



Lupolen 5031 L Q 449 K

Polyethylene, High Density

Product Description

Lupolen 5031 L Q 449 K is a high density polyethylene (HDPE) base material for extrusion of silane crosslinked pipes (PE-Xb).
It is not intended for medical and pharmaceutical applications.

Product Characteristics

Status	Commercial: Active
Test Method used	ISO
Availability	Europe
Processing Methods	Extrusion Pipe Sheet and Semi Finished Products
Typical Customer Applications	Plumbing, Heating & Cooling

Typical Properties	Method	Value	Unit
Physical			
Density	ISO 1183	0.955	g/cm ³
Melt flow rate (MFR)	ISO 1133		
(190°C/2.16kg)		4.0	g/10 min
(190°C/5.0kg)		12.5	g/10 min
Mechanical			
Tensile Modulus (23 °C, v = 1 mm/min, Secant)	ISO 527-1, -2	1100	MPa
Tensile Stress at Yield (23 °C, v = 50 mm/min)	ISO 527-1, -2	26	MPa
Tensile Strain at Yield (23 °C, v = 50 mm/min)	ISO 527-1, -2	10	%
Impact			
Charpy notched impact strength (23 °C)	ISO 179	5	kJ/m ²
Hardness			
Shore hardness (Shore D (3 sec))	ISO 868	62	
Ball indentation hardness (H 132/30)	ISO 2039-1	50	MPa
Thermal			
Vicat softening temperature	ISO 306		
(A50 (50°C/h 10N))		125	°C
(B50 (50°C/h 50N))		70	°C
Melting Temperature	ISO 3146	131	°C

Additional Properties

Extrusion Temperature:
Melt temperatures above 280 °C should be avoided to prevent potential degradation. In case higher temperatures are needed please contact LyondellBasell.

Notes

Typical properties; not to be construed as specifications.

Further Information

Conveying:

Conveying equipment should be designed to prevent production and accumulation of fines and dust particles that may be contained to a small extent in polymer materials. These particles can under certain conditions pose an explosion hazard. We recommend the conveying system used is equipped with adequate filters, is operated and maintained so that no leak develops and adequate electrical grounding exists at all times.

Health and Safety:

Special requirements apply to certain applications such as food contact end-use 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 minimum 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 have an unpleasant odour. 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 must be observed. If the principles of sound manufacturing practice are

adhered to and the place of work is well ventilated, no health hazards in processing the material have been reported.

The material 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. In burning the material generates considerable heat and may generate dense black smoke. Minor fires can be extinguished by water, developed fires should be extinguished by heavy foams forming an aqueous or polymeric film. For further information about safety in handling and processing please refer to the Material Safety Data Sheet (MSDS).

Storage:

The material is packed in 25 kg bags or in bulk containers protecting it from contamination. Storage times of natural materials longer than 6 months may have a negative influence on the quality of the final product (for example the brightness). It is generally recommended to convert all materials latest within 6 months from the date of delivery.

The material is subjected to degradation by ultra-violet radiation or by high storage temperatures. Therefore the material must be protected from direct sunlight, temperatures above 40°C and high atmospheric humidity during storage.

Further unfavourable storage conditions are large fluctuations in ambient temperature and high atmospheric humidity. These conditions may lead to moisture condensing inside the packaging. Under these circumstances, it is recommended to dry the material before use. Unfavourable storage conditions may also intensify the material's slight characteristic odour.

Due the hygroscopic character of the carbon black pigments, black coloured materials may pick up moisture even under appropriate storage conditions. If this is the case it is recommended to dry the material before processing. After a storage period of more than 3 months drying of such material is recommended as standard practice.

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LyondellBasell markets this product through the following entities:

- Equistar Chemicals, LP
- Basell Sales & Marketing Company B.V.
- Basell Asia Pacific Limited
- Basell International Trading FZE
- LyondellBasell Australia Pty Ltd

For the contact details of the LyondellBasell company selling this product in your country, please visit <http://www.lyb.com/>.

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This product(s) may not be used in:

- (i) any U.S. FDA Class I, Health Canada Class I, and/or European Union Class I Medical Devices, without prior notification to Seller for each specific product and application; or
- (ii) the manufacture of any of the following, without prior written approval by Seller for each specific product and application: (1) U.S. FDA Class II, Health Canada Class II or Class III, and/or European Union Class II Medical Devices; (2) film, overwrap and/or product packaging that is considered a part or component of one of the aforementioned Medical Devices; (3) packaging in direct contact with a pharmaceutical active ingredient and/or dosage form that is intended for inhalation, injection, intravenous, nasal, ophthalmic (eye), digestive, or topical (skin) administration; (4) tobacco related products and applications; (5) electronic cigarettes and similar devices; and (6) pressure pipe or fittings that are considered a part or component of a nuclear reactor.
- (iii) Additionally, the product(s) may not be used in: (1) U.S. FDA Class III, Health Canada Class IV, and/or European Class III Medical Devices; (2) applications involving permanent implantation into the body; (3) life-sustaining medical applications; and (4) lead, asbestos or MTBE related applications.

All references to U.S. FDA, Health Canada, and European Union regulations include another country's equivalent regulatory classification.

Users should review the applicable Material Safety Data Sheet before handling the product.

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