose. This information does not remove the obligation of the customer to inspect the material on arrival and notify us of any faults immediately. It is the responsibility of those to whom we supply our products to ensure that any proprietary rights and existing laws and legislation are observed.

Company Information

For further information regarding the LyondellBasell company, please visit http://www.lyb.com/.

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