LDPE - Preliminary Product Data Sheet

sasol
reaching new frontiers

LT388

Date of issue: June 2006
Information
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PERFECT Packaging

Sasol Polymers
Polythene Business

Injection / blow moulding

Melt Index: 2.0 **Density:** 0.922

Features	Additives	Applications
Tubular Resin Flexible Moderate ESCR	Antioxidant	Flexible fittings Dispensing containers Small containers

Performance properties - LT388

Test	Value	Unit	Test method	Based on
MFI (190°C/2.16kg)	2.0	g/10min	PTM 058	ASTM D1238
Nominal density	0.922	g/cm^3	PTM 002	ASTM D1505
Tensile strength at yield	11	MPa	PTM 006	ASTM D638[1)]
Tensile strength at break	12	MPa	PTM 006	ASTM D638[1)]
Elongation at break	378	%	PTM 006	ASTM D638[1)]
Flexural Modulus	357	MPa	PTM 008	ASTM D790
Young's Modulus	135	MPa	PTM 006	ASTM D638[1)]
ESCR F50	0.2	hr	PTM 001	ASTM D1693[2)]
Shore D hardness	53	ShoreD	PTM 079	ASTM D2240
Vicat softening temperature	96	°C	PTM 080	ASTM D1525

[1)] 500mm/min jaw separation
[2)] 100% Igepal C0630

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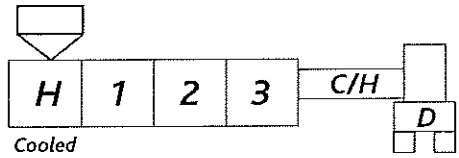
Processing

Processing conditions will depend on the type of machine and the mould design. Typical melt temperatures are 240°C - 260°C for injection moulding, and 150°C - 160°C for blow moulding and extrusion.

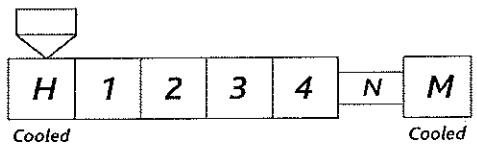
LT388 Extrusion & Blow Moulding

°C	H	1	2	3	C/H	D
200						
180						
160						
140						
120						
100						



LT388 Injection Moulding

°C	H	1	2	3	4	N	M
240							
220							
200							
180							
160							
140							



Presentation

Supplied in pellet form in 25kg bags

Food Packaging

This material complies with F&DA regulation 177.1520 when used unmodified and according to good manufacturing practices for food contact applications. Accordingly, this material may be used in all food contact applications (except holding foods during cooking)

Conveying

Conveying equipment should be designed to prevent accumulation of fines and dust particles that are contained in all polyethylene resins. These fines and dust particles can, under certain conditions, pose an explosion hazard. We recommend that the conveying system used:

1. be equipped with adequate filters
2. is operated and maintained in such a manner to ensure no leaks develop
3. that adequate grounding exists at all times

We further recommend that good housekeeping be practised throughout the facility.

Storage

As ultraviolet light may cause a change in the material, all resins should be protected from direct sunlight during storage.

Handling

Workers should be protected from the possibility of skin or eye contact with molten polymer. Safety glasses are suggested as a minimal protection to prevent possible mechanical or thermal injury to the eyes. Fabrication areas should be ventilated to carry away fumes or vapours.

LLDPE - Product Data Sheet

HR 411 LLDPE

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Sasol Polymers
Polythene Business

Rotational moulding/injection moulding

Melt index: 3.5 Density: 0.939

Features	Additives	Applications
High rigidity *Excellent impact strength* *Excellent chemical resistance* *Good ESCR* *Tough and abrasion resistant* *Colourable* *Hexene copolymer*	*Antioxidant*	*Large mouldings* *Thick walled containers* *Articles for indoor use*

Performance properties - HR 411

Test	Value	Unit	Test method
MFI (190°C/2.16kg)	*3.5*	*g/10min*	*ASTM D1238*
Nominal density	*0.939*	*g/cm^3*	*ASTM D1505*
Tensile strength at yield	*19*	*MPa*	*ASTM D638 [1)]*
Tensile strength at break	*24*	*MPa*	*ASTM D638 [1)]*
Elongation at break	*820*	*%*	*ASTM D638 [1)]*
Flexural modulus	*846*	*MPa*	*ASTM D790*
ESCR F_{50}	*>500*	*hr*	*ASTM D1693 [2)]*
Impact energy at -40°C	*35*	*J/mm*	*ASTM D3029 [3)]*
Vicat softening temperature	*121*	*°C*	*ASTM D1525*
Shore D hardness	*61*	*Shore D*	*ASTM D2240*

[1)] Crosshead speed 50mm/min
[2)] 100% Igepal C0630
[3)] Tested on rotomoulded product

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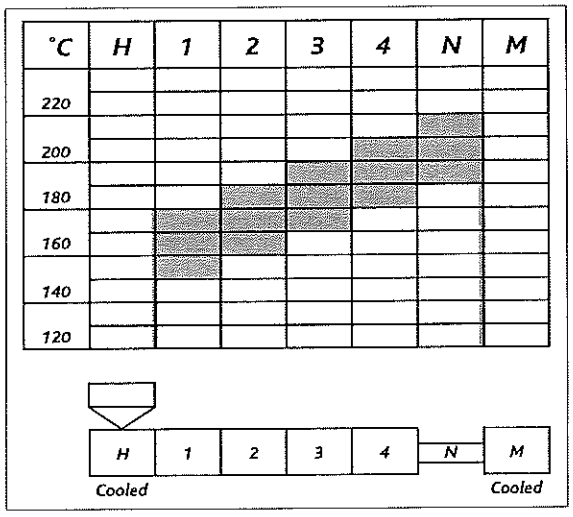
Processing (Rotomoulding)

An air temperature of 270°C to 300°C is recommended for processing of HR 411. Temperatures above 300°C should be avoided as this would narrow the processing window considerably and could result in poor physical properties.

Processing (Injection moulding)

HR 411 has a medium melt viscosity making it unsuitable for moulds with long flow paths. Typical melt temperatures would be 200°C - 280°C. Parts can be demoulded at relatively high temperatures due to the material's high melting point and rigidity.

Typical temperature profile (Injection moulding)



Presentation

Supplied in pellet form packed in 25kg bags. Grinding of pellets is required to make it suitable for rotomoulding.

Handling

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 possible mechanical or thermal injury to the eyes. Fabrication areas should be ventilated to carry away fumes or vapours.

Combustibility

Polyethylene resins will burn when supplied with adequate heat and oxygen. They should be handled and stored away from contact with direct flames and/or other ignition sources. In burning, polyethylene resins contribute high heat and may generate a dense black smoke. Fires can be extinguished by conventional means, with water and water mist preferred. In enclosed areas, fire fighters should be provided with self-contained breathing apparatus.

Pigmentation (Rotomoulding)

For colouring purposes inorganic pigments should be added at the lowest possible concentration and mixed in using a high speed mixer or a tumble blender, prior to moulding. Pigment preparations should contain only minimal amounts of dispersants.

Food Packaging

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Conveying

Conveying equipment should be designed to prevent accumulation of fines and dust particles that are contained in all polyethylene resins. These fines and dust particles can, under certain conditions, pose an explosion hazard. We recommend the conveying system used:

1. be equipped with adequate filters;
2. is operated and maintained in such a manner to ensure no leaks develop;
3. that adequate grounding exists at all times.

We further recommend good housekeeping be practised throughout the facility.

Storage

As ultraviolet light may cause a change in the material, all resins should be protected from direct sunlight during storage.