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MD-3840UA MEDIUM DENSITY POLYETHYLENE

General Informations:

MD3840UA is a linear medium density polyethylene (MDPE) with butene copolymer. This polymer has narrow molecular weight distribution. MD3840UA is used as a rotational molding grade.This product has following characteristics:

*Good impact strength
*Excellent external and internal surface finish
*Whiteness
*Good stress cracking resistance
*UV stabilized

Applications:

*Rotational moulded items with good stiffness
*Septic tanks
*Ordinary containers

Specifications:

Property	Unit	Value	Test Method
Melting point	$_{o}C$	131	ASTM D 2117
MFI (190$_{o}$ C/ 2.16kg)	gr/10 Min.	4	ASTM D 1238 - 7
Density	gr/cm$_{3}$	0.938	ASTM D 1505 - 68
Vicat softening point	$_{o}C$	Min. 115	ASTM D 1525
Tensile strength @ yeild	MPa	Min. 15	ASTM D 638 - 72
Elongation @ break	%	Min. 900	ASTM D 638
Charpy impact strength	KJ/m$_{2}$	Min. 18	ASTM D 256
Flexural modulus	MPa	650	ASTM D 790
Hardness	Shore D	65	ASTM D 2240
Thermal conductivity	W/m$_{2}$	0.48	ASTM D 177
C.O.L.E	$_{o}C$	2x10$_{-4}$	ASTM D 696-91
ESCR (F50 , 23$_{o}$C)	hr	400	ASTM D 1693

The above data are typical laboratory average . They are intended to serve as guides only.

MD-3840UA MEDIUM DENSITY POLYETHYLENE

Storage:

MD3840UA should be stored in dry and dust free environment at temperature below 50 °C. Exposure to direct sun light should be avoided as this may lead to product deterioration.

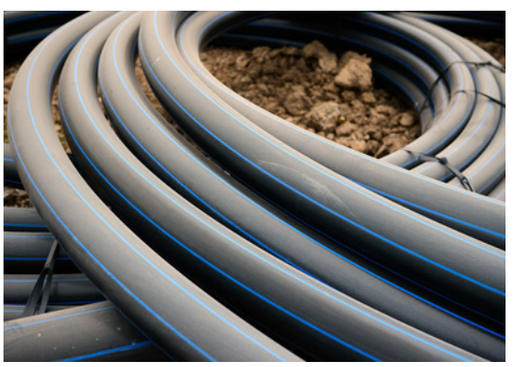
Recycling & Environment :

End products made from this polymer can be recycled , incinerated or disposed of in landfill without detriment to the environment.With recycling , clean waste can be re-used for many less demanded applications.

Alternatively , with properly controlled and efficient incineration , preferably linked to heat or other energy recovery system, polyethylene's high calorific value will assist the combustion of municipal solid waste .

In landfill sites MD3840UA does not degrade to produce voids , and does not emit dangerous gases or contribute to ground water pollution .

If pigments or other additives are incorporated into this product at the processing stage, the above statements may not be fully valid .



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HBM 5510

High Density Polyethylene

Product Description

HBM 5510 is a high density polyethylene, specially developed for large parts blow molding. This grade, which is produced by 1-hexene as a co-monomer, offers high stiffness, good process-ability, excellent parison melt strength and good ESCR. HBM 5510 has been manufactured under Basell license.

General Information

Status	Commercial: Active	
Application	Large Parts Blow Molding - Standard and Lightweight Jerry Cans- Open Top Drums (Up to 110 lit).	
Form(s)	Pellet	
Attribute	Good ESCR Good Stiffness	Good Process-ability
Additives	Antioxidant: Yes Processing Aid: No	Antiblock: No Slip Agent: No

Typical Properties	Typical Value [1]	Unit	Test Method
Physical			
High Load Melt Flow Index (190°C/ 21.6 kg)	10	g/10 min	ISO 1133
Melt Flow Index (190°C/ 5 kg)	0.50	g/10 min	ISO 1133
Density [2]	0.955	g/cm^3	ISO 1183
Bulk Density	> 0.50	g/cm^3	ISO 60
Mechanical [3]			
Tensile Modulus of Elasticity	1000	MPa	ISO 527-1,2
Flexural Modulus - 1% Secant	1000	MPa	ASTM D790
Tensile Stress at Yield	27	MPa	ISO 527-1,2
Tensile Strain at Yield	8	%	ISO 527-1,2
Tensile Stress at Break	43	MPa	ISO 527-1,2
Ball Indentation Hardness	49	MPa	ISO 2039-1
ESCR F_{50} (100% Igepal, Method B)	110	hrs	ASTM D1693

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Product Data Sheet

HFI 5110

High Density Polyethylene

Product Description

HFI 5110 is a high molecular weight, high-density polyethylene with broad molecular weight distribution and 1-hexene as a co-monomer, specially developed for producing thin films with excellent strength and rigidity. This product is suitable for manufacturing of high strength grocery sacks, shopping bags and high quality thin films for uni/multi-wall packaging. Films produced with this grade can be readily treated and printed to give high quality graphics. HFI 5110 has been manufactured under Basell license.

General Information

Status	Commercial: Active	
Application	Blown film extrusion- Uni/multi wall packaging- High quality thin films- Shopping bags- High strength grocery sacks.	
Form(s)	Pellet	
Attribute	High tear resistance High melt stability	High quality graphic printing
Additives	Antioxidant: Yes Zinc Stearate: Yes	Antiblock: No Slip Agent: No

Typical Properties	Typical Value [1]	Unit	Test Method
Physical			
High Load Melt Flow Index (190°C/ 21.6 kg)	10	g/10 min	ISO 1133
Density [2]	0.951	g/cm³	ISO 1183
Mechanical [3]			
Tensile Modulus of Elasticity	1050	MPa	ISO 527-1,2
Tensile Strength (MD)	55	MPa	ISO 527-1,3
Tensile Strength (TD)	55	MPa	ISO 527-1,3
Tensile Strain at Break (MD)	580	%	ISO 527-1,3
Tensile Strain at Break (TD)	620	%	ISO 527-1,3
Tensile Stress at Yield	26	MPa	ISO 527-1,3

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HDPE-7000F

High Density Polyethylene Data Sheet (HDPE)

Product Name: 7000F (Film Grade)

Grade: Extrusion

Characteristics and Uses:

Excellent mechanical strength and high stiffness excellent process ability (at high speed) Tissue-like film, garment/grocery/merchandise bags, disposal waste bags, counter bags, grocery sacks, trash bags, etc.

Typical Physical Properties

Properties	Method	Unit	Value
Melt Flow Rate(2.16kg)	ISO 1133	g/10min	0.04
Density	ISO 1183	Kg/m3	952
Tensile Stress at Yield	ASTM D 638	Kg/cm2	-
Tensile Strength at Break	ASTM D 638	Kg/cm2	390
Elongation at Break	ASTM D 638	%	>500
Stress Cracking Resistance (80°C)	ASTM D 1693	hr	400
Melting Temperature	ASTM D 3418	°C	131
Izod Notched (23°C)	ASTM D 256	Kg.cm/cm	30

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Product Data Sheet

HEX 4460 PE80+

High Density Polyethylene

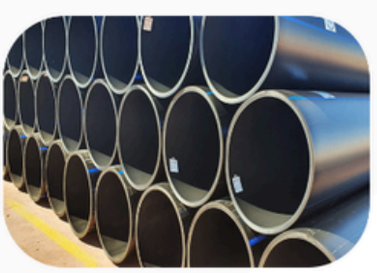
Product Description

HEX 4460 PE80+ is a high molecular weight, high-density polyethylene (HDPE) with high melt viscosity for extrusion. This grade, which is produced by 1-hexene co-monomer, is classified as PE 80+ and provides excellent stress crack resistance properties (ESCR) combined with very good long-term hydrostatic strength and good process-ability.

General Information

Status	Commercial: Active	
Application	Drinking Water Pipe, Drainage Pipe, Plumbing	
Form(s)	Pellet	
Attribute	Outstanding ESCR	Good Resistance to SCG & RCP
	Good Creep Strength	Good Process-ability
	Good Chemical Resistance	Very Good Low Temp. Impact Resistance
Additives	Processing Aid: No	Antiblock: No
	Antioxidant: Yes	Slip Agent: No

Typical Properties	Typical Value [1]	Unit	Test Method
Physical			
High Load Melt Flow Index (190°C/ 21.6 kg)	6.0	g/10 min	ISO 1133
Melt Flow Index (190°C/ 5.0 kg)	0.33	g/10 min	ISO 1133
Density [2]	0.944	g/cm³	ISO 1183
Mechanical [3]			
Tensile Strength at Yield	25	MPa	ISO 527-1, -2
Elongation at Yield	11	%	ISO 527-1, -2
Elongation at Break	> 1000	%	ISO 527-1, -2
Tensile Strength at Break	40	MPa	ISO 527-1, -2
Tensile Modulus of Elasticity	700	MPa	ISO 527-1, -2
Flexural Modulus - 1% Secant	> 1000	MPa	ASTM D790
ESCR F_{10} (10% Igepal, Method B)	> 1000	hrs	ASTM D1693
FNCT (3.5 MPa, 2% Arkopal N100, 80°C)	> 120	hrs	ISO 16770



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High Density Polyethylene BL3 (HF4760)

Polyethylene (BL3 (HF4760) is a heavy polyethylene copolymer with normal butene. BL3 material with hardness and stiffness and impact resistance and good ESCR for the production of pneumaticparts such as detergents and medicines and all bottles and small containers. (Lessthan 5 liters) is suitable

Producer:
Jam Petrochemical Company

Physical Properties	Metric	English	Comments
Density	0.954 g/cc	0.0345 lb/inÂ³	ISO 1183
Environmental Stress Crack Resistance	5.0 hour @Pressure 3.50 MPa	5.0 hour @Pressure 508 psi	ISO CD 16770
Melt Flow	1.2 g/10 min @Load 5.00 kg, Temperature 190 Â°C	1.2 g/10 min @Load 11.0 lb, Temperature 374 Â°F	ISO 1133
	23 g/10 min @Load 21.6 kg, Temperature 190 Â°C	23 g/10 min @Load 47.6 lb, Temperature 374 Â°F	ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	62	62	ISO 868
Tensile Stress	32.0 MPa	4640 psi	at Break; ISO 527
Tensile Strength, Yield	26.0 MPa	3770 psi	ISO 527
Elongation at Break	>= 600 %	>= 600 %	ISO 527
Elongation at Yield	10 %	10 %	ISO 527
Tensile Modulus	1.25 GPa	181 ksi	ISO 527
Charpy Impact, Notched	1.00 J/cmÂ²	4.76 ft-lb/inÂ²	ISO 179/1eA

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Technical Datasheet HD62N07

Product Description:

HD 62N07 is a injection-moulding grade high density polyethylene. Good impact strength, easy processing, high rigidity and Uv resistance make it especially suitable for usage in crates, pallets, seats and house holdware.

Applications:

Injection Moulding Grade for Pallets, Boxes and Crates.

Typical data:

Property	Test method	Unit	value
Melt Index	D1238	gr/10Min	7
Density	D1505	g/cc	0.962
F/E Ratio	ASTM D 1238	-	<30
Volatiles	ASTM D 1525	%wt	<0.05
Tensile Stress @ Yield	ASTM D 638	Mpa	30
Tensile Stress @ Break	ASTM D 638	Mpa	12
Elongation @ Break	ASTM D 638	%	850
Flexural	STM D 790	Mpa	1500
Izod Impact Resistance	ASTM D 256	J/m	55
Contamination	BASEL MTM-17064 E	Ratio	<40

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HDPE EX5 (9450F) Technical Datasheet

Product Description:

"EX5" (9450 F) is a high molecular weight high density polyethylene with 1-Butene as co monomer. It combines good stiffness and tenacity.

Applications:

Film extrusion

Counter bag, carrier bag

Wrapping films

Typical data:

Property	Test method	Unit	value
Mass density (23ºC)	ISO 1183	g/cm3	0.949
Melt Flow Rate (190ºC/5kg)	ISO 1133	g/10min	0.28
Melt Flow Rate (190ºC/21.6kg)	ISO 1133	g/10min	8
Stress at yield	ISO 527	MPa	24
Stress at Break	ISO 527	MPa	35
Softening Temperature	ISO 306	ºC	75
Brittle Temperature	ASTM D746-72	ºC	< - 80
Shore D hardness	ISO 868	--	60
Application Properties**			
Max. Tensile strength MD/TD	ISO 527	MPa	45/40
Tear strength MD/TD	ISO 6383-2	mN	200/450
Max. elongation MD/TD	ISO 527	%	400/450
Dart Drop Impact	ASTM D1709	g	220

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Special Characteristics : InnoPlus LD2420K is produced by high pressure tubular process, a technology licensed by LyondellBasell. This grade has well balance property of optical property, mechanical property and processability.

Typical Applications : InnoPlus LD2420K is designed for variety of film application such as general purpose film, shrink film, zip bag and food packaging film. In addition, LD2420K is very suitable for liner cap, drinking water cap and vegetable oil cap and foam application.

Additives : No Slip and No Antiblock

Typical Properties :

Physical Properties	Metric	English	Comments
Density	0.924 g/cc	0.0334 lb/inÂ³	
Water Absorption	0.010 %	0.010 %	
Moisture Absorption at Equilibrium	0.010 %	0.010 %	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	11.0 MPa	1600 psi	
Elongation at Break	>= 50 %	>= 50 %	
Elongation at Yield	14.5 %	14.5 %	
Tensile Modulus	0.260 GPa	37.7 ksi	

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