



Lupolen 5021 DX

Polyethylene, High Density

Product Description

Lupolen 5021 DX is a high density polyethylene (HDPE) resin used in a wide range of processing methods. Typical customer applications for small blow molding include packaging for consumer goods, surfactants, toys and engineering parts. It exhibits good chemical resistance and good ESCR as well as good flowability and organoleptic properties. *Lupolen* 5021 DX is delivered in pellet form, contains antioxidants and has a broad molecular weight distribution. *Lupolen* 5021 DX is not intended for use in medical and pharmaceutical applications.

Product Characteristics

Status	Commercial: Active
Test Method used	ISO
Availability	Europe, Asia-Pacific, Australia/NZ, Africa-Middle East, Latin America
Processing Methods	Extrusion Blow Molding
Features	Antioxidant, Good Chemical Resistance, High ESCR (Environmental Stress Cracking Resistance), Good Flow, Good Organoleptic Properties
Typical Customer Applications	Automotive Parts, Blow Moulding Applications, Bottles and vials, Bottles For Consumer Goods, Bottles for Industrial Use, Consumer Packaging

Typical Properties	Method	Value	Unit
Physical			
Density	ISO 1183	0.950	g/cm ³
Melt flow rate (MFR)	ISO 1133		
(190°C/2.16kg)		0.25	g/10 min
(190°C/21.6kg)		22	g/10 min
(190°C/5.0kg)		1.0	g/10 min
Bulk density	ISO 60	>0.500	g/cm ³
FNCT (3.5 MPa, 2% Arkopal N100, 80°C)	ISO 16770	10	h
Mechanical			
Tensile Modulus	ISO 527-1, -2	1000	MPa
Tensile Stress at Yield	ISO 527-1, -2	25.0	MPa
Tensile Strain at Yield	ISO 527-1, -2	9.0	%
Tensile Impact Strength	ISO 8256	100	kJ/m ²
Note: notched, -30°C			
Impact			
Charpy notched impact strength (-30 °C, Type 1, Edgewise, Notch A)	ISO 179	6,0	kJ/m ²
Hardness			
Ball indentation hardness (H 132/30)	ISO 2039-1	45.0	MPa
Thermal			
Vicat softening temperature	ISO 306		
(B50 (50°C/h 50N))		78.0	°C
(A50 (50°C/h 10N))		128	°C

Melting Temperature	ISO 3146	131	°C
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Additional Properties

IMDS Nr. 20190884, recommended processing temperature 170 - 200°C

Notes

Typical properties; not to be construed as specifications.

Further Information

Lupolen 5021 DX

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. We recommend the conveying system used is equipped with adequate filters, is operated and maintained that no leak develops and adequate grounding exists at all times.

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 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 are involved in processing the resin.

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. In burning the resin contributes high heat and may generate a dense black smoke. Starting 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.

Storage:

The resin is packed in 25 kg bags or in bulk containers protecting it from contamination. If it is stored under adverse 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. Unfavourable storage conditions may also intensify the resin's slight characteristic odour.

The resin is subjected to degradation by ultra-violet radiations or by high storage temperatures. Therefore the resin must be protected from direct sunlight, temperatures above 40°C and high atmospheric humidity during storage. The resin can be stored over a period of more than 6 month without significant changes in the specified properties, appropriate storage conditions provided. Higher storage temperatures 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. The data do not relieve the customer from his obligation to control the resin upon arrival and to complain about faults. 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.