LLDPE - Product Data Sheet

HR 486/06 LLDPE

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Rotational moulding

Melt index: 3.5 Density: 0.939

Features

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

Additives

Antioxidant
UV stabiliser
Internal mould release

Applications

Large agricultural tanks
Large industrial tanks
Solar panels
Outdoor use

Performance properties - HR 486/06

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
Bulk density	330	kg/m^3	ASTM D1895
Particle size	90% < 600	µm	ASTM D1921
Tensile strength at yield	19	MPa	ASTM D638 [1)]
Tensile strength at break	24	MPa	ASTM D638 [1)]
Elongation at break	830	%	ASTM D638 [1)]
Flexural modulus	837	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	120	˚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

ARMSA MEMBER

Processing

An air temperature of 270˚C to 300˚C is recommended for rotational moulding of HR 486/06. Temperatures above 300˚C are not advisable as this would narrow the processing window considerably and could result in poor physical properties. Due to the material's excellent heat resistance it has very good colour stability even in overcure conditions.

Pigmentation

For colouring purposes inorganic pigments are recommended. Any dry additive addition to the powder before rotomoulding should be done at the lowest possible concentration; mixing should be carried out in a high speed mixer or a tumble blender, prior to moulding. Pigment preparations should contain only minimal amounts of dispersants. The material has been formulated to reduce or eliminate pigment plate-out during moulding.

Presentation

Supplied in powder form packed 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 food during cooking).

Explosion Hazard

While care is taken to keep the amount of sub 150µm particles to a minimum, some fines will always be present in the powder. These fines can, under certain conditions, pose an explosion hazard. We recommend that the processing equipment has adequate grounding at all times and 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 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.