



Sasol Polymers LLDPE: HR411 Density: 0.939 g/cm³ Melt index: 3.5g/10min

Features

- High rigidity
- Excellent impact strength
- Excellent chemical resistance
- Good ESCR
- Tough and abrasion resistant
- Colourable
- Hexene copolymer

Applications

- Large mouldings
- Thick walled containers
- Articles for indoor use

Additives

- Antioxidant

Material properties (typical values not to be construed as specifications)

	Value	Unit	Test method	Based on
MFI (190°C/2.16kg)	3.5	g/10min	PTM058	ASTM D1238
Nominal density	0.939	g/cm ³	PTM002	ASTM D1505
Tensile strength at yield	19	MPa	PTM006	ASTM D638 ¹⁾
Tensile strength at break	24	MPa	PTM006	ASTM D638 ¹⁾
Elongation at break	820	%	PTM006	ASTM D638 ¹⁾
Flexural modulus	846	MPa	PTM008	ASTM D790
ESCR F ₅₀	>500	hr	PTM001	ASTM D1693 ²⁾
Impact energy at -40°C	35	J/mm	PTM044	ASTM D3029 ³⁾
Shore D hardness	61	Shore D	PTM087	ASTM D2240
Vicat softening temperature	121	°C	PTM086	ASTM D1525

1) Crosshead speed 50mm/min

2) 100% Igepal C0630

3) Tested on 5mm rotomoulded product





Typical processing conditions

Injection moulding

°C	H	1	2	3	4	N	M
220							
200							
180							
160							
140							
120							



Processing (Rotational Moulding)

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.

Pigmentation for rotational moulded parts

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.

Packaging

Sasol Polymers polyolefin resins are supplied in pellet form packed in 25kg bags. Alternative packaging modes for polypropylene resins are available for selected grades.

Handling

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

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

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

Sasol Polymers further recommend that good housekeeping be practised throughout the manufacturing facility. Polymer pellets may pose a slippage hazard if spilled.

Storage

As ultraviolet light may cause a change in the material properties, all polyolefin resins should be protected from direct sunlight during storage. Under cool, dry, dark conditions Sasol Polymers polyolefin resins are expected to maintain their original material and processing properties for at least 18 months.

