P6006 Black

HDPE for Pipe Extrusion

P6006 is a black High Density Polyethylene (HDPE) resin specifically designed for Pipe Extrusion.
It provides excellent stress crack resistance properties (ESCR) combined with very good long term hydrostatic strength.

Typical Applications

SABIC HDPE P6006 (black) is a grade, which has a high density (class MRS 10 - PE 100) and a bimodal distribution of the molecular mass. An universal grade for pipe extrusion which, due to a keen combination of properties, is particularly suitable for drinking water, gas distribution and waste water pipes. It is also used for the manufacture of chemical apparatus and containers.

Polymer Properties	Unit	Values	Test Method
Melt Flow Rate (MFR)	g/10 min.		ISO 1133
(190°C/5.0 kg)		0.22	
(190°C/21.6 kg)		6.4	
Carbon Black Content	%	2.25	ISO 6964
Density (1)	kg/m^3	959	ISO 1183
Mechanical Properties (1) (2)			
Tensile Test (3) (4)			
Stress at Yield	Mpa	23	ISO 527-2
Strain at Yield	%	9	
Tensile Modulus	Mpa	900	
Charpy Impact Notched	kJ/m^2	26	ISO 179
at 23 °C	kJ/m^2	13	
at -30 °C			
Hardness Shore D	-	63	ISO 868
Thermal Properties			
Vicat Softening Temperature (1) (2) at 50 N (VST/B)	°C	74	ISO 306
DSC Test (Melting Point)	°C	124-128	DIN 53765
OIT 210 °C	min	> 20	EN 728

(1) Compression moulding conditions of test specimen (according to ISO 293) : moulding temp: 160 °C, cooling rate: 40 °C/min
(2) Conditioning of test specimen: temp. 23 °C, relative humidity 50 %, 24 hours
(3) Speed of testing: 50 mm/min
(4) Test specimen according to ISO 527-2 type 1BA, thickness 2 mm

Processing Conditions

Recommended melt temperatures: 190-220 °C

Food Regulations

Certificate is available on request.

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GLOBICHEM

HIGH DENSITY POLYETHYLENE 6006 (PE 100, BLACK)

Producer: Saudi Basic Industries Corporation (Sabic) /Saudi Arabia

Description: **P6006** is a black High Density Polyethylene **(HDPE)** resin specifically designed for Pipe Extrusion. It provides excellent stress crack resistance properties (ESCR) combined with very good long term hydrostatic strength.

Typical Applications: **SABIC HDPE P6006** (black) is a grade, which has a high density (class MRS10 - PE 100) and a bimodal distribution of the molecular mass. An universal grade for pipe extrusion which, due to a keen combination of properties, is particularly suitable for drinking water, gas distribution and waste water pipes. It is also used for the manufacture of chemical apparatus and containers.

DESCRIPTION OF PROPERTIES	UNIT	VALUE [1]	TEST METHOD
Polymer Properties			
Melt Flow Rate (MFR)	g/10 min.		ISO 1133
(190^{0}C/5.0 kg)		0.22	
(190^{0}C/21.6 kg)		6.4	
Carbon Black Content	%	2.25	ISO 6964
Density [1]	kg/m^3	959	ISO 1183
Mechanical Properties [1] [2]			
Tensile Test [3] [4]			
Stress at Yield	Mpa	23	
Strain at Yield	%	9	ISO 527-2
Tensile Modulus	Mpa	900	
Charpy Impact Notched			
at 23^{0}C	kJ/m^2	26	ISO 179
at -30^{0}C	kJ/m^2	13	
Hardness Shore D	-	63	ISO 868
Thermal Properties			
Vicat Softening Temperature [1] [2] at 50 N (VST/B)	^{0}C	74	ISO 306
DSC Test (Melting Point)	^{0}C	124-128	DIN 53765
OIT 210^{0}C	min	>20	EN 728

[1] - Compression moulding conditions of test specimen (according to ISO 293): moulding temp: 160 °C, cooling rate: 40 °C/min

[2] - Conditioning of test specimen: temp. 23 °C, relative humidity 50 %, 24 hours

[3] - Speed of testing: 50 mm/min

[4] - Test specimen according to ISO 527-2 type 1BA, thickness 2 mm

Processing Conditions : Recommended melt temperatures: 190-220^{0}C

Food Regulations: Certificate is avilable on request

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EMERAUDE
PEOPLE DEDICATED TO POLYMERS

Product Datasheet

For more information and technical assistance, please contact:
EMERAUDE POLYMERS INC.
Email: welcome@emeraude-international.com
www.emeraude-international.com

HDPE EMERAUDE HB0354E Series

Product Description

HB0354E is a high density polyethylene blow molding grade. It provides good stiffness and high stress crack resistance.

HB0354E	With antistatic additive
HB0354ES	Without antistatic additive

Typical Applications

Blow molding application for Food packaging, Pharmaceutical packaging, household and industrial containers.

Technical properties

General properties and typical values	English	SI	Test Method
Density	0.954 g/cm^3	0.954 g/cm^3	ASTM D4883
Melt Index, 190° C/2.16 kg	0.30 g/10 min	0.30 g/10 min	ASTM D1238
Tensile Strength at Yield	4100 psi	28 MPa	ASTM D638
Flexural Modulus	190000 psi	1300 MPa	ASTM D790
ESCR 100% Igepal	30 hr	30 hr	ASTM D1693
Tensile Impact Strength	90 ft-lb/in^2	190 kJ/m^2	ASTM D1822
Vicat Softening Temperature	261 °F	127 °C	ASTM D1525

The nominal properties reported herein are typical of the product, but do not reflect normal testing variance and therefore should not be used for specification purposes. Values are rounded.

Storage and handling

Emeraude HDPE HB0354E resin is considered stable under normal ambient and anticipated storage and handling conditions. This material should be stored in a dry cool place with adequate ventilation and protected from UV-light at temperature below 50°C. Please refer to our Material Safety Data Sheet to get additional information.

Version 2.2– latest revision: June, 2015

ExxonMobil

ExxonMobil™ HDPE HTA 001HD

High Density Polyethylene (HMW) Resin

Product Description

HTA 001HD is a high molecular weight HDPE film grade. Films made from HTA 001HD exhibit excellent impact and toughness properties as well as high stiffness.

General

Availability [1]	▪ Africa & Middle East	▪ Asia Pacific	
Additive	▪ Antiblock: No	▪ Slip: No	▪ Thermal Stabilizer: Yes
Applications	▪ Blown Film ▪ Grocery Sacks ▪ Liners	▪ Produce Bags ▪ Produce Bags On A Roll ▪ Refuse Bags	▪ Thin Gauged Consumer Bags ▪ Trash Can Liners
Revision Date	▪ 05/01/2014		

Resin Properties	Typical Value (English)	Typical Value (SI)	Test Method
Density	0.952 g/cm³	0.952 g/cm³	ExxonMobil Method
High Load Melt Index (190°C/21.6 kg)	9.0 g/10 min	9.0 g/10 min	ASTM D1238
Melt Mass-Flow Rate (MFR) (190°C/5.0 kg)	0.32 g/10 min	0.32 g/10 min	ASTM D1238

Thermal	Typical Value (English)	Typical Value (SI)	Test Method
Vicat Softening Temperature	259 °F	126 °C	ASTM D1525

Film Properties	Typical Value (English)	Typical Value (SI)	Test Method
Tensile Strength at Yield MD	5900 psi	41 MPa	ASTM D882
Tensile Strength at Yield TD	4400 psi	30 MPa	ASTM D882
Tensile Strength at Break MD	8600 psi	60 MPa	ASTM D882
Tensile Strength at Break TD	8100 psi	60 MPa	ASTM D882
Elongation at Break MD	220 %	220 %	ASTM D882
Elongation at Break TD	430 %	430 %	ASTM D882
Secant Modulus MD - 1% Secant	170000 psi	1200 MPa	ASTM D882
Secant Modulus TD - 1% Secant	170000 psi	1200 MPa	ASTM D882
Dart Drop Impact	190 g	190 g	ASTM D1709A
Elmendorf Tear Strength MD	8 g	8 g	ASTM D1922
Elmendorf Tear Strength TD	30 g	30 g	ASTM D1922

Legal Statement

Contact your ExxonMobil Chemical Customer Service Representative for potential food contact application compliance (e.g. FDA, EU, HPFB).

This product is not intended for use in medical applications and should not be used in any such applications.

Processing Statement

The film properties have been measured on 15 µm (0.59 mil) thick films with a blow-up ratio of 4 : 1 and a frostline height of 9 x die diameter (die diameter/ gap: 120mm/1.5mm (4.7 in/0.06 in); 215°C (419°F) melt temperature; 70 kg/hr (154 lb/hr) output).

Notes

Typical properties: these are not to be construed as specifications.

[1] Product may not be available in one or more countries in the identified Availability regions. Please contact your Sales Representative for complete Country Availability.

For more information and technical assistance contact:

Chevron Phillips Chemical Company LP
P.O. Box 4910
The Woodlands, TX 77387-4910
800.231.1212

MARLEX® POLYETHYLENE

PREMIUM EXTRUSION AND RIGID PACKAGING RESINS

Marlex® HHM 5502BN

HIGH DENSITY POLYETHYLENE

This high molecular weight, hexene copolymer is tailored for lightweight blow molded containers that:

- Require excellent stiffness
- Require exceptional processability
- Are durable and recyclable for sustainability

This resin meets these specifications:

- ASTM D4976 - PE 235
- FDA 21 CFR 177.1520(c) 3.2a, use conditions B through H per 21 CFR 176.170(c)
  Listed in the Drug Master File

Typical blow molded applications for HHM 5502BN include:

- Ice chests and coolers
- Household and industrial chemical containers
- Food packaging
- Pharmaceuticals

NOMINAL PHYSICAL PROPERTIES[1]	English	SI	Method
Density	---	0.955 g/cm^3	ASTM D1505
Melt Index, 190/2.16	---	0. 35 g/10 min	ASTM D1238
Tensile Strength at Yield, 2 in/min, Type IV bar	4,000 psi	27 MPa	ASTM D638
Elongation at Break, 2 in/min, Type IV bar	600%	600%	ASTM D638
Flexural Modulus, Tangent - 16:1 span:depth, 0.5 in/min	200,000 psi	1,370 MPa	ASTM D790
ESCR, Condition B (100% Igepal), F_{50}	35 h	35 h	ASTM D1693
Brittleness Temperature, Type A, Type I specimen	<-103°F	<-75°C	ASTM D746

1. The nominal properties reported herein are typical of the product, but do not reflect normal testing variance and therefore should not be used for specification purposes. Values are rounded. The physical properties were determined on compression molded specimens that were prepared in accordance with Procedure C of ASTM D4703, Annex A1.

Revision Date May, 2007

Another quality product from Chevron Phillips Chemical Company LP The Woodlands, Texas

LOTTE CHEMICAL

7000F

HIGH DENSITY POLYETHYLENE

General Information

Description

- 7000F is manufactured to be processed in conventional blown film equipment by CSTR Slurry process technology.
- Thanks to Bi-modal design of molecular composition, 7000F offer both excellent processability and superior mechanical properties.

Additives

- Antioxidant

Applications

- Shopping Bag, Garbage Bag
- Industrial/ General Packing Film

Physical Properties[1]

Properties	Test Method	Nominal Value			
Melt Index, at 190℃/2.16kg	ASTM D 1238	0.035	g/10min		
Density	ASTM D 1505	0.956	g/cm^3		
Tensile Strength at Break	ASTM D 638	320	kg/cm^2	31.4	MPa
Elongation at Break	ASTM D 638	> 500	%		
Flexural Modulus	ASTM D 790	10,000	kg/cm^2		
IZOD Impact Strength, at 23℃	ASTM D 256	NB	kg·cm/cm		
VICAT Softening Point	ASTM D 1525	124	℃		
ESCR	ASTM D 1693	> 1,000	F50 Hours		

Note

ISO 9001, 14001, /TS 16949

[1] Physical Properties : these are not to be construed as specifications

OPELENE

OP0035BM2

High Density Polyethylene (HDPE)

Description:

OPELENE OP0035BM2 is a gas phase, high molecular weight, ethylene-hexene copolymer tailored for lightweight blow molded parts that require excellent stiffness to ESCR ratio, good impact resistance, durability and recyclability.

Typical Applications: Oil bottles; Household and Industrial Chemical Containers; Personal Care Product Containers.

NOMINAL PHYSICAL PROPERTIES	English	SI	Method
Density	---	0.954 g/cm3	ASTM D1505
Flow Rate (MI, 190 °C/2.16 kg)	---	0.35 g/10 min	ASTM D1238
Tensile Strength at Yield, 2 in/min, Type IV bar	4,100 psi	28 MPa	ASTM D638
Elongation at Break, 2 in/min, Type IV bar	500%	500 %	ASTM D638
Flexural Modulus, Tangent - 16:1 span :depth, 0.5 in/min	185,000 psi	1,270 MPa	ASTM D790
ESCR, Condition B (100 % Igepal), F50	60 h	60 h	ASTM D1693
Brittleness Temperature, Type A, Type I specimen	< -103 °F	< -75 °C	ASTM D746

Notes:
This resin meets these specifications: ASTM D4976 - PE 235, FDA 21 CFR 177.1520(c) 3.2a, use conditions B through H per Table 2 of 21 CFR 176.170(c).

The nominal properties reported herein are typical of the product, but do not reflect normal testing variance and therefore should not be used for specification purposes. Values are rounded. The physical properties were determined on compression molded specimens that were prepared in accordance with Procedure C of ASTM D4703, Annex A.

Disclaimer:
Typical properties: these are not to be construed as specifications.
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Technical Data Sheet

Taisox 8001BL-Black Pipe PE100

1.Product description

8001BL is an ethylene/butene copolymer based High Density Polyethylene which is designed for the extrusion of various pressure pipes.The Taisox HDPE is produced by the CSTR slurry process.

According to ISO 12162:1995(E), the **black** 8001BL is classified PE 100 at 20℃ and 50 years exceeds a MRS of 10Mpa. It provides good creep resistance, excellent ESCR, and high mechanical properties.

8001BL is recommended in the applications of potable water pipe, gas pipe, sewer & drain pipe, telecommunication system, industrial pipe, circular cages etc .

2.Typical properties

Properties	Units	Test Method	Typical Value
Melt Index $MI_{2.16}$	g/10min	ASTM D1238	0.05
Melt Index MI_5	g/10min	ASTM D1238	0.23
Melt Index $MI_{21.6}$	g/10min	ASTM D1238	7.0
Density	g/cm^3	ASTM D1505	0.958
Thermal properties			
Melting point	℃	DSC	129
Softening point	℃	ASTM D1525	124
Brittleness point	℃	ASTM D746	<-70
Mechanical properties			
Tensile strength at yield	Kg/cm^2	ASTM D638	240
Tensile strength at break	Kg/cm^2	ASTM D638	360
Elongation at break	%	ASTM D638	850
Hardness	Shore D	ASTM D2240	64
MRS	Mpa	ISO 9080	10
Carbon Black Content	%	ISO6964	2.3
Thermal stability(200℃)	min	ISO/TR 10837	>30

*Data shown are average values and should not be examined for specifications

PRODUCT DATA SHEET

POLYPROPYLENE
Borstar® RA140E

POLYPROPYLENE RANDOM COPOLYMER FOR PRESSURE PIPE SYSTEMS

DESCRIPTION

Borstar® RA140E is a BNT Nucleated high molecular weight, low melt flow rate polypropylene random copolymer (PP-R) natural colored.

APPLICATIONS

Borstar® RA140E together with the appropriate additive package is recommended for the production of PP-R pipes and fittings used in: Heating, Plumbing, Domestic water, Relining, and Industrial applications

SPECIFICATIONS

Borstar® RA140E is intended to fulfill the following standards and regulations, providing the appropriate industrial manufacturing standard procedures are used and a continuous quality system is implemented: DIN 8078, DIN 8077 and EN ISO 15874.

SPECIAL FEATURES

Borstar® RA140E is a natural grade used for production of pipes and fittings. The material is in pellet form and includes selected additive package which ensure:

- Enhanced process ability
- Economical pipe production
- Excellent product consistency
- High temperature resistance
- Low incidence on taste and odour
- Good impact strength

The pipe systems will show high durability, no corrosion, good weldability, homogeneous joints, low tendency to incrustations and fast and easy installation.

PHYSICAL PROPERTIES

Property	Typical Value	Test Method
Density	905kg/m^3	ISO 1183
Melt Flow Rate (230°C/2.16kg)	0.30g/10min	ISO 1133
Flexural Modulus (2mm/min)	850MPa	ISO 178
Tensile Modulus (1mm/min)	800MPa	ISO 527
Tensile Strain at Yield (50mm/min)	13.5%	ISO 527-2
Tensile Stress at Yield (50mm/min)	25MPa	ISO 527-2
Thermal Conductivity	0.24W/(m K)	DIN 52612
Coefficient of Thermal Expansion (0°C/70°C)	1.8*10E-4/K	DIN 53752
Charpy Impact Strength, notched (23°C)	60 kJ/m²	ISO 179/1eA
Charpy Impact Strength, notched (0°C)	6.0kJ/m²	ISO 179/1eA
Charpy Impact Strength, unotched (23°C)	No break	ISO 179/1eU
Charpy Impact Strength, unotched (0°C)	No break	ISO 179/1eU

*Data should not be used for specification work

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PROPEL
100% TRUST. 100% VALUE.

003DB52

Product Technical Datasheet

High Density Polyethylene — Medium Blow Molding

Product Description:

HDPE 003DB52 is a high molecular weight high density bimodal grade produced by Lyondell Basell 's Hostalen slurry process with following features:

- Good Processability,
- Balanced stiffness & impact strength

Recommended Applications:

HDPE 003DB52 is Medium capacity blow molding grade recommended for:

- Containers / Bottles upto 100 Litre capacity
- Blow molded water tanks upto 1000 Litres
- Sheet Extrusion application

Typical Properties:

Tested Properties	Test Method	UOM	Values*
Resin Properties			
Melt Flow Index (190^{0}C & 5 Kg)	ASTM D 1238	gm/10 min	0.32
Melt Flow Index (190^{0}C & 21.6 Kg)	ASTM D 1238	gm/10 min	9.5
Density @ 23°C	ASTM D 1505	gm/cm^3	0.952
Mechanical Properties			
Tensile Strength @ Yield (Type-IV)	ASTM D 638	MPa	32
Elongation @ Yield (Type-IV)	ASTM D 638	%	10
Flexural Modulus	ASTM D 790	MPa	1300
Notched Izod Impact Strength @ 23°C	ASTM D 256	J/m	300
Hardness	ASTM D2240	Shore D	62
Thermal Properties			
Vicat Softening Point	ASTM D 1525	°C	126

* Typical values not to be construed as specification limits. Values may change without any prior notice.

** Mechanical properties were determined on compression moulded specimens.

Recommended Processing Temperature: 180 – 220 °C

Packaging Information:

This material is packed and available in raffia bags with net content of 25.0 Kg only. The raffia bags used conforms to the minimum strength requirements of BIS, however, customer shall take due care while handling the bag. Prolonged exposure of these bags to sunlight may deteriorate the bag's performance and cause spillage and wastage. IOCL does not warranty loss of material due to poor material handling practices.

Regulatory Information:

HDPE 003DB52 meets "Specification for Polyethylene for safe use in contact with Foodstuff, Pharmaceutical & Drinking water" as per IS:10146-1982. It also conforms to the positive list of constituents as prescribed in IS:10141-1982. The grade and Additives incorporated meet with FDA:CFR Title21,177.1520, Olefin Polymers.

Storage & Handling:

Prevent HDPE Material from direct exposure to sunlight & heat to avoid quality deterioration. The storage location should be dry, dust free and the Storage temperature should not exceed 50 °C. Non - compliance to these precautionary measures can lead to degradation of the product causing Color changes, Odor & inadequate product performance. It is advised to process HDPE material within 06 months after delivery.

IndianOil

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PRODUCT DATA SHEET

POLYETHYLENE
Borstar® FB2230

ENHANCED POLYETHYLENE FOR HIGH PERFORMANCE FLEXIBLE PACKAGING

DESCRIPTION

Borstar®FB2230 is produced using the proprietary **Borstar®** bimodal technology resulting in easy extrusion with superior mechanical properties. Film made from the product exhibits excellent mechanical strength at normal as well as low temperature, good sealing properties and superior ESCR.

Borstar®FB2230 contains antioxidant.

CAS-No. 25087-34-7

APPLICATIONS

Mono layer & co-extrusion films
Lamination (incl. Stand up Pouches)
Compression Packaging
Heavy duty shipping sacks
Industrial Film
Form Fill Seal (FFS) Packaging
Agriculture Film (incl. Greenhouse Film)
Shrink film
Geomembrane
Exclusive Carrier/Boutique bags
Frozen Food
Impact modifier

KEY FEATURES

Easy process ability
Excellent impact strength – stiffness balance
Good seal properties
Bubble stability
Excellent draw down
Toughness at low temperature
Superior ESCR
Excellent printability

PHYSICAL PROPERTIES

Property	Typical Value*	Test Method
Density	923 kg/m3	ASTM D 792
Melt Flow Rate (190°C/2.16kg)	0.25 g/10min	ASTM D1238
Melt Flow Rate (190°C/5.0kg)	1.0 g/10min	ASTM D1238
Melt Flow Rate (190°C/21.6kg)	22 g/10min	ASTM D1238
Melting Temperature	124 °C	ISO 11357/03
Vicat Softening Point A50 (10 N)	101 °C	ISO 306
ESCR – 10% Igepal – F 50%	>5000 Hours	ASTM D1693-B

* Typical properties and data should not be used for specification work

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SAFRIPOL
preferred polymer partner

Safripol a division of KAP Diversified Industrial (Pty) Ltd

Technical Data Sheet

iMPACT 100®

Black High Density Polyethylene for Pipe and Extrusion Applications

iMPACT 100® is a black High Density Polyethylene resin designed for all dimensions of PE100 piping where transportation of potable water, gas, effluent, slurry and certain chemical substances is required. It is a bimodal high molecular weight resin with excellent processing characteristics, impact strength and good resistance to environmental stress cracking, abrasion, chemical attack and UV radiation.

iMPACT 100® complies with:

- SANS 4427-1:2008/ISO 4427-1:2007 Polyethylene (PE) pipes and fittings for water supply
- SANS/ISO 4437-1:2014 Plastics piping systems for the supply of gaseous fuels

Typical Applications

Pipes for:

- Potable water mains
- Gas mains
- Effluent
- Slurries
- Chemical Waste

PROPERTIES[1]	VALUE	UNIT	TEST METHOD
Physical			
Melt Flow Rate, 190 °C/ 5 kg	0.30	g/10min	ISO 1133
Melt Flow Rate, 190 °C/ 21.6 kg	9.0	g/10min	ISO 1133
Density[2]	0.957	g/cm^3	ISO 1183
Carbon black content	2.0-2.5	%	ISO 6964
Carbon black dispersion	≤ 3		ISO 18553
Mechanical [3]			
Hardness Shore D	63	Units	ASTM D2240
Tensile Yield[4]	26	MPa	ASTM D638
Ultimate Tensile[4]	33	MPa	ASTM D638
Ultimate Elongation[4]	>750	%	ASTM D638
Thermal			
Oxidation Induction Time (210°C)	>30	min	ISO 11357

(1) Typical values; not to be construed as specification limits.
(2) Unannealed
(3) Compression moulded samples
(4) Test speed 50 mm/min

Typical processing conditions	Extrusion
Feed Zone (°C)	160 - 170
Zone 1 (°C)	180 - 200
Zone 2 (°C)	190 - 220
Zone 3 (°C)	190 - 220
Melt Temp (°C)	190 - 220

For further information on this product's compliance to applicable South African National Standards, please contact Safripol* R&D.

PRODUCT DATA SHEET

POLYETHYLENE
Borstar® FB2310

ENHANCED POLYETHYLENE FOR HIGH PERFORMANCE FLEXIBLE PACKAGING

DESCRIPTION

Borstar®FB2310 is produced using the proprietary **Borstar®** bimodal technology resulting in easy extrusion with superior mechanical properties. Film made from the product exhibits excellent mechanical strength at normal as well as low temperature, good sealing properties and superior ESCR. It exhibits excellent stiffness - impact balance and offers possibility of down gauging while performance is maintained.
Borstar®FB2310 contains antioxidant.

CAS-No. 25087-34-7

APPLICATIONS

Mono layer & co-extrusion films
Lamination (Inc. stand up Pouches)
Compression packaging
Heavy duty shipping sacks
Industrial Film
Form Fill Seal (FFS) Packaging
Agriculture Film (incl. Greenhouse Film)
Shrink Film
Security packaging
Exclusive Carrier/ Boutique bags
Frozen Food
Impact modifier

KEY FEATURES

Easy process ability
Excellent impact strength – stiffness balance
Good seal properties
Bubble stability
Excellent draw down
Toughness at low temperature
Superior ESCR
Excellent printability

PHYSICAL PROPERTIES

Property	Typical Value*	Test Method
Density	931 kg/m3	ASTM D 792
Melt Flow Rate (190°C/2.16kg)	0.2 g/10min	ASTM D1238
Melt Flow Rate (190°C/5.0kg)	0.90 g/10min	ASTM D1238
Melt Flow Rate (190°C/21.6kg)	20 g/10min	ASTM D1238
Melting Temperature	127 °C	ISO 11357/03
Vicat Softening Point A50 (10 N)	108 °C	ISO 306
ESCR – 10% Igepal – F 50%	>5000 Hours	ASTM D1693-B

* Typical properties and data should not be used for specification work

FILM PROPERTIES[1]

Property**	Typical Value*	Test Method
Tensile Strength at Break (MD/TD)	60/50 MPa	ISO 527-3
Elongation at Break (MD/TD)	450/700 %	ISO 527-3
Tensile Strength at Yield (TD)	17 MPa	ISO 527-3

Borouge Pte Ltd
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002DP48

Product Technical Datasheet

High Density Polyethylene — Pressure Pipe

Product Description:

HDPE 002DP48 is a high molecular weight high density bimodal grade produced by Lyondell Basell 's Hostalen slurry process with excellent Processability & Mechanical properties. This Grade meets the MFI, Density & hydrostatic Strength requirements of material grade PE100 as per IS: 4984:1995

Recommended Applications:

HDPE 002DP48 is recommended for PE100 pressure pipe applications such as water transportation, Sewage, industrial Piping etc.

002DP48 has a **Minimum required strength (MRS) classification of 10 MPa** according to ISO 9080 and is designated **PE100 grade** according to ISO 12162.

Properties	Test Method	UOM	Remarks
MRS	ISO 9080	MPa	>10.0
RCP – S4 test, (Critical pressure for Crack propagation at 0 °C)	ISO 13477	Bar	≥10
SCG (Notch Pipe testing) (@ 80 °C, 9.2 bar)	ISO13479	Hrs	>1000

Typical Properties:

Tested Properties	Test Method	UOM	Values*
Resin Properties			
Melt Flow Index (190°C & 5 Kg)	ASTM D 1238	gm/10 min	0.22
Density @ 23°C	ASTM D 1505	gm/cm^3	0.948
Mechanical Properties			
Tensile Strength @ Yield (Type-IV)	ASTM D 638	MPa	28
Elongation @ Break (Type-IV)	ASTM D 638	%	>600
Flexural Modulus	ASTM D 790	MPa	850
Notched Izod Impact Strength @ 23°C	ASTM D 256	J/m	No Break
Hardness	ASTM D2240	Shore D	61
Thermal Properties			
Vicat Softening Point	ASTM D 1525	°C	125
Oxidative Induction Time	ASTM D3895	Min	> 30
Thermo Chemical Properties			
ESCR, F50 (10% Igepol)	ASTM D1693	Hrs	>1000

* Typical values not to be construed as specification limits. Values may change without any prior notice.

** Mechanical properties were determined on compression moulded specimens.

Recommended Processing Temperature: 180 – 220 °C

Packaging Information:

This material is packed and available in raffia bags with net content of 25.0 Kg only. The raffia bags used conforms to the minimum strength requirements of BIS, however, customer shall take due care while handling the bag. Prolonged exposure of these bags to sunlight may deteriorate the bag's performance and cause spillage and wastage. IOCL does not warranty loss of material due to poor material handling practices.

Regulatory Information:

HDPE 002DP48 meets "Specification for Polyethylene for safe use in contact with Foodstuff, Pharmaceutical & Drinking water" as per IS: 10146-1982. It also conforms to the positive list of constituents as prescribed in IS: 10141-1982. The grade and Additives incorporated meet with FDA: CFR Title21, 177.1520, Olefin Polymers.

Product Technical Datasheet

Storage & Handling:

Prevent HDPE Material from direct exposure to sunlight & heat to avoid quality deterioration. The storage location should be dry, dust free and the Storage temperature should not exceed 50 °C. Non - compliance to these precautionary measures can lead to degradation of the product causing Color changes, Odor & inadequate product performance. It is advised to process HDPE material within 06 months after delivery.

IndianOil

Registered Office Address →
G-9, Aliyavar Jung Marg,
Bandra (East), Mumbai – 400051
Maharashtra, India.

Contact Address →
Product Application and Development Center (PADC),
Near Panipat Naphtha Cracker Complex,
Village – Baljattan, Panipat – 132140, Haryana, India

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Tel : +91-180-2526702, 2526704
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KOREA PETROCHEMICAL IND. CO., LTD.

HDPE PE100

YUHWA HIDEN P600 BL

Features and Uses

Application	HDPE PE100
Features	PE100, Excellent Creep Resistance, SCG, RCP, Color:Black
Uses	Gas Pipes, Water Supply and Drain Pipes

Properties

Items	Specification	Unit	Test Method
Melt Index (5kg)	0.23	g/10min.	ASTM D1238
Density	0.961	g/cm^3	ASTM D1505
Tensile Strength at Yield	230	kg_f/cm^2	ASTM D638
Elongation at Break	>600	%	ASTM D638
Flexural Modulus	9,500	kg_f/cm^2	ASTM D790
Hardness (Rockwell)	62	shore D	ASTM 2240
Impact Strength (Izod with Notch)	>50	$kg_f cm/cm$	ASTM D256
Environment Stress Cracking Resistance	>5,000	hr, F50	ASTM D1693
Melting Point	130	^oC	ASTM D3418
Softening Point (Vicat)	124	^oC	ASTM D1525
Oxidation Induction Time at 200^oC	>60	min	ASTM D3895
Heat Deflection Temperature	65	^oC	ASTM D648
Brittleness Temperature	<-70	^oC	ASTM D746
Carbon Black Content	2.3	%	ISO 6964
Carbon Black dispersion	<3	Grade	ISO 18553

※ Above data are intended to serve as guides only, and are not sales specification limits.

Contact Info.

Division	Team in charge	TEL	FAX	e-mail
International Trade	KPICC	82-2-3706-0844, 0849	82-2-3706-0893, 0894	trade@kpicc.com
Technical Service	Marketing Support Team	82-2-2122-1537	82-2-2122-1519	H15106@kpic.co.kr

KOREA PETROCHEMICAL IND. CO., LTD.
YOONAM Bldg 77, Jahamun-ro, Jongno-gu, Seoul, 03035, Rep of Korea Homepage: www.kpic.co.kr
TEL: 82-2-2122-1422 FAX: 82-2-2122-1519 e-mail: master@kpic.co.kr

TECHNICAL DATA SHEET

Product Name	Product Grade
EL-Lene™	H1000PC

Product Type
PE 100 Black HDPE Compound

Product Description

EL-Lene H1000PC is a black, bimodal technology, high density polyethylene compound classified as a MRS 10.0 material (PE100) providing superior in mechanical properties and processablity. In addition, it includes a good dispersion of carbon black pigment and anti-oxidant to ensure excellent long term in UV resistance and thermal stability.

Typical Application

- Drinking Water Pipes
- Gas pipes
- Drainage & Sewerage pipes
- Corrugated pipes
- Industrial pipes

Product Specification

- Good process ability
- Good sagging resistance
- Excellent thermal stability
- High resistance to slow crack growth
- Resistance to rapid crack propagation

Physical Properties

Property	Test Method	Value	Unit
Melt Flow Rate	ISO 1133 @ 190 °C, 5.0 kg	0.25	g/10 min
Density (Compound)	ISO 1183	0.960	g/cm^3
Tensile Strength at Yield	ISO 527 @ Crosshead speed 100 mm/min	24	MPa
Tensile Strength at Break	ISO 527 @ Crosshead speed 100 mm/min	> 30	MPa
Elongation at Break	ISO 527 @ Crosshead speed 100 mm/min	> 600	%
Carbon Black Content	ISO 6964	2.25	% by mass
Carbon Black Dispersion	ISO 18553	<3	-
Oxidative induction time	ISO 11357-6 @ 210 °C	> 40	min
Flexural Modulus	ASTM D 790	1000	MPa
MRS Classification	ISO 12162:2009/ ISO 9080	10.0	MPa
Resistance to slow crack growth	ISO 13479 @ 80 °C	> 500	hour
Rapid crack propagation	ISO 13477, Pc, S4	>10	bar
Resistance to gas constituents	ISO 1167	> 20	hour

Note: the given values are typical value measured on the product. Values herein are not to be constructed as a product specification.

Processing Guidelines

For extrusion of EL-Lene H1000PC, it is recommended to use a screw giving good melting and mixing without excessive shear. A single or double flight PE screws have proven satisfactory and will be used with good result. For normal extrusion equipment, we suggest a melt temperature of 200 – 220 °C, and drying 80 – 90 °C for 1 - 2 hours before use.

Product Technical Assistance
For technical assistance or further information on this product or any other SCG Chemicals' products contact your SCG Chemicals technical service at the address or telephone number as specified below.

Product Available Form

- Black pellet

Product Packaging

- 25 kg loose bag
- 25 kg stretch wrap palletized
- 750 kg big bag
- Seabulk container

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TECHNICAL DATA SHEET

Product Name	Product Grade
SCG HDPE	H1000PC

Product Type: **PE100 Black HDPE Compound**

Product Description

SCG HDPE H1000PC is a black, bimodal technology, high density polyethylene compound classified as a MRS 10.0 material (PE100) providing superior in mechanical properties and processablity. In addition, it includes a good dispersion of carbon black pigment and anti-oxidant to ensure excellent long term in UV resistance and thermal stability.

Typical Application

- Drinking Water Pipes
- Gas pipes
- Drainage & Sewerage pipes
- Corrugated pipes
- Industrial pipes

Product Characteristics

- Good process ability
- Good sagging resistance
- Excellent thermal stability
- High resistance to slow crack growth
- Resistance to rapid crack propagation

Physical Properties

Property	Test Method	Typical Value	Unit
Melt Flow Rate	ISO 1133 @ 190 °C, 5.0 kg	0.25	g/10 min
Density (Compound)	ISO 1183	0.960	g/cm^3
Tensile Strength at Yield	ISO 527 @ Crosshead speed 100 mm/min	24	MPa
Tensile Strength at Break	ISO 527 @ Crosshead speed 100 mm/min	> 30	MPa
Elongation at Break	ISO 527 @ Crosshead speed 100 mm/min	> 600	%
Carbon Black Content	ISO 6964	2.25	% by mass
Carbon Black Dispersion	ISO 18553	<3	-
Oxidative induction time	ISO 11357-6 @ 210 °C	> 40	min
Flexural Modulus	ASTM D 790	1000	MPa
MRS Classification	ISO 12162:2009/ ISO 9080	10.0	MPa
Resistance to slow crack growth	ISO 13479 @ 80 °C	> 500	hour
Rapid crack propagation	ISO 13477, Pc, S4	>10	bar
Resistance to gas constituents	ISO 1167	> 20	hour

Note: Conversion factor for changing unit from kg/cm^2 to MPa is divided by 10.20

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Published: August 2018

PRODUCT DATA SHEET

POLYETHYLENE
BorSafe™ HE3490-LS-H

BLACK HIGH DENSITY BIMODAL PE100 POLYETHYLENE FOR PRESSURE PIPE

DESCRIPTION

BorSafe™ HE3490-LS-H is a black, bimodal, high density polyethylene classified as a MRS 10.0 material (PE100) produced using the advanced Borstar® technology. The compound contains well dispersed carbon black giving outstanding UV resistance and an optimized stabilization package ensuring long term stability.

APPLICATIONS

BorSafe™ HE3490-LS-H is recommended for pressure pipe systems used in drinking water and natural gas, pressure sewerage, relining, sea outfall and industrial applications, especially where they are to be installed in challenging conditions. It is especially designed for the production of larger diameter, thick wall pipe, but can be processed for the whole range of diameters.

SPECIAL FEATURES

BorSafe™ HE3490-LS-H is a high density hexene copolymer compound with an outstanding resistance to slow crack growth.

PHYSICAL PROPERTIES

Property	Typical Value*	Test Method
Density (Compound)	960kg/m^3	ISO 1183
Melt Flow Rate (190°C/5.0kg)	0.25g/10min	ISO 1133
Tensile Modulus (1mm/min)	1100MPa	ISO 527
Tensile Strain at Break (50mm/min)	>600%	ISO 527-2
Tensile Stress at Yield (50mm/min)	25MPa	ISO 527-2
Carbon Black Content	≥2%	ISO 6964
Carbon Black Dispersion	≤3	ISO 18553
Oxidation Induction Time (210°C)	≥20mins	ISO 11357-6
Resistance to Rapid Crack Propagation, S4 test+	>10bar	ISO 13477
Resistance to Slow Crack Growth (9.2bar, 80°C)	>5000hrs	ISO 13479

+Pc at 0°C, test pipe 250mm SDR11
*Data should not be used for specification work

PROCESSING GUIDELINES

Pre-drying

Due to the hygroscopic nature of carbon black, this compound is sensitive to moisture. Storage for a long time or under unfavorable conditions will increase the moisture content. For normal conditions and applications we suggest preheating and drying for minimum 1 hour with a maximum preheat temperature of 90°C.

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TECHNICAL DATA SHEET

Product Name	Product Grade
SCG HDPE	H800BBL

Product Type: **HDPE Compound for Blow molding Tank**

Product Description

SCG HDPE H800BBL is a blue color compound, high density polyethylene resin that is specially designed for large water tanks. It provides excellent mechanical properties and process ability. Well dispersed stabilizer and anti-oxidant provide high thermal stability. Fully UV stabilizers package design for outdoor application.

Typical Application

- Water Tank

Product Characteristics

- Good process ability
- High Thermal stability
- Outstanding mechanical strength
- Good UV protection

Physical Properties

Property	Test Method	Typical Value	Unit
Melt Flow Rate	ASTM D 1238 @ 190 °C, 5.0 kg	0.27	g/10 min
Melt Flow Rate	ASTM D 1238 @ 190 °C, 21.6 kg	10.90	g/10 min
Density	ASTM D 1505	0.953	g/cm^3
Tensile Strength at Yield	ASTM D 638*	25	MPa
Tensile Strength at Break	ASTM D 638 *	> 35	MPa
Elongation at Break	ASTM D 638*	> 750	%
Flexural Modulus	ASTM D 790	> 850	MPa
Notched Izod Impact	ASTM D 256 @ 23 oC	290	J/m
Oxidative induction time	ISO 11357-6 @ 210 °C	> 30	min
Hardness	ASTM D 2240	62	Shore D
ESCR	ASTM D 1693 @ 10% Igepal B	>5000	Hrs, F0
Vicat Softening Temperature	ASTM D 1525	122.4	°C

* Crosshead speed is 100 mm/min

Note: the given values are typical value measured on the product. Values herein are not to be constructed as a product Specification.

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Published: August 2018

HYUNDAI ENGINEERING PLASTICS

Product Information

SOLARENE® GPPS, G-116

Description

SOLARENE® G-116 is a high heat resistance, high rigidity and high molecular weight general purpose polystyrene mainly for the extrusion sheet/film and Injection molding. It is particularly useful in the production of thick sheet by direct gassing, where it gives Expanded sheets with high mechanical properties; for blend with high impact polystyrene in heat contact applications.

Applications

SOLARENE® G-116 is useful to foamed trays, shower screens, high heat resistant thermoformed products, transparent cups and home electric parts etc.

Supplied and storage

SOLARENE® G-116 should be kept in its original packages in cool and dry place. Avoid direct exposure to sunlight. SOLARENE® G-116 can be stored in silos.

Food contact

The composition of SOLARENE® G-116 complies with 21CFR.SEC.177.1640 in FDA regulations, as well as the registered by as follows;

-. A confirmation certificate for PL(Products Liability)
- · approved by JHOSPA(Japan Hygienic Olefin & Styrene Plastics Association)
- · file number : E-08
- · registration number : [A]Sza-0579-L

Standard properties

The statement in the document are based on our present technical knowledge, experience and data selected from the literature. All tests carried out at 23℃ unless otherwise stated by own test methods. Mechanical properties are measured on injection molded tests specimens. Neither do they imply any binding assurance of stability for a particular purpose.

>>Typical Value for Product

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Petrochemical Factory
#665 Bukok-dong, Nam-gu Ulsan 680-110, Korea
tel) 82.52.259.6750~3, fax) 82.52.259.6864

HYUNDAI-EP
QA630-20805

HYUNDAI ENGINEERING PLASTICS

Typical Value for Product

SOLARENE® GPPS, G-116

Test item	Unit	Test method		Typical value	
		ISO	ASTM	ISO	ASTM
Mechanical properties					
Tensile stress at yield	MPa	527	D638	56	56
Tensile stress at break	MPa	527	D638	54	54
Tensile strain at yield	%	527	D638	-	-
Tensile strain at break	%	527	D638	3	3
Young's modulus	MPa	527	D638	2,638	2,638
Flexural strength	MPa	178	D790	110	110
Flexural modulus	MPa	178	D790	3,494	3,494
Charpy impact strength(23℃/-30℃)	kJ/㎡	179	-	-	-
Charpy notched impact strength(23℃/-30℃)	kJ/㎡	179	D6110	-	-
IZOD impact notched strength(23℃)	kJ/㎡	180	D256	-	1.7
IZOD impact notched strength(-23℃)	kJ/㎡	180	D256	-	-
Rockwell hardness(L scale)	-	2039	D785	-	102
Rheological Properties					
Melt flow index(200℃-5kg)	g/10min	1133	D1238	2.3	2.3
Molding shrinkage(along chain)	%	Injection	Injection	0.5	0.5
Molding shrinkage(across chain)	%	injection	injection	0.4	0.4
Thermal properties					
VICAT softening temp., (B/50)	℃	306	D1525	105	105
Heat distortion temp., (1.8MPa)	℃	75	D648	85	85
Optical properties					
Haze(Injection Mold Specimen)	%		D1003	-	0.4
Yellow index(Pellets)	-		D1925	-	-4.5
Burning properties					
Flammability, 1.6t	Class	UL94		HB	
3.2t	Class	UL94		HB	

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HYUNDAI-EP
QA630-20805

HDC HYUNDAI ENGINEERING PLASTICS

Typical value for Solarene®

Grade : Solarene® GPPS, G-126

Test items	Unit	Test Method	Test Condition	Typical Value
Mechanical Properties				
Tensile Stress at yield	kgf/㎠ [MPa]	ASTM D 638	-	520 [51]
Elongation	%	ASTM D 638	-	3
Flexural Strength	kgf/㎠ [MPa]	ASTM D 790	-	890 [87]
Flexural Modulus	kgf/㎠ [MPa]	ASTM D 790	-	32,000 [3,138]
Izod Impact Strength	kgf·cm/cm [J/m]	ASTM D 256	3.2mm Notched	1.9 [18.6]
Rockwell Hardness	-	ASTM D 785	L-Scale	101
Rheological Properties				
Melt Flow Index	g/10 min	ASTM D 1238	200℃/5kg	6
Thermal Properties				
Vicat Softening Temp.	℃	ASTM D 1525	A/50	100
Mold Shrinkage	%	ASTM D 955	-	0.4~0.7
Physical Properties				
Specific Gravity	-	ASTM D 792	-	1.04
Water Absorption	%	ASTM D 570	-	0.03
Burning Properties				
Flammability	class	UL 94	-	HB

* The above values are only the representatives of natural color specimen.
* The listed values should be used for referential purposed only.

LOTTE CHEMICAL

BL6200

High Density Polyethylene

General Information

Description

- For Blow Molding
- High speed processability, Good ESCR

Applications

- Bottle(small) and household product.(shampoo, bleach)

Properties[1]			
Physical	**Test Method**	**Nominal Values**	
Melt Flow Index (190℃, 2.16kg)	ASTM D1238	0.35 g/10min	
Density	ASTM D1505	0.959 g/㎤	
Mechanical			
Tensile Stress (Yield)	ASTM D638	280 kgf/㎠	27.5 MPa
Tensile Strain (Break)	ASTM D638	≥500 %	
Flexural Modulus	ASTM D790	12,000 kgf/㎠	1,177 MPa
Impact			
Notched IZOD Impact Strength (23℃)	ASTM D256	12 kgf·cm/cm	118 J/m
Thermal			
VICAT Softening Point	ASTM D1525	123 ℃	
Additional			
ESCR	ASTM D1693	400 F_{50}hr	

NOTE

ISO 9001, 14001, /TS 16949

[1] Properties: these are not to be construed as specifications

LOTTE CHEMICAL

FL7000 HIGH DENSITY POLYETHYLENE

General Information

Description

- FL7000 is manufactured to be processed in conventional blown film equipment by CSTR Slurry process technology.
- Thanks to Bi-modal design of molecular composition, FL7000 offers both excellent processability and superior mechanical properties.

Additives

- Antioxidant

Applications

- Shopping Bag, Garbage Bag
- Industrial/ General Packing Film

Physical Properties[1]

Properties	Test Method	Nominal Value		
Melt Index, at 190℃/2.16kg	ASTM D 1238	0.035	g/10min	
Density	ASTM D 1505	0.956	g/cm^3	
Tensile Strength at Break	ASTM D 638	320	kg/cm^2	31.4 MPa
Elongation at Break	ASTM D 638	> 500	%	
Flexural Modulus	ASTM D 790	10,000	kg/cm^2	
IZOD Impact Strength, at 23℃	ASTM D 256	NB	kg·cm/cm	
VICAT Softening Point	ASTM D 1525	124	°C	
ESCR	ASTM D 1693	> 1,000	F50 Hours	

Note

ISO 9001, 14001, /TS 16949

[1] Physical Properties : these are not to be construed as specifications

Uz-Kor Gas Chemical

BL6200 High Density Polyethylene

Description

BL6200- is a HDPE resin produced via Slurry process technology and suitable for use in blow moulding application. BL6200 is designed to offer high speed processability, good ESCR.

Application

Bottle (small) and household product (shampoo, bleach, Cosmetics).

Properties			
Physical	**Testing methods**	**Nominal values**	
Density	ASTM D 1505	g/cm^3	0.956-0.961
Melt Flow Rate	ASTM D 1238	g/10min	0.32-0.44
Mechanical			
Tensile Strength at Yield (min.)	ASTM D 638	kg/cm^2	240
Elongation at Break (min.)	ASTM D 638	%	500
Flexural Modulus (min.)	ASTM D790	kg/cm^2	11,000
Impact			
Izod Impact Strength (23^0C) (min.)	ASTM D256	kg cm/cm	10
Thermal			
Vicat Softening Point (min.)	ASTM D1525	^{0}C	123
Additional properties			
Rockwell Hardness (min.)	ASTM D785	R	55
Environmental Stress Cracking Resistance (F50) (min.)	ASTM D1693	hr	100

Note: Above data is based on information provided by Licensor and it is not to be construed as specification.

Formosa Plastics®

Formolene® HDPE

Formolene® E924

High Density Polyethylene High Molecular Weight (HDPE-HMW) Bimodal Resin Designed For Thin Gauge Film Extrusion Applications

Formolene® E924 is a high molecular weight grade of HDPE designed for high drawdown to produce thin films with good processing and physical properties. Formolene® E924 is well balanced in overall physical properties and provides good stiffness for thin gauge film applications.

Formolene® E924 meets all requirements of the U.S. Food and Drug Administration as specified in 21 CFR 177.1520, covering safe use of polyolefin articles intended for direct food contact.

Suggested Applications:

T-Shirt Bags
Trash Can Liners and Heavy Duty Bags
Multi-Wall Bag Liners
Merchandise Bags

Nominal Physical Properties:

PROPERTY	ASTM TEST METHOD	UNIT	VALUE
Typical Resin Properties for E924:			
Melt Index	D1238	g/10 min.	0.04
HLMI	D1238	g/10 min.	8.50
Density	D1505	g/cm^3	0.949
Melting Point	DSC	°C	131.0
Typical E924 Film Properties:			
Dart Drop Impact Strength	D1709	g/mil	590
Elmendorf Tear Strength	D1922	g/mil	17/210*
Tensile Strength at Break	D882	psi.	9,800/7,000*
Tensile Elongation at Break	D882	%	290/480*
1% Secant Modulus	D882	psi.	74,000/128,000*

* MD / TD

Note: Film properties are not intended to be used as specifications. They represent 0.50 mil film produced in laboratory conditions at a blow-up ratio of 4.0:1 and a stalk height of 8 times the die diameter. Output: 14.5 Lbs/Hr./In. Die Circumference.

Published 02/01/12, Revised 11/10/16

Any inquiries regarding this data sheet should be addressed to: 9 Peach Tree Hill Road • Livingston, NJ 07039 • Phone: (888) FPCUSA3 • Fax: (973) 422-7772

SK global chemical

Data Sheet

Date Prepared:

HDPE 8800

YUZEX 8800 provides stronger film than ones made from competitive HDPE film grades and this grade is bimodal type resin. Therefore ``YUZEX`` 8800 shows superior stability in film extrusion to that of competitive HDPE film resins and gives excellent appearance to its film. YUZEX 8800 has ultra high molecular weight polymer and this make excellent mechanical properties compared with competitive HDPE film grades.

Application / Use Case

Film / agriculture, industrial, shopping bags, trash bags

Characteristic

Tearing strength, Impact strength

Specification

	Specification	Unit	Test Method
Density	0.956	g/cm^3	ASTM D1505
Melt Index	0.048	g/10min	ASTM D1238

Physical Properties

	Value	Unit	Test Method
Softening Point(Vicat)	124	°C	ASTM D 1525
Tensile Strength at Yield	230	kg/cm^2	ASTM D638
Tensile Strength at Break	300	kg/cm^2	ASTM D638
Elongation at Break	>500	%	ASTM D638
IZOD Impact Strength(Notched, 23°C)	NB	kg cm/cm	ASTM D256
Flexural Modulus	10000	kg/cm^2	ASTM D790
ESCR	>600	hr	ASTM D1693

These are typical properties only, and are not to be construed as specific limits.

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Online www.skglobalchemical.com
www.skchem.com

ISO 9001 Certified

TECHNICAL DATA SHEET

Product Name
SCG HDPE

Product Type
High Density Polyethylene for Blown Film

Product Grade
H5604F

Product Description

H5604F is a high density polyethylene product of bi-modal process which suitable for the high quality film application. It is recommended for general purpose film with high tensile strength.

Typical Application

- Shopping bag and T-shirt bag
- Garbage bag
- Liner bag

Product Characteristics

- High tensile strength with good dart impact strength
- High stiffness
- Low gel content
- Good moisture barrier
- Food contact applicable

International Compliance

- U.S FDA 21 CFR 177.1520
- Regulation (EU) No.10/2011
- Packaging and Packaging waste Directive 94/62/EC/CONEG
- RoHS

Physical Properties

Property	Test Method	Typical Value	Unit
Melt Flow Rate	ASTM D 1238 @ 190 °C, 2.16 kg	0.04	g/10 min
Density	ASTM D 1505	0.954	g/cm^3
Melting Point	ASTM D 2117	131	°C
Vicat Softening Point	ASTM D 1525	124	°C
Brittleness Temperature	ASTM D 746	< -60	°C
ESCR	ASTM D 1693 @ 50 °C (Condition B, Compression Molded, 25% Igepal)	> 1000	hrs, F_{50}
Film Properties			
Tensile Strength at Yield	ASTM D 882	MD: -*, TD: 250*	kg/cm^2
Tensile Strength at Break	ASTM D 882	MD: 620*, TD: 310*	kg/cm^2
Tensile Modulus, 2% Secant	ASTM D 882	MD: 8200*, TD: 8000*	kg/cm^2
Elongation at Break	ASTM D 882	MD : 240*, TD : 450*	%
Elmendorf Tear Strength	ASTM D 1922	MD : 3*, TD : 80*	g
Dart Impact Strength	ASTM D 1709	139*	g

Note: (*) Properties obtained from film produced on a pilot line at TPE, 12 micron, BUR 5:1, MD = Machine Direction, TD = Transverse Direction. Conversion factor for changing unit from kg/cm2 to MPa is divided by 10.2

SCG Plastics Co., Ltd. / SCG Performance Chemicals Co., Ltd.
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Tel.: +66 2586 4874 Fax: +66 2586 5522
Email: genaral_plastics@scg.com

HDPE Resin

General Film Application

EL-Lene™ HDPE produced by bimodal process, the cutting edge technology developed by Mitsui Chemicals Inc. of Japan.

With prudent production control and the use of premium quality additives to ensure high quality of end products, EL-Lene™ HDPE resin is an ideal for various applications, both industrial and consumer goods, for different production processes such as film, blow molding and monofilament.

Grade	H5604F	F15
MFR (g/10min)	0.04	0.06
Density (g/cm^3)	0.954	0.952
Film Tensile Strength at Break MD/TD (kg/cm^2)	MD 620 ,TD 310	MD 910 , TD 380
Film Tear Strength MD/TD (g)	MD 3 , TD 80	MD 3 , TD 135
Key Characteristic	- High tensile strength - Suitable for general purpose film	- High tensile strength and high productivity - Film produced by high speed machine and wide lay flat(>25")
Recommended Application	General purpose bag, Shopping bag, Roll-bag, Liner bag, Industial bag, Garbage bag, PE-glove	

Remark: Film produced at TPE, 12 mircron and BUR 5:1

SABIC® HDPE F00952

HIGH DENSITY POLYETHYLENE

DESCRIPTION

SABIC® HDPE F00952 resin is a high molecular weight High Density Polyethylene copolymer which has been designed specifically for blown film extrusion. It has broad molecular distribution and high density combine succesfully to give excellent extrudability with high film strength and rigidity. The material contains anti oxidant. ApplicationSABIC® HDPE F00952 resin isrecommended for blown film extrusion. This product is suggested for the manufacture of high strength grocery sacks, shopping bags and high quality thin films for multi wall sack liners and replacement for thin paper products. Films of this poduct are readily treated and printed to give high quality graphics.Processing conditionsSABIC® HDPE F00952 can be extruded on conventional HMW-HDPE equipment at melt temperatures between 200 and 235 °C.Film propertiesFilm properties have been measured at 15 µm blown film with a BUR = 4.

TYPICAL PROPERTY VALUES

Revision 20190419

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
POLYMER PROPERTIES			
Melt Flow Rate [1]			
at 190 °C and 2.16 kg [1]	0.05	dg/min	ISO 1133
at 190 °C and 21.6 kg	9	dg/min	ISO 1133
Density	952	kg/m³	ASTM D1505
FILM PROPERTIES			
Dart Impact F50 [2]	180	g	ASTM D1709
Tear strength TD Elmendorf	60	g/µm	ASTM D1922
Tear strength MD Elmendorf	12	g/µm	ASTM D1922
Tensile test film			
Strain at break TD	550	%	ASTM D882
Strain at break MD	400	%	ASTM D882
Stress at break MD [2]	60	MPa	ASTM D882
Stress at break TD	56	MPa	ASTM D882
Modulus of elasticity TD	1500	MPa	ASTM D882
Yield stress TD	31	MPa	ASTM D882
Yield stress MD	33	MPa	ASTM D882
Modulus of elasticity MD	1250	MPa	ASTM D882
THERMAL PROPERTIES			
Vicat Softening Temperature			
Vicat softening temperature	125	°C	ASTM D1525

(1) Typical values: not to be construed as specification limits.

(2) Properties are based on 15 µm film produced at 4 BUR using 100% F00952

ENVIRONMENT AND RECYCLING

The environmental aspects of any packaging material do not only imply waste issues but have to be considered in relation with the use of natural resources, the preservations of foodstuffs, etc. SABIC Europe considers polyethylene to be an environmentally efficient packaging material. Its low specific energy consumption and insignificant emissions to air and water designate polyethylene as the ecological alternative in comparison with the traditional packaging materials. Recycling of packaging materials is supported by SABIC Europe whenever ecological and social benefits are achieved and where a social infrastructure for selective collecting and sorting of packaging is fostered. Whenever 'thermal' recycling of packaging (i.e. incineration with energy recovery) is carried out, polyethylene -with its fairly simple molecular structure and low amount of additives- is considered to be a trouble-free fuel.

CHEMISTRY THAT MATTERS™

HEALTH, SAFETY AND FOOD CONTACT REGULATIONS

Detailed information is provided in the relevant Material Safety Datasheet and or Standard Food Declaration, available on the Internet (www.SABIC-europe.com). Additional specific information can be requested via your local Sales Office.

DISCLAIMER: This product is not intended for and must not be used in any pharmaceutical/medical applications.

QUALITY

SABIC Europe is fully certified in accordance with the internationally accepted quality standard ISO 9001.

STORAGE AND HANDLING

Polyethylenes resins (in pelletised or powder form) should be stored in such a way that it prevents exposure to direct sunlight and/or heat, as this may lead to quality deterioration. The storage location should also be dry, dust free and the ambient temperature should not exceed 50 °C. Not complying with these precautionary measures can lead to a degradation of the product which can result in colour changes, bad smell and inadequate product performance. It is also advisable to process polyethylene resins (in pelletised or powder form) within 6 months after delivery, this because also excessive aging of polyethylene can lead to a deterioration in quality.

DISCLAIMER

Technical Data Sheet

Alathon L5005

High Molecular Weight High Density Polyethylene

Product Description

Alathon L5005 is a high molecular weight high density copolymer that provides broad bimodal molecular weight distribution, high stiffness and good heat seal response and strength. L5005 is selected by customers for use in merchandise bags, grocery sacks, trash can liners, produce bags and roll stock.

Regulatory Status

For regulatory compliance information, see *Alathon* L5005 Product Stewardship Bulletin (PSB) and Safety Data Sheet (SDS).

Status	Commercial: Active
Availability	North America
Application	Bags & Pouches; Can Liners; Retail Carryout Bags; Specialty Film
Market	Flexible Packaging
Processing Method	Blown Film

Typical Properties	Nominal Value	English Units	Nominal Value	SI Units	Test Method
Physical					
Melt Flow Rate, (190 °C/2.16 kg)	0.06	g/10 min	0.06	g/10 min	ASTM D1238
Density, (23 °C)	0.949	g/cm³	0.949	g/cm³	ASTM D1505
Film					
Dart Drop Impact Strength, F50	340	g	340	g	ASTM D1709
Tensile Strength at Break					
MD	12200	psi	84.1	MPa	ASTM D882
TD	8300	psi	57.2	MPa	ASTM D882
Tensile Strength at Yield					
MD	5000	psi	34.5	MPa	ASTM D882
TD	4200	psi	29.0	MPa	ASTM D882
Tensile Elongation at Break					
MD	320	%	320	%	ASTM D882
TD	390	%	390	%	ASTM D882
Secant Modulus					
MD	137000	psi	945	MPa	ASTM D882
TD	152000	psi	1050	MPa	ASTM D882
Elmendorf Tear Strength					
MD	11	g	11	g	ASTM D1922
TD	76	g	76	g	ASTM D1922

For more information and technical assistance contact:

Chevron Phillips Chemical Company LP
P.O. Box 4910
The Woodlands, TX 77387-4910
800.231.1212

MARLEX® POLYETHYLENE

SUPERIOR FLEXIBLE PACKAGING RESINS

Marlex® TRB-115 Polyethylene

HIGH DENSITY POLYETHYLENE (HDPE)

This bimodal high molecular weight, high density polyethylene (HMW-HDPE) ethylene-hexene copolymer is tailored for blown film applications that require:

- Good bubble stability and film drawdown
- High impact strength and toughness
- Excellent stiffness and tensile strength
- Balanced tear strength

Typical blown film applications include:

- T-shirt bags
- Produce bags
- Merchandise bags
- Industrial liners
- Trash can liners

This resin meets these specifications:

- FDA 21 CFR 177.1520(c) 3.2a. The resin may be used in contact with all types of food as defined in Table 1, 21 CFR 176.170(c) and at use conditions B-H as defined in Table 2, 21 CFR 176.170(c).

Nominal Resin Properties	English	SI	Method
Melt Index, 190 °C/2.16 kg	---	0.06 g/10 min	ASTM D1238
HLMI, 190 °C/21.6 kg	---	9.5 g/10 min	ASTM D1238
Density	---	0.950 g/cm^3	ASTM D1505

Nominal Blown Film Properties at 0.5 mil[1]	English	SI	Method
Dart	260 g/mil	100 N/mm	ASTM D1709
Elmendorf Tear MD	15 g/mil	6 N/mm	ASTM D1922
Elmendorf Tear TD	450 g/mil	174 N/mm	ASTM D1922
Tensile Strength at Break MD	13,000 psi	90 MPa	ASTM D882
Tensile Strength at Break TD	6,000 psi	41 MPa	ASTM D882
Tensile Elongation at Break MD	260 %	260 %	ASTM D882
Tensile Elongation at Break TD	570 %	570 %	ASTM D882
1 % Secant Modulus MD	120,000 psi	827 MPa	ASTM D882
1 % Secant Modulus TD	140,000 psi	965 MPa	ASTM D882

1. 0.5 mil (12.7 micron) film produced using a grooved-feed extruder at a rate of 225 lb/h with a stalk height of 7 x Die Diameter, a 4:1 Blow-Up Ratio (BUR), a 6 inch die diameter and a 0.040 inch die gap. The nominal properties reported herein are representative of the product under these processing conditions, although film properties can vary depending on the specific film-blowing conditions. Therefore, the data should not be used for specification purposes.

Revision Date: February, 2018

STAVIALENE

STA9406F3

High Density Polyethylene (HDPE)

Description:

STAVIALENE STA9406F3 is a high molecular weight, high density copolymer, that provides broad bimodal molecular weight distribution, high stiffness and good heat seal response and strength. STA9406F3 is selected by customers for use in merchandise bags, grocery sacks, trash can liners, produce bags and roll stock

Typical Applications: Bags and Pouches; Can Liners; Retail Carryout Bags; Specialty Film; Flexible Packaging.

Typical Properties			
Physical	**Nominal Value**	**Unit**	**Test Method**
Product Density	0.949	g/cm³	ASTM D1505
Melt Mass-Flow Rate (190°C/2.16kg)	0.06	g/10 min	ASTM D1238
Film	**Nominal Value**	**Unit**	**Test Method**
Dart Impact	340	g	ASTM D1709
Tensile Strength at break - MD	12200	psi	ASTM D882
Tensile Strength at break - TD	8300	psi	ASTM D882
Tensile Elongation at break - MD	320	%	ASTM D882
Tensile Elongation at break - TD	390	%	ASTM D882
1% Secant Modulus - MD	137000	psi	ASTM D882
1% Secant Modulus - TD	152000	psi	ASTM D882
Tensile Strength at yield - MD	5000	psi	ASTM D882
Tensile Strength at yield - TD	4200	psi	ASTM D882
Elmendorf Tear Strength - MD	11	g	ASTM D1922
Elmendorf Tear Strength - TD	76	g	ASTM D1922

Notes:

Film data obtained from sample produced on an Alpine 200 mm line equipped with a three layer die (40/35/25), three extruders (65 mm/75 mm/50 mm), internal bubble cooling, die gap of 1.5 mm, neck height of 8 x DD, blow up ratio of 4:1, film thickness of 0.8 mil and operating at 500 lbs/hr.

Disclaimer:

Typical properties: these are not to be construed as specifications.

Information in this document is accurate to the best of our knowledge at the date of publication. The document is designed to provide users general information for safe handling, use, processing, storage, transportation, disposal and release and does not constitute any warranty or quality specification, either express or implied, including any warranty of merchantability or fitness for any particular purpose. Users shall determine whether the product is suitable for their use and can be used safely and legally.

Technical Data Sheet (TDS)

Distributed by OPEC PLASTICS A member of STAVIAN

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CIPLAS by ITOCHU
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High Density Polyethylene

HF0851B

PRODUCT DESCRIPTION

HDPE high molecular weight resin for blown film application.

APPLICATIONS

Product used for blown film, trash bags, T-Shirt bags, grocery sacks, and industrial liners.

TYPICAL PROPERTIES

Properties		Typical Value	Unit	Test Method
Melt Flow Index (190°C/2.16 kg)		0.08 - 0.09	g/10 min	ASTM D1238
Density		0.950-0.952	g/cm^3	ASTM D792
Elemendorf Tear Strength	MD	23 - 25	g/mil	ASTM D1922
	TD	190 - 121		
Tensile Strength at Break	MD	9,100 - 9,300	psi	ASTM D882
	TD	9,700 - 9,900		
Elongation at Break	MD	300 - 500	%	ASTM D882
	TD	300 - 500		
Dart Drop Impact Strength, F50		340 - 360	g/mil	ASTM D1709A

SABIC® HDPE F00950

HIGH DENSITY POLYETHYLENE

DESCRIPTION

SABIC® HDPE F00950 resin is a high molecular weight, high density polyethylene copolymer. The design of the product, molecular architecture and density, gives F00950 a good balance of easy extrusion and high melt strength with strong physical properties.
SABIC® HDPE F00950 is typically used for production of thin films with good strength and rigidity. The material contains anti-oxidants.

SABIC® HDPE F00950 resin is typically used for blown film extrusion and production of high strength grocery sacks, shopping bags and high quality thin films for multi wall sack liners and replacement for thin paper products.

SABIC® HDPE F00950 can be extruded on conventional HMW-HDPE equipment with temperature settings between 200 and 220°C.

Film properties have been measured at 25 µm films with a BUR = 4.Film has been produced on Kiefel IBC film blown line at 160 kg/h with a die of 150 mm, die gap of 1.2 mm and a frostline height of 150 cm (= 10D).

This product is not intended for and must not be used in any pharmaceutical/medical applications.

TYPICAL PROPERTY VALUES

Revision 20191018

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
POLYMER PROPERTIES			
Melt Flow Rate			
at 190 °C and 2.16 kg	0.07	dg/min	ISO 1133
at 190 °C and 5 kg	0.30	dg/min	ISO 1133
at 190 °C and 21.6 kg	8.5	dg/min	ISO 1133
Density	950	kg/m³	ISO 1183
FILM PROPERTIES			
Impact strength	35	kJ/m	ASTM D4272
Tear strength TD	20	kN/m	ISO 6383-2
Tear strength MD	6	kN/m	ISO 6383-2
Tensile test film			
Yield stress TD	30	MPa	ISO 527-3
Yield stress MD	30	MPa	ISO 527-3
Stress at break TD	50	MPa	ISO 527-3
Stress at break MD	40	MPa	ISO 527-3
Strain at break TD	400	%	ISO 527-3
Strain at break MD	300	%	ISO 527-3
Modulus of elasticity TD	620	MPa	ISO 527-3
Modulus of elasticity MD	620	MPa	ISO 527-3

ENVIRONMENT AND RECYCLING

The environmental aspects of any packaging material do not only imply waste issues but have to be considered in relation with the use of natural resources, the preservations of foodstuffs, etc. SABIC considers polyethylene to be an environmentally efficient packaging material. Its low specific energy consumption and insignificant emissions to air and water designate polyethylene as the ecological alternative in comparison with the traditional packaging materials. Recycling of packaging materials is supported by SABIC whenever ecological and social benefits are achieved and where a social infrastructure for selective collecting and sorting of packaging is fostered. Whenever 'thermal' recycling of packaging (i.e. incineration with energy recovery) is carried out, polyethylene -with its fairly simple molecular structure and low amount of additives- is considered to be a trouble-free fuel.

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High Density Polyethylene

HB7961B

PRODUCT DESCRIPTION

Medium molecular weight HDPE blow molding resin for dairy and drinking water containers.

APPLICATIONS

Product used for dairy and drinking water container application, including food packaging.

TYPICAL PROPERTIES

Properties	Typical Value	Unit	Test Method
Melt Flow Index (190°C/2.16 kg)	0.79 - 0.81	g/10 min	ASTM D1238
Density	0.960 - 0.962	g/cm^3	ASTM D792
Tensil Strength at Yield	4600 - 4700	psi	ASTM D638
Elongation at Yield	7	%	ASTM D638
Impact Stength	84	kJ/m^2	ASTM D1822
Flexural Modulus, 2% Secant	187,000 - 189,000	psi	ASTM D790B
ESCR, F_{50}	20	hrs	ASTM D1693

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High Density Polyethylene

HB7961B

PRODUCT DESCRIPTION

Medium molecular weight HDPE blow molding resin for dairy and drinking water containers.

APPLICATIONS

Product used for dairy and drinking water container application, including food packaging.

TYPICAL PROPERTIES

Properties	Typical Value	Unit	Test Method
Melt Flow Index (190°C/2.16 kg)	0.79 - 0.81	g/10 min	ASTM D1238
Density	0.960 - 0.962	g/cm^3	ASTM D792
Tensil Strength at Yield	4600 - 4700	psi	ASTM D638
Elongation at Yield	7	%	ASTM D638
Impact Stength	84	kJ/m^2	ASTM D1822
Flexural Modulus, 2% Secant	187,000 - 189,000	psi	ASTM D790B
ESCR, F_{50}	20	hrs	ASTM D1693

TECHNICAL DATA SHEET

Product Name
SCG HDPE

Product Type
High Density Polyethylene for Monofilament and Yarn

Product Grade
H5480S

Product Description

H5480S is a high density polyethylene resin which is recommended for monofilament or flat yarn applications. It is specially designed for extrusion process both with spinneret die and T-die. H5480S offers good balance process ability and mechanical properties such as tenacity and elongation.

Typical Application

- Rope
- Agriculture net or Fishing net
- Sun shading
- Tarpaulin
- Woven sack

Product Characteristics

- Good process ability
- High tenacity
- Good product appearance
- Food contact applicable

International Compliance

- U.S. FDA
  (Complies with U.S FDA 21 CFR 177.1520)

Physical Properties

Property	Test Method	Typical Value	Unit
Melt Flow Rate	ASTM D 1238 @ 190 °C, 2.16 kg	0.8	g/10 min
Density	ASTM D 1505	0.952	g/cm^3
Melting Point	ASTM D 2117	131	°C
Vicat Softening Point	ASTM D 1525	126	°C
Brittleness Temperature	ASTM D 746	< -60	°C
Tensile Strength at Yield	ASTM D 638	270	kg/cm^2
Tensile Strength at Break	ASTM D 638	390	kg/cm^2
Elongation at Break	ASTM D 638	1200	%
Flexural Modulus	ASTM D 790	10000	kg/cm^2
Notched Izod Impact	ASTM D 256 @ 23 °C	167	J/m
ESCR	ASTM D 1693 @ 50 °C	30	Hrs, F_{50}

Note:

- Conversion factor for changing unit from kg/cm^2 to MPa is divided by 10.20
- There results above are under SCG's condition and method from specific sample, should be not used for representative to lot product qualities

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High Density Polyethylene

HF0851B

PRODUCT DESCRIPTION

HDPE high molecular weight resin for blown film application.

APPLICATIONS

Product used for blown film, trash bags, T-Shirt bags, grocery sacks, and industrial liners.

TYPICAL PROPERTIES

Properties		Typical Value	Unit	Test Method
Melt Flow Index (190°C/2.16 kg)		0.08 - 0.09	g/10 min	ASTM D1238
Density		0.950-0.952	g/cm^3	ASTM D792
Elemendorf Tear Strength	MD	23 - 25	g/mil	ASTM D1922
	TD	190 - 121		
Tensile Strength at Break	MD	9,100 - 9,300	psi	ASTM D882
	TD	9,700 - 9,900		
Elongation at Break	MD	300 - 500	%	ASTM D882
	TD	300 - 500		
Dart Drop Impact Strength, F50		340 - 360	g/mil	ASTM D1709A

R5410

OPaLene HDPE

High Density Polyethylene — Raffia & Monofilament

Product Description:

HDPE R5410 is a natural colored grade produced with the latest Ineos Gas Phase polymerization Technology exhibiting following features:

- ✓ Exceptional Tenacity
- ✓ Excellent processability

HDPE R5410 is recommended for following applications:

- ✓ Woven Sacks & Tarpaulin
- ✓ Knitted nets for crop protection
- ✓ " Raschel" sacks for vegetables
- ✓ Ropes

Typical Properties:

Sr. No.	Properties	Test Method	Units	Values*
Physical Properties				
1	Melt Flow Index (190°C & 2.16 kg)	ASTM D1238	g / 10 min	0.90
2	Density (at 23 ^{0}C)	ASTM D1505	gm/cm^3	0.954
Mechanical Properties				
3	Tensile Strength @ Yield	ASTM D638	MPa	25
4	Tensile Strength @ Break	ASTM D638	MPa	35
5	Elongation @ Break	ASTM D638	%	>500
6	Charpy Impact Strength	ISO 179-1	KJ/m^2	12
7	Notched Izod Impact Strength (at 23 ^{0}C)	ASTM D256A	J/m	250
8	Flexural Modulus	ASTM D790A	MPa	850
9	Hardness	ASTM D2240	Shore D	63
Thermal Properties				
10	Vicat Softening Point (10N)	ASTM D1525	^{0}C	122

** ** Mechanical Properties tested on Compression Molded type IV Specimen.

* Typical Values and not to be taken as specification limits, values may change without any prior notice.

Recommended Processing Temperature: 200 – 240 ^{0}C

Contact: ONGC Petro Additions Ltd., Polymer Marketing Group: 1st Floor, Omkara Complex, Sai Chowkdi, Manjalpur, Vadodara 390011, Gujarat,India
Telephone: +91 265 6192600, Fax: +91 265 6192666, Corporate Site: www.opalindia.in

PARC/2016/03 - 00

Provisional Technical Datasheet

R5410

OPalene HDPE

Regulatory Requirements:

HDPE raffia grade R5410 shall meet the requirements stipulated in IS 10146:1982 on 'Specification of Polyethylene for safe use in contact with Foodstuff, Pharmaceutical & Drinking water'. The grade and Additives incorporated in this grade shall meet the positive list of constituents as prescribed in IS 10141:1982. The Grade and the additives incorporated in it shall also comply with the FDA: CFR Title 21,177.1520, Olefin Polymers.

Storage & Handling:

Prevent Polyethylene Material from direct exposure to sunlight & heat to avoid quality deterioration. The storage location should be dry, dust free and the Storage temperature should not exceed 50 °C. Non - compliance to these precautionary measures can lead to degradation of the product causing Color changes, Odor & inadequate product performance.

Health and Safety Information:

The product described herein may require precautions in handling and use because of toxicity, flammability, or other consideration. The Material Safety Data Sheet (MSDS) contains the available product health and safety information for this material and can be found at **www.opalindia.in**. Before using any material, a customer is advised to consult the MSDS for the product under consideration for use.

ओपीएएल OPaL

ONGC Petro additions Ltd

Contact: ONGC Petro Additions Ltd., Polymer Marketing Group: 1st Floor, Omkara Complex, Sai Chowkdi, Manjalpur, Vadodara 390011, Gujarat,India
Telephone: +91 265 6192600, Fax: +91 265 6192666, Corporate Site: www.opalindia.in

PARC/2016/03 - 00

ExxonMobil

Exceed™ 1018 Series

Performance Polymer

Product Description

Exceed™ 1018 are ethylene 1-hexene copolymer resins. Films made from Exceed™ 1018 resins have outstanding tensile, impact strength and puncture. These superior strength properties, along with excellent drawability, allow downgauging in bag applications. TnPP is not intentionally added to Exceed™ 1018 resins.

General

Availability [1]	▪ Africa & Middle East ▪ Asia Pacific	▪ Europe ▪ Latin America	▪ North America
Additive	▪ Exceed™ 1018MF: Antiblock: 4500 ppm; Slip: 450 ppm; Processing Aid: Yes; Thermal Stabilizer: Yes ▪ Exceed™ 1018MJ: Antiblock: 4500 ppm; Slip: No; Processing Aid: Yes; Thermal Stabilizer: Yes ▪ Exceed™ 1018MK: Antiblock: 5000 ppm; Slip: 1000 ppm; Processing Aid: Yes; Thermal Stabilizer: Yes		
Applications	▪ Agricultural Film ▪ Bag in Box ▪ Barrier Food Packaging ▪ Blown Film ▪ Bread Bags ▪ Food Packaging ▪ Form Fill And Seal Packaging	▪ Freezer Film ▪ General Packaging ▪ Heavy Duty Bags ▪ Industrial Packaging ▪ Lamination Film ▪ Multilayer Packaging Film ▪ Overwrap Film	▪ Packaging Films ▪ Premium Trash Bags ▪ Stand Up Pouches ▪ Trash Bags ▪ Trash Can Liners
Revision Date	▪ 10/01/2018		

Resin Properties	Typical Value (English)		Typical Value (SI)		Test Based On
Density	0.918	g/cm³	0.918	g/cm³	ASTM D1505
Melt Index (190°C/2.16 kg)	1.0	g/10 min	1.0	g/10 min	ASTM D1238
Peak Melting Temperature	247	°F	119	°C	ExxonMobil Method

Film Properties	Typical Value (English)		Typical Value (SI)		Test Based On
Tensile Strength at Yield MD	1400	psi	9.4	MPa	ASTM D882
Tensile Strength at Yield TD	1400	psi	9.4	MPa	ASTM D882
Tensile Strength at Break MD	7900	psi	50	MPa	ASTM D882
Tensile Strength at Break TD	6200	psi	43	MPa	ASTM D882
Elongation at Break MD	500	%	500	%	ASTM D882
Elongation at Break TD	600	%	600	%	ASTM D882
Secant Modulus MD - 1% Secant	27000	psi	190	MPa	ASTM D882
Secant Modulus TD - 1% Secant	28000	psi	190	MPa	ASTM D882
Dart Drop Impact	460	g	460	g	ASTM D1709A
Elmendorf Tear Strength MD	250	g	250	g	ASTM D1922
Elmendorf Tear Strength TD	470	g	470	g	ASTM D1922
Puncture Force	8	lbf	36	N	ExxonMobil Method
Puncture Energy	16	in·lb	1.8	J	ExxonMobil Method

Optical Properties	Typical Value (English)		Typical Value (SI)		Test Based On
Gloss (45°)	39		39		ASTM D2457
Haze	18	%	18	%	ASTM D1003

Legal Statement

Tris(nonylphenol)phosphite (TNPP) CAS# 26523-78-4 is not intentionally used by ExxonMobil in this product. Although this product is not routinely tested for its presence, based on product composition knowledge this substance is not expected to be present. However, the fact that this substance is not intentionally used by ExxonMobil in this product does not exclude that trace levels of this substance may be present as a result of the specific characteristics of the raw materials and/or of the manufacturing process.

This product is not intended for use in medical applications and should not be used in any such applications.

Contact your ExxonMobil Chemical Customer Service Representative for potential food contact application compliance (e.g. FDA, EU, HPFB).

QChem

منتجات
Muntajat

Lotrène® POLYETHYLENE Q 5502BN

High Density Polyethylene Resin

DESCRIPTION AND USE

This high molecular weight hexene copolymer is tailored for lightweight blow molded containers that require:

- Excellent stiffness
- Exceptional processability
- Exceptional stress cracking resistance

Typical applications include:

- Ice chest & coolers
- Household & industrial chemical containers
- Food packaging & pharmaceutical containers
- Bleach & detergents containers

This resin meets these specifications:

- ASTM D4976 – PE 235
- FDA 21 CFR 177.1520(c) 3.2a, use conditions B through H per 21 CFR 176.170(c)
- Listed in the Drug Master File

NOMINAL PHYSICAL PROPERTIES	ASTM	UNIT	VALUE
Density	D1505	g/cm3	0.955
Melt Index, Condition 190 °C/2.16 kg Condition 190 °C/21.6 kg	D1238 D1238	g/10min g/10min	0.35 33
ESCR Condition A, F_{50} (100% Igepal) Condition B, F_{50} (100% Igepal)	 D1693 D1693	 h h	 45 35
Tensile Yield Strength, 50 mm/min	D638 Type IV	MPa	27
Elongation at Break, 50 mm/min	D638 Type IV	%	>600
Brittleness Temperature	D746	°C	<-75
Flexural Modulus, Tangent	D790	MPa	1370
Shore D Hardness	D2240	-	63

TECHNICAL DISCLAIMER

The values reported in this technical data sheet are the results of tests carried out in accordance with standard test procedures in a laboratory environment. Actual properties may vary depending on batch and extrusion conditions. Therefore, these values should not be used for specification purposes.

Before using this product, the user is advised and cautioned to make its own determination and assessment of the safety and suitability of the product for the specific use in question, and is further advised against relying on the information contained herein as it may relate to any specific use or application.

It is the ultimate responsibility of the user to ensure that the product is suitable for, and the information is applicable to the user's specific application. Muntajat does not make, and expressly disclaims, all warranties, including warranties of merchantability or fitness for a particular purpose, regardless of whether oral or written, expressed or implied, or allegedly arising from any usage of any trade or from any course of dealing, in connection with the use of the information contained herein or the product itself.

The user expressly assumes all risks and liabilities, whether based in contract, tort or otherwise, in connection with the use of the information contained herein or the product itself. Trademarks may not be used in any manner other than expressly authorized in a written agreement and no trademark or license rights of any kind are granted hereunder, by implication or otherwise.

High Density Polyethylene Resin

Technical Data Sheet

Lorne® Q TR-144

This high molecular weight hexene copolymer is designed for film applications. It has been formulated to provide....

- Good processability
- Good toughness and durability
- Good blending characteristics with HDPE HMW film resin

Typical applications include:

- Multi – wall liners
- T-shirt & shopping bags
- Trash bags

This resin meets these specifications:

- FDA Regulation 21CFR 177.1520. Suitable for food packaging.

Nominal Physical Properties *	ASTM	Unit	Value
Density	D792	g/cm^3	0.946
Melt Index, Condition 190 C°/ 2.16 kgs	D1238	g/10min	0.18
HLMI, Condition 190 C°/21.6 kgs	D1238	g/10min	15
Flexural Modulus, Tangent	D790	MPa	1150
Brittleness Temperature	D746	°C	<-75
Typical Film Properties**			
Dart Drop (66cm)	D1709	g	90
Spencer Impact Strength	D3420	J	0.35
Tensile Yield Strength, 50 mm/min	D882	MPa	MD: 24 TD: 26
Elongation at Break, 50 mm/min	D882	%	MD: 480 TD: 640
Elmendorf Tear Strength	D1922	g	MD: 19 TD: 270

* The nominal properties reported herein are typical of the product, but do not reflect normal testing variance and therefore should not be used for specification purposes. Values are rounded. The physical properties were determined on compression molded specimens that were prepared in accordance with Procedure C of ASTM D4703, Annex A1.
**Based on 0.025 mm film produced at 4:1 blow-up ratio.

For more information:

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November 2018

OSTERMAN

Osterlene® HM0595

Osterman & Company - High Density (HMW) Polyethylene

Monday, February 17, 2020

General Information

Product Description

- HM0595 is a high molecular weight high density copolymer that provides broad bimodal molecular weight distribution, high stiffness and good heat seal response and strength.
- Applications for Osterlene HM0595 include merchandise bags, grocery sacks, trash can liners, produce bags and roll stock.

General			
Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	
Features	• Bimodal Molecular Weight Distribution • Copolymer • Good Heat Seal	• Good Strength • High Density • High Molecular Weight	• High Stiffness
Uses	• Bags	• Heavy-duty Bags	• Liners
Processing Method	• Extrusion		

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Density	0.949	g/cm³	ASTM D1505
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	0.060	g/10 min	ASTM D1238
Films	**Nominal Value**	**Unit**	**Test Method**
Film Thickness - Tested	1	mil	
Secant Modulus - 1% Secant, MD (0.50 mil)	140000	psi	ASTM D882
Secant Modulus - 1% Secant, TD (0.50 mil)	160000	psi	ASTM D882
Tensile Strength - MD (Yield, 0.50 mil)	5100	psi	ASTM D882
Tensile Strength - TD (Yield, 0.50 mil)	4500	psi	ASTM D882
Tensile Strength - MD (Break, 0.50 mil)	11500	psi	ASTM D882
Tensile Strength - TD (Break, 0.50 mil)	9500	psi	ASTM D882
Tensile Elongation - MD (Break, 0.50 mil)	300	%	ASTM D882
Tensile Elongation - TD (Break, 0.50 mil)	400	%	ASTM D882
Dart Drop Impact [2] (0.50 mil)	350	g	ASTM D1709
Elmendorf Tear Strength - MD (0.50 mil)	10	g	ASTM D1922
Elmendorf Tear Strength - TD (0.50 mil)	80	g	ASTM D1922
Additional Information	**Nominal Value**	**Unit**	
Blow-up Ratio	4:1		

Legal Statement

Contact your Osterman Customer Service Representative for potential food contact application compliance (e.g. FDA, EU, HPFB).

Notes

[1] Typical properties: these are not to be construed as specifications.

[2] F50

For more information and technical assistance contact:

Chevron Phillips Chemical Company LP
P.O. Box 4910
The Woodlands, TX 77387-4910
800.231.1212

MARLEX® POLYETHYLENE

PREMIUM EXTRUSION AND RIGID PACKAGING RESINS

Marlex® 9512H Polyethylene

HIGH DENSITY POLYETHYLENE (HDPE)

This gas phase, high molecular weight, ethylene-hexene copolymer is tailored for lightweight blow molded parts that require:

- Excellent stiffness to ESCR ratio
- Good impact resistance
- Durability
- Recyclability

Typical blow molded applications for 9512H include:

- Oil bottles
- Household and industrial chemical containers
- Personal care product containers

This resin meets these specifications:

- ASTM D4976 - PE 235
- FDA 21 CFR 177.1520(c) 3.2a, use conditions B through H per Table 2 of 21 CFR 176.170(c)

NOMINAL PHYSICAL PROPERTIES[1]	English	SI	Method
Density	---	0.954 g/cm^3	ASTM D1505
Flow Rate (MI, 190 °C/2.16 kg)	---	0.35 g/10 min	ASTM D1238
Tensile Strength at Yield, 2 in/min, Type IV bar	4,100 psi	28 MPa	ASTM D638
Elongation at Break, 2 in/min, Type IV bar	500 %	500 %	ASTM D638
Flexural Modulus, Tangent - 16:1 span:depth, 0.5 in/min	185,000 psi	1,270 MPa	ASTM D790
ESCR, Condition B (100 % Igepal), F_{50}	60 h	60 h	ASTM D1693
Brittleness Temperature, Type A, Type I specimen	< -103 °F	< -75 °C	ASTM D746

1. The nominal properties reported herein are typical of the product, but do not reflect normal testing variance and therefore should not be used for specification purposes. Values are rounded. The physical properties were determined on compression molded specimens that were prepared in accordance with Procedure C of ASTM D4703, Annex A1.

Revision Date: August, 2016

SK global chemical

Data Sheet

Date Prepared:

HDPE 8700

Application / Use Case

FILM / High speed production

Characteristic

Extrusion rate, Heat Seal strength

Specification

	Specification	Unit	Test Method
Density	0.954	g/cm^3	ASTM D1505
Melt Index	0.075	g/10min	ASTM D1238

Physical Properties

	Value	Unit	Test Method
Softening Point(Vicat)	123	°C	ASTM D 1525
Tensile Strength at Yield	220	kg/cm^2	ASTM D638
Tensile Strength at Break	290	kg/cm^2	ASTM D638
Elongation at Break	>500	%	ASTM D638
Flexural Modulus	9000	kg/cm^2	ASTM D790
IZOD Impact Strength	NB	kg cm/cm	ASTM D256
ESCR	>600	hr	ASTM D1693

These are typical properties only, and are not to be construed as specific limits.

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002DF50

Product Technical Datasheet

High Molecular Weight High Density Polyethylene — HM Film

Product Description:

HDPE 002DF50 is a high molecular weight high density bimodal grade produced by Lyondell Basell's Hostalen Slurry process with following features:

- Good Processability
- Superior dart impact strength & sealing properties.
- Good optical properties

Recommended Applications:

HDPE 002DF50 is recommended for film applications like

- Counter bags
- Carrier bag
- Liners
- Wrapping applications

Typical Properties:

Tested Properties	Test Method	UOM	Values*
Resin Properties			
Melt Flow Index (190°C & 5 Kg)	ASTM D 1238	gm/10 min	0.22
Density @ 23°C	ASTM D 1505	gm/cm^3	0.950
Mechanical Properties			
Tensile Strength @ Yield	ASTM D 638	MPa	29
Elongation @ Break	ASTM D 638	%	1000
Flexural Modulus	ASTM D 790	MPa	1000
Notched Izod Impact Strength @ 23°C	ASTM D 256	J/m	300
Dart Impact Strength	ASTM D 1709	gm	180#
Hardness	ASTM D 2240	Shore D	60
Thermal Properties			
Vicat Softening Point	ASTM D 1525	°C	127

* Typical values not to be construed as specification limits. Values may change without any prior notice.

* Test specimen from compression moulded sheet at 23°C, samples not annealed

Result of 20µ Blown film extruded on 120mm die diameter, 1.2mm die gap & 4 BUR.

Recommended Processing Temperature: 180 – 240 °C

Packaging Information:

This material is packed and available in raffia bags with net content of 25.0 Kg only. The raffia bags used conforms to the minimum strength requirements of BIS, however, customer shall take due care while handling the bag. Prolonged exposure of these bags to sunlight may deteriorate the bag's performance and cause spillage and wastage. IOCL does not warranty loss of material due to poor material handling practices.

Regulatory Information:

HDPE 002DF50 meets "Specification for Polyethylene" for safe use in contact with Foodstuff, Pharmaceutical & Drinking water as per IS:10146-1982. The Grade and the additives incorporated also comply with the FDA: CFR Title 21,177.1520, Olefin Polymers.

Storage & Handling:

Prevent HDPE Material from direct exposure to sunlight & heat to avoid quality deterioration. The storage location should be dry, dust free and the Storage temperature should not exceed 50°C. Non - compliance to these precautionary measures can lead to degradation of the product causing Color changes, Odor & inadequate product performance. It is advised to process HDPE material within 06 months after delivery.

IndianOil

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Contact Address →
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SK global chemical

Data Sheet

Date Prepared:

HDPE 6100

YUZEX 6100 is high density polyethylene designed for pressurized pipe and produced by bi-modal operation in dual slurry reactor. It is classified as PE100 class. It has excellent process ability in pipe extrusion and balanced physical properties.

Application / Use Case

Pipe/ Pressure Pipe(gas pipe)

Characteristic

Processability, ESCR, Classfied As PE 100 Class

Specification

	Specification	Unit	Test Method
Density	0.952	g/cm³	ASTM D1505

Physical Properties

	Value	Unit	Test Method
Tensile Strength at Yield	240	kg/cm²	ASTM D638
Tensile Strength at Break	420	kg/cm²	ASTM D638
ESCR	>10000	hr	ASTM D1693
Melt Index	0.052	g/10min	ASTM D1238
Flexural Modulus	8500	kg/cm²	ASTM D790
Brittleness Temperature	<-70	°C	ASTM D746
MWD	20~25	Mw/Mn	GPC

These are typical properties only, and are not to be construed as specific limits.

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TASNEE التصنيع
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HIGH DENSITY POLYETHYLENE (PIPE)

TASNEE 100 Blue

DESCRIPTION

TASNEE 100 Blue is a High Density Polyethylene, blue colored resin. The product is classified as PE 100. TASNEE 100 Blue provides excellent environmental stress cracking resistance properties (ESCR) with very good long term hydrostatic strength and combines very high impact and stiffness properties.

TYPICAL APPLICATIONS

Drinking Water distribution pipes.

TYPICAL PROPERTIES

Physical	Method	Unit	Value
Density	ISO 1183	g/cm³	0.950
Melt Flow Rate (190°C /5 kg)	ISO 1133	g/10 min	0.23
Melt Flow Rate (190°C /21.6 kg)	ISO 1133	g/10 min	6.4
Staudinger Index Jg	ISO 1628	ml/g	380
Vicat Softening Temperature(VST/B/50 K/h (50N))	ISO 306	°C	74

Mechanical	Method	Unit	Value
Tensile Modulus (23°C, v = 1mm/min, Secant)	ISO 527-1, -2	MPa	850
Tensile Stress @ Yield (23°C, v = 50 mm/min)	ISO 527-1, -2	MPa	23
Tensile Strain @ Yield (23°C, v = 50 mm/min)	ISO 527-1, -2	%	9
Tensile Creep Modulus 1h [Test stress in MPa]	ISO 899-1	MPa	850 [2.0]
Tensile Creep Modulus 1000h [Test stress in MPa]	ISO 899-1	MPa	350 [2.0]
Maximum Elongation TD	EN 638	%	>350
MRS Classification	ISO/TR 9080	MPa	10
Flexural Stress at 3,5% deflection	ISO 178	MPa	20
FNCT (4.0 MPa, 2% Arkopal N 100, 80°C)	ISO 16770	h	>1000
Flexural Creep Modulus	DIN 19537-2		
(4 Point loading method, 1 min-value)		MPa	1100
(4 Point loading method, 24 h-value)		MPa	560
(4 Point loading method, 2000 h-value)		MPa	330
Charpy Notched Impact Strength	ISO 179		
(23°C)		kJ/m2	29
(-30°C)		kJ/m2	15
Shore Hardness (Shore D (3 sec))	ISO 868		62
Oxidation Induction Time (OIT) (210°C)	EN 728	min	≥30
Odour Treshold	EN 1622 / EN 1240		< 2

Recommended Temperatures
Melt temperature: 190–220 °C
Injection moulding temperatures: 200–280 °C

NOTE The above properties values are not to be construed as specifications.

TASNEE التصنيع
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HIGH DENSITY POLYETHYLENE (PIPE)

TASNEE 100 Orange

DESCRIPTION

TASNEE 100 Orange is a High Density Polyethylene, orange colored resin. The product is classified as PE 100. TASNEE 100 Orange provides excellent environmental stress cracking resistance properties (ESCR) with very good long term hydrostatic strength and combines very high impact and stiffness properties.

TYPICAL APPLICATIONS

Gas distribution pipes.

TYPICAL PROPERTIES

Physical	Method	Unit	Value
Density	ISO 1183	g/cm³	0.951
Melt Flow Rate (190°C /5 kg)	ISO 1133	g/10 min	0.23
Melt Flow Rate (190°C /21.6 kg)	ISO 1133	g/10 min	6.4
Staudinger Index Jg	ISO 1628	ml/g	380
Vicat Softening Temperature(VST/B/50 K/h (50N))	ISO 306	°C	74

Mechanical	Method	Unit	Value
Tensile Modulus (23°C, v = 1mm/min, Secant)	ISO 527-1, -2	MPa	850
Tensile Stress @ Yield (23°C, v = 50 mm/min)	ISO 527-1, -2	MPa	23
Tensile Strain @ Yield (23°C, v = 50 mm/min)	ISO 527-1, -2	%	9
Tensile Creep Modulus 1h [Test stress in MPa]	ISO 899-1	MPa	800 [2.0]
Tensile Creep Modulus 1000h [Test stress in MPa]	ISO 899-1	MPa	350 [2.0]
Maximum Elongation TD	EN 638	%	>350
MRS Classification	ISO/TR 9080	MPa	10
Flexural Stress at 3,5% deflection	ISO 178	MPa	20
FNCT (4.0 MPa, 2% Arkopal N 100, 80°C)	ISO 16770	h	>1000
Flexural Creep Modulus	DIN 19537-2		
(4 Point loading method, 1 min-value)		MPa	1100
(4 Point loading method, 24 h-value)		MPa	560
(4 Point loading method, 2000 h-value)		MPa	330
Charpy Notched Impact Strength	ISO 179		
(23°C)		kJ/m²	29
(-30°C)		kJ/m²	15
Shore Hardness (Shore D (3 sec))	ISO 868	-	62
Oxidation Induction Time (OIT) (210°C)	EN 728	min	≥30

Recommended Temperatures
Melt temperature: 190–220 °C
Injection moulding temperatures: 200–280 °C

NOTE The above properties values are not to be construed as specifications.

TASNEE التصنيع

TASNEE 100 Black POLYETHYLENE

DESCRIPTION

TASNEE **100 Black** is a High Density Polyethylene, black colored resin. The product is classified as PE 100 and provides excellent stress crack resistance properties (ESCR) combined with very good long term hydrostatic strength, it has very high impact and stiffness properties.

TYPICAL APPLICATIONS

Leading PE for pressure pipe, for gas and water distribution, sewage and drainage.

PRODUCT CHARACTERISTICS

Processing Method: Pipe Extrusion

Typical Properties

Physical	Method	Unit	Value [1]
Density	ISO 1183	g/cm^3	0.959
Melt Flow Rate (190℃ /5kg)	ISO 1133	g/10 min	0.23
Melt Flow Rate (190℃ /21.6kg)	ISO 1133	g/10 min	6.4
Staudinger index Jg	ISO 1628	Ml/g	380
Vicat softening temperature(VSA/B/50k/h (50N))	ISO 306	℃	74

Mechanical	Method	Unit	Value [1]
Tensile Modulus (23℃, v = 1mm/min, Secant)	ISO 527-1, -2	MPa	900
Tensile Stress @ Yield (23℃, v = 50 mm/min)	ISO 527-1, -2	MPa	23
Tensile Strain @ Yield (23℃, v = 50 mm/min)	ISO 527-1, -2	%	9
Tensile Creep Modulus 1h	ISO 899-1	MPa	850
Note: [Test stress in MPa]			
Tensile Creep Modulus 1000h	ISO 899-1	MPa	360
Note: [Test stress in MPa]			
Maximum elongation TD	EN 638	%	>350
MRS classification	ISO/TR 9080	MPa	10
Flexural stress at 3,5% deflection	ISO 178	MPa	21
FNCT (4.0 MPa, 2% Arkopal N 100, 80℃)	ISO 16770	h	>1000
Flexural creep modulus	DIN 19537-2		
(4 Point loading method, 1 min-value)		MPa	1100
(4 Point loading method, 24 h-value)		MPa	560
(4 Point loading method, 2000 h-value)		MPa	330
Charpy notched impact strength	ISO 179		
(23℃)		kJ/m^2	26
(-30℃)		kJ/m^2	13
Shore hardness (Shore D (3 sec))	ISO 868		63
Oxidation induction time (OIT) (210℃)	EN 728	min	30
Carbon black content	ISO 6964	%	2.25
Odor treshold	EN1622/1240		<2

Note:
The above properties are not to construed as specifications.

Recommended processing:
Melt temperatures : 190–220 ℃, Injection moulding temperatures : 200–280 ℃.

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HD53EA010

HIGH DENSITY POLYETHYLENE
FOR STRETCHED TAPE PRODUCTS

HD53EA010 is a High Density Polyethylene (HDPE) grade produced and specially formulated to manufacture stretched tape products and other extrusion products with good combination of tenacity and elongation. It has very good processability and stretchability, less motor load and high output combined with good tape properties to make it a grade of choice.

Typical Characteristics*			
Property	**Test Method**	**Unit**	**Typical Value****
Melt Flow Index (190°C/2.16 kg)	ASTM D1238	gm/10 min	1.0
Density (23°C)	ASTM D1505	gm/cm^3	0.955
Tensile Strength at Yield	ASTM D638	MPa	23
Elongation at Yield	ASTM D638	%	15
Flexural Modulus	ASTM D790	MPa	820
Notched Izod Impact Strength	ASTM D256	J/m	No Break
Vicat Softening Point	ASTM D1525	°C	127

*Typical Characteristics and not to be taken as specifications
**Mechanical Properties are on Injection Moulded Specimen

Applications
Oriented tapes, woven sacks.

Regulatory Information
- Meets the requirements stipulated in standard IS : 10146 on "Specification for Polyethylene for safe use in contact with foodstuffs, pharmaceuticals, and drinking water". It also conforms to the positive list of constituents as prescribed in IS : 10141. The grade and the additives incorporated in it also comply with the FDA:CFR Title 21,177.1520, Olefin polymers.

Storage Recommendations
- Bags should be stored in dry / closed conditions at temperatures below 50°C and protected from UV / direct sunlight.

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Updated as of May, 2007

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012DB54

Product Technical Datasheet

High Density Polyethylene — General Purpose Blow Molding

Product Description:

HDPE 012DB54 is a high density bimodal resin grade produced by Lyondell Basell's Hostalen slurry process with following features:

- Good Processability,
- Good balance of stiffness & impact properties
- Moderate ESCR to suit packaging of Chemicals

Recommended Applications:

HDPE 012DB54 is General purpose blow moulding grade recommended for:

- Containers / bottles upto 5 Litre capacities for packaging of Lube oil, Edible oil, FMCG products.
- General purpose containers for foodstuffs.
- Containers for packing of Chemicals, Detergents, Pesticides etc.

Typical Properties:

Tested Properties	Test Method	UOM	Values*
Resin Properties			
Melt Flow Index (190°C & 5 Kg)	ASTM D 1238	gm/10 min	1.3
Density @ 23°C	ASTM D 1505	gm/cm^3	0.9520
Mechanical Properties**			
Tensile Strength @ Yield (Type-IV)	ASTM D 638	MPa	30
Elongation @ Yield (Type-IV)	ASTM D 638	%	10
Elongation @ Break (Type-IV)	ASTM D 638	%	1000
Flexural Modulus	ASTM D 790	MPa	1200
Notched Izod Impact Strength @ 23°C	ASTM D 256 A	J/m	150
Hardness	ASTM D2240	Shore D	61
Thermal Properties			
Vicat Softening Point	ASTM D 1525	°C	124
Heat Deflection Temperature (0.455 MPa)	ASTM D 648	°C	75
Environmental Properties			
ESCR (10% Igepal), F_{50}	ASTM D 1693 B	Hrs	>200

* Typical values not to be construed as specification limits. Values may change without any prior notice.
** Mechanical properties were determined on compression moulded specimens.

Recommended Processing Temperature: 160 – 200 °C

Packaging Information:

This material is packed and available in raffia bags with net content of 25.0 Kg only. The raffia bags used conforms to the minimum strength requirements of BIS, however, customer shall take due care while handling the bag. Prolonged exposure of these bags to sunlight may deteriorate the bag's performance and cause spillage and wastage. IOCL does not warranty loss of material due to poor material handling practices.

Regulatory Information:

HDPE 012DB54 meets "Specification for Polyethylene for safe use in contact with Foodstuff, Pharmaceutical & Drinking water" as per IS:10146-1982. It also conforms to the positive list of constituents as prescribed in IS:10141-1982. The grade and Additives incorporated meet with FDA:CFR Title21,177.1520, Olefin Polymers.

Storage & Handling:

Prevent HDPE Material from direct exposure to sunlight & heat to avoid quality deterioration. The storage location should be dry, dust free and the Storage temperature should not exceed 50 °C. Non - compliance to these precautionary measures can lead to degradation of the product causing Color changes, Odor & inadequate product performance. It is advised to process HDPE material within 06 months after delivery.

IndianOil

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Maharashtra, India.

Contact Address →
Indian Oil Corporation Limited,
Product Application and Development Center (PADC),
Near Panipat Naphtha Cracker Complex,
Village – Baljattan, Panipat – 132140, Haryana, India

Contact Details →
Tel : +91-180-2526705, 2527705
Fax : +91-180-2528689
Web : https://propel.indianoil.in

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012E50

High Density Polyethylene — Oriented Tape & Monofilament

Product Technical Datasheet

Product Description:

012E50 is a High Density Polyethylene manufactured using Nova Chemical's Sclairtech Solution Polymerisation Technology with following features:

- Excellent processability
- Superior mechanical properties
- Lower water carryover

Recommended Applications:

HDPE 012E50 is recommended for following applications

- Tarpaulin
- woven sacks
- Monofilaments for mosquito nets , fishing nets & filter cloth etc

Typical Properties:

Tested Properties	Test Method	UOM	Values*
Resin Properties			
Melt Flow Index (190°C & 2.16 Kg)	ASTM D 1238	gm/10 min	1.2
Density @ 23°C	ASTM D 1505	gm/cm^3	0.950
Mechanical Properties			
Tensile Strength @ Yield (50 mm/min)	ASTM D 638	MPa	20
Ultimate Tensile Strength (50 mm/min)	ASTM D 638	MPa	37
Elongation at Break	ASTM D 638	%	>1000
Izod impact strength (Notched, 23°C)	ASTM D 256	J/m	400
Hardness	ASTM D 2240	Shore D	65

* Typical values not to be construed as specification limits. Values may change without any prior notice.

* Mechanical Properties tested on compression molded Type IV specimen as per ASTM D 638

Recommended Processing Temperature: 180– 250 °C

Packaging Information:

This material is packed and available in raffia bags with net content of 25.0 Kg only. The raffia bags used conforms to the minimum strength requirements of BIS, however, customer shall take due care while handling the bag. Prolonged exposure of these bags to sunlight may deteriorate the bag's performance and cause spillage and wastage. IOCL does not warranty loss of material due to poor material handling practices.

Regulatory Information:

HDPE 012E50 shall meet "Specification for Polyethylene for safe use in contact with Foodstuff, Pharmaceuticals and Drinking water" as per IS: 10146-1982. It also confirms to the positive list of constituents as per IS: 10141-1982. The grade and Additives incorporated shall meet with FDA: CFR Title21, 177.1520, Olefin Polymers.

Storage & Handling:

Prevent HDPE Material from direct exposure to sunlight & heat to avoid quality deterioration. The storage location should be dry, dust free and the storage temperature should not exceed 50°C. Non - compliance to these precautionary measures can lead to degradation.

IndianOil

Registered Office Address →
G-9, Aliyavar Jung Marg,
Bandra (East), Mumbai – 400051
Maharashtra, India.

Contact Address →
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Contact Details →
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LOTTE CHEMICAL

January, 2013

HOPELEN H5300 PP HOMOPOLYMER

General Information

Description

H5300 is a propylene homopolymer designed for stretched products such as flat yarn
It is a low flow rate resin with a middle molecular weight distribution.
It complies with FDA regulation.

Applications

- Flat yarns for woven bags, tape and rope

Physical Properties[1]					
Physical	**Test Method**	**Nominal Values**			
Melt Flow Index	ASTM D1238	3.5	g/10min		
Density	ASTM D792	0.90	g/cm^3		
Mechanical					
Tensile Stress (Yield)	ASTM D638	350	kgf/cm^2	34	MPa
Tensile Strain (Break)	ASTM D638	>500	%		
Flexural Modulus	ASTM D790	15,000	kgf/cm^2	1,460	MPa
Rockwell Hardness	ASTM D785	100	R		
Impact					
Notched Izod Impact Strength (23℃)	ASTM D256	3.0	kgf·cm/cm	29	J/m
Thermal					
Heat Deflection Temperature ($4.6kgf/cm^2$)	ASTM D648	104	℃		
VICAT Softening Point	ASTM D1525	152	℃		

NOTE

ISO 9001, 14001

[1] Physical Properties : these are not to be construed as specifications

www.lottechem.com

LOTTE CHEMICAL

January, 2013

HOPELEN Y-130 PP HOMO POLYMER

General Information

Description

Y-130 is a propylene homopolymer designed for stretched products such as flat yarn
It is a low flow rate resin with a broad molecular weight distribution.
It complies with FDA regulation.

Applications

- Flat yarns for woven bags, tape and rope

Physical Properties[1]					
Physical	**Test Method**	**Nominal Values**			
Melt Flow Index	ASTM D1238	4.0	g/10min		
Density	ASTM D792	0.90	g/cm^3		
Mechanical					
Tensile Stress (Yield)	ASTM D638	350	kgf/cm^2	34	MPa
Tensile Strain (Break)	ASTM D638	>500	%		
Flexural Modulus	ASTM D790	16,000	kgf/cm^2	1,560	MPa
Rockwell Hardness	ASTM D785	103	R		
Impact					
Notched Izod Impact Strength (23℃)	ASTM D256	4.0	kgf·cm/cm	39	J/m
Thermal					
Heat Deflection Temperature ($4.6kgf/cm^2$)	ASTM D648	116	℃		
VICAT Softening Point	ASTM D1525	151	℃		

NOTE

ISO 9001, 14001, /TS 16949

[1] Physical Properties : these are not to be construed as specifications

www.lottechem.com

CIPLAS by ITOCHU
750 Town & Country Blvd. Suite 600, Houston, TX 77024
Phone: +1 (281) 762-4130

High Density Polyethylene

HI7052B

PRODUCT DESCRIPTION

Hexene copolymer HDPE injection molding resin using gas-phase technology.

APPLICATIONS

Product used for general injection molding application, including pails.

TYPICAL PROPERTIES

Properties	Typical Value	Unit	Test Method
Melt Flow Index (190°C/2.16 kg)	6.5 - 7.0	g/10 min	ASTM D1238
Density	0.950 - 0.953	g/cm^3	ASTM D792
Tensil Strength at Yield	3,290 - 3,350	psi	ASTM D638
Elongation at Break	1,050 - 1,150	%	ASTM D638
Flexural Modulus, Secant	154,500 - 155,500	psi	ASTM D790B
Impact Strength	40.0	$ft{\cdot}lb/in^2$	ASTM D1822
ESCR, F_{50}	<12	h	ASTM D1693
Brittleness Temperature	< - 76 °C	%	ASTM D746
Vicat Softening Point	127 - 128	°C	ASTM D1525
Peak Crystalization Temperature (DSC)	117 - 119	°C	
Melting Temperature (DSC)	130 - 132	°C	

LOTTE CHEMICAL

January, 2013

HIVOREX 2600J — High Density Polyethylene

General Information

Description

High Productivity, Good stiffness

Applications

◆Thin walled product, Crate, Housewares, etc.

Physical Properties[1]

Physical	Test Method	Nominal Values			
Melt Flow Index	ASTM D1238	20	g/10min		
Density	ASTM D1505	0.959	g/cm^3		
Mechanical					
Tensile Stress (Yield)	ASTM D638	250	kgf/cm^2	24.5	MPa
Tensile Strain (Break)	ASTM D638	> 300	%	>300	%
Flexural Modulus	ASTM D790	13,000	kgf/cm^2	1,275	MPa
Impact					
Notched Izod Impact Strength (23℃)	ASTM D256	4	kgf·cm/cm	0.4	J/m
Thermal					
VICAT Softening Point	ASTM D1525	120	℃		
Additional Properties					
ESCR	ASTM D1693	2	F50 Hours		

NOTE

ISO 9001, 14001, /TS 16949

[1] Physical Properties : these are not to be construed as specifications

CIPLAS by ITOCHU
750 Town & Country Blvd. Suite 600, Houston, TX 77024
Phone: +1 (281) 762-4130

High Density Polyethylene

HI17050B

PRODUCT DESCRIPTION

HDPE injection copolymer for general injection molding application.

APPLICATIONS

Product used for general injection molding application, including toys and housewares.

TYPICAL PROPERTIES

Properties	Typical Value	Unit	Test Method
Melt Flow Index (190°C/2.16 kg)	17.0 - 20.0	g/10 min	ASTM D1238
Density	0.950 - 0.951	g/cm^3	ASTM D792
Vicat Softening Point	124 - 126	°C	ASTM D1525
Tensil Strength at Yield	3,290 - 3,350	psi	ASTM D638
Elongation at Break	290 - 310	%	ASTM D638
Flexural Modulus, 2% Secant	112,000 - 117,000	psi	ASTM D790B
ESCR, F_{50}	<3	h	ASTM D1693

RELENE
POLYETHYLENE
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Reliance
POLYMERS

M60200

HIGH DENSITY POLYETHYLENE

INJECTION MOULDING GRADE

M60200 is a High Density Polyethylene (HDPE) grade designed for injection moulding applications. M 60200 is suitable for moulding of houseware and commodities. Due to narrow molecular weight distribution of resin, articles exhibit excellent gloss. The resin also imparts good rigidity, stiffness, impact resistance coupled with good melt flow properties required for mould filling of large articles.

Typical Characteristics*			
Property	**Test Method**	**Unit**	**Typical Value****
Density (23°C)	ASTM D1505	g/cc	0.958
MFI (190°C/2.16 kg)	ASTM D1238	g/10 min	20.0
Tensile Strength at Yield	ASTM D638	MPa	25
Elongation at Yield	ASTM D638	%	10
Flexural Modulus	ASTM D790	MPa	900
Hardness	ASTM D2240	Shore D	69
Vicat Softening Point	ASTM D1525	°C	126

*Typical Characteristics and not to be taken as specifications
**Mechanical Properties are on Injection Moulded Specimen

Applications

Houseware, Storage bins.

Regulatory Information

- Meets the requirements stipulated in standard IS : 10146 on "Specification for Polyethylene for safe use in contact with foodstuffs, pharmaceuticals, and drinking water". It also conforms to the positive list of constituents as prescribed in IS : 10141. The grade and the additives incorporated in it also comply with the FDA:CFR Title 21,177.1520, Olefin polymers.

Storage Recommendations

- Bags should be stored in dry / closed conditions at temperatures below 50°C and protected from UV / direct sunlight.

Reliance Industries Limited, Product and Application Technology Group.
Swastik Mill Compound, V. N. Purav Marg, Chembur, Mumbai-400 071. Tel.: +91-22-6767 7000. E-mail: polymer_patsupport@ril.com Website: www.ril.com

Updated as of May, 2007

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080M60

High Density Polyethylene — Injection Molding

Product Technical Datasheet

Product Description:

080M60 is a High Density Polyethylene manufactured using Nova Chemical's Sclairtech Solution Polymerization Technology. 080M60 is a natural colored polymer with good processability, very good mechanical properties and good dimensional stability.

Recommended Applications:

HDPE 080M60 is designed to make injection molded products like:

- Industrial crates for material handling
- Pallets and luggage shells

Typical Properties:

Tested Properties	Test Method	UOM	Values*
Resin Properties			
Melt Flow Index (190°C & 2.16 Kg)	ASTM D 1238	gm/10 min	8.0
Density @ 23°C	ASTM D 1505	gm/cm^3	0.960
Mechanical Properties			
Tensile Yield Strength	ASTM D 638	MPa	25
Elongation at Yield	ASTM D 638	%	11
Elongation at Break	ASTM D 638	%	>800
Flexural Yield Strength	ASTM D 790	MPa	20
Flexural Modulus	ASTM D 790	MPa	850
Notched Izod Impact Strength @ 23°C	ASTM D 256	J/m	90
Hardness	ASTM D 2240	Shore D	55
Thermal Properties			
Vicat Softening Point (10 N)	ASTM D 1525	°C	127

* Typical values not to be construed as specification limits. Values may change without any prior notice.

* Mechanical properties tested on injection molded specimen.

Recommended Processing Temperature: 180 – 215 °C

Packaging Information:

This material is packed and available in raffia bags with net content of 25.0 Kg only. The raffia bags used conforms to the minimum strength requirements of BIS, however, customer shall take due care while handling the bag. Prolonged exposure of these bags to sunlight may deteriorate the bag's performance and cause spillage and wastage. IOCL does not warranty loss of material due to poor material handling practices.

Regulatory Information:

HDPE 080M60 shall meet "Specification for Polyethylene for safe use in contact with Foodstuff, Pharmaceuticals and Drinking water" as per IS: 10146-1982. It also confirms to the positive list of constituents as per IS: 10141-1982. The grade and Additives incorporated shall meet with FDA: CFR Title 21, 177.1520, Olefin Polymers.

Storage & Handling:

Prevent HDPE Material from direct exposure to sunlight & heat to avoid quality deterioration. The storage location should be dry, dust free and the Storage temperature should not exceed 50 °C. Non - compliance to these precautionary measures can lead to degradation of the product causing Color changes, Odor & inadequate product performance. It is advised to process HDPE material within 06 months after delivery.

IndianOil

Registered Office Address →
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Maharashtra, India.

Contact Address →
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DOW™ HDPE KT 10000 UE

High Density Polyethylene Resin

The Dow Chemical Company

PROSPECTOR®

www.ulprospector.com

Technical Data

Product Description

HDPE KT 10000 UE Polyethylene Resin is an UV stabilised resin with very narrow molecular weight distribution. It was developed to impart excellent stiffness, combined with good impact strength to injection moulded parts, at minimum warpage.

Note: HDPE KT 10000 UE Polyethylene Resin should comply with FDA regulation 177.1520 and with most European food contact regulations when used unmodified and processed according to good manufacturing practices for food contact applications. Please, contact your nearest Dow office for food contact compliance statements. The purchaser remains responsible for determining whether the use complies with all relevant regulations.

Applications:

- Cases and boxes for industrial parts.
- Farm produce and beverage crates.
- Pails and buckets.

General

Material Status	• Commercial: Active		
Literature [1]	• Technical Datasheet		
Search for UL Yellow Card	• The Dow Chemical Company		
Availability	• Asia Pacific	• Europe	
Additive	• Antiblock: No	• Processing Aid: No	• Slip: No
Forms	• Pellets		

Physical	Nominal Value Unit	Test Method
Density / Specific Gravity	0.964 g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR)		ISO 1133
190°C/2.16 kg	8.0 g/10 min	
190°C/5.0 kg	22 g/10 min	
Spiral Flow [3, 4]	73.5 cm	Internal Method
Molding Shrinkage - Flow	2.1 %	ASTM D955
Environmental Stress-Cracking Resistance (ESCR)		ASTM D1693
100% Antarox CO-630, Compression Molded	2.50 hr	
Mechanical	**Nominal Value Unit**	**Test Method**
Tensile Strength		ASTM D638
Yield, Compression Molded	29.0 MPa	
Break, Compression Molded	32.0 MPa	
Tensile Elongation		ASTM D638
Break, Compression Molded	800 %	
Flexural Modulus - 2% Secant (Compression Molded)	1050 MPa	ASTM D790
Impact	**Nominal Value Unit**	**Test Method**
Tensile Impact Strength (Compression Molded)	77.0 kJ/m²	ASTM D1822
Hardness	**Nominal Value Unit**	**Test Method**
Shore Hardness (Shore D, Compression Molded)	66	ISO 868
Thermal	**Nominal Value Unit**	**Test Method**
Vicat Softening Temperature	131 °C	ISO 306/A

Notes

[1] These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

[2] Typical properties: these are not to be construed as specifications.

[3] Melt Temperature: 250°C

[4] 2 seconds injection

Form No. TDS-84197-en
Document Created: Wednesday, February 28, 2018
Added to Prospector: May 2005
Last Updated: 1/12/2016

Product Information

Dow Plastics

DOW Polyethylene 17450N

High Density

- For toys and housewares
- Good low temperature impact strength, gloss and excellent toughness
- Complies with U.S. FDA 21 CFR 177.1520 (c) 3.2a Consult the regulations for complete details.

DOW Polyethylene 17450N High Density is a narrow molecular weight distribution copolymer designed to offer low temperature impact strength and gloss with excellent toughness. This resin has good processability over a wide range of molding conditions.

Physical Properties	Test Method	Values[1] English (SI)
Resin Properties		
Melt Index (I_2) @190°C/2.16 kg, g/10 min	ASTM D 1238	17
Density, g/ cm^3	ASTM D 792	0.950
DSC Melting Point, °F (°C)	Dow Method	262 (128)
DSC Crystallization Point, °F (°C)	Dow Method	239 (115)
Vicat Softening Point, °F (°C)	ASTM D 1525	259 (126)
Molded Plaque Properties[2]		
Hardness, Shore D	ASTM D 2240	62
Flexural Modulus, 2% Secant, psi (MPa)	ASTM D 790 B	114,000 (993)
Tensile Strength at Break, psi (MPa)	ASTM D 638	1800 (12)
Tensile Strength at Yield, psi (MPa)	ASTM D 638	3300 (23)
Tensile Elongation at Break, %	ASTM D 638	300
Tensile Elongation at Yield, %	ASTM D 638	3
Tensile Impact Strength, ft·lb/in.^{2} (kJ/m^2)	ASTM D 1822, Type S	140 (294)
Environmental Stress Crack Resistance, 122°F (50°C), F_{50}, 100% Igepal®, hrs.	ASTM D 1693	3
Brittleness Temperature, °F (°C)	ASTM D 746	<-105 (<-76)
Deflection Temperature Under Load @ 66 psi (0.45 MPa), °F (°C)	ASTM D 648	149 (65)

(1) Typical values, not to be construed as specifications. Users should confirm results by their own tests.
(2) Molded and tested in accordance with ASTM D4976.

-See "Handling Considerations" attached

Published 03/04

Form No 305-02181-0304X

CIPLAS by ITOCHU
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Phone: +1 (281) 762-4130

High Density Polyethylene

HI17050B

PRODUCT DESCRIPTION

HDPE injection copolymer for general injection molding application.

APPLICATIONS

Product used for general injection molding application, including toys and housewares.

TYPICAL PROPERTIES

Properties	Typical Value	Unit	Test Method
Melt Flow Index (190°C/2.16 kg)	17.0 - 20.0	g/10 min	ASTM D1238
Density	0.950 - 0.951	g/cm^3	ASTM D792
Vicat Softening Point	124 - 126	°C	ASTM D1525
Tensil Strength at Yield	3,290 - 3,350	psi	ASTM D638
Elongation at Break	290 - 310	%	ASTM D638
Flexural Modulus, 2% Secant	112,000 - 117,000	psi	ASTM D790B
ESCR, F_{50}	<3	h	ASTM D1693

PROPEL
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180M50

High Density Polyethylene

Injection Molding

Product Technical Datasheet

Product Description:

180M50 is a High Density Polyethylene manufactured using Nova Chemical's Sclairtech Solution Polymerization Technology. 180M50 is a natural colored polymer with excellent flow properties, very good processability and excellent gloss.

Recommended Applications:

HDPE 180M50 is designed to suite the following application areas:

- Injection molded housewares
- Thin wall molded products.

Typical Properties:

Tested Properties	Test Method	UOM	Values*
Resin Properties			
Melt Flow Index (190^{0}C & 2.16 Kg)	ASTM D 1238	gm/10 min	20
Density @ 23°C	ASTM D 1505	gm/cm^3	0.950
Mechanical Properties			
Tensile Yield Strength	ASTM D 638	MPa	22
Elongation at Yield	ASTM D 638	%	12
Flexural Modulus	ASTM D 790	MPa	750
Hardness	ASTM D 2240	Shore D	55
Thermal Properties			
Vicat Softening Point (10 N)	ASTM D 1525	°C	124

* Typical values not to be construed as specification limits. Values may change without any prior notice.

* Mechanical properties tested on injection molded specimen.

Recommended Processing Temperature: 180 – 210 °C

Packaging Information:

This material is packed and available in raffia bags with net content of 25.0 Kg only. The raffia bags used conforms to the minimum strength requirements of BIS, however, customer shall take due care while handling the bag. Prolonged exposure of these bags to sunlight may deteriorate the bag's performance and cause spillage and wastage. IOCL does not warranty loss of material due to poor material handling practices.

Regulatory Information:

HDPE 180M50 shall meet "Specification for Polyethylene for safe use in contact with Foodstuff, Pharmaceuticals and Drinking water" as per IS: 10146-1982. It also confirms to the positive list of constituents as per IS: 10141-1982. The grade and Additives incorporated shall meet with FDA: CFR Title 21, 177.1520, Olefin Polymers.

Storage & Handling:

Prevent HDPE Material from direct exposure to sunlight & heat to avoid quality deterioration. The storage location should be dry, dust free and the Storage temperature should not exceed 50 °C. Non - compliance to these precautionary measures can lead to degradation of the product causing Color changes, Odor & inadequate product performance. It is advised to process HDPE material within 06 months after delivery.

IndianOil

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Web: https://propel.indianoil.in

Hanwha | TOTAL

HDPE

HDPE for Pressure Pipe

▶XS10B

● Description

HDPE XS10B is a high performance black compound, with a MRS 10MPa – PE100 classification, containing hexene as co-monomer and is produced by a bimodal slurry loop process.

● Characteristics

- ▶ meeting the highest prescription and standards for PE pipe
- ▶ easy processing and safe welding properties
- ▶ high resistance to crack initiation and to slow crack growth

● Applications

- ▶ Gas, Portable water, Sewage, Industrial pipe

● Physical Properties

Properties	Test Method	Units	XS10B
Melt Index (190°C/5kg)	ISO 1133	g/10min	0.3
Density	ISO 1183	g/cm^3	0.959
Oxygen Induction Time (200°C)	ISO 11357-6	min	>20
Carbon Black Content	ISO 6964	%	2.0~2.5
Carbon Black Dispersion	ISO 18553	rating	≤3
Water Content	ISO 15512	ppm	≤300
Melting Temperature	Hanwha Total		129
Tensile Strength at Yield	ISO 527	MPa	26
Tensile Strength at Break	ISO 527	MPa	35
Elongation at Break	ISO 527	%	≥700
Flexural Modulus	ISO 178	MPa	1,100

*These are typical property values and are not to be construed as specifications.

LEE01319

Contacts

▶ **Polymer Application Tech. Team**

103, Dokgot 2-ro, Daesan-eup, Seosan-si, Chungcheongnam-do,
Korea, 31900

TEL : 82-41-660-6190 FAX : 82-41-660-6189

POLIMAXX

P901BK-LS

High Density Polyethylene (HDPE)

Description:

P901BK-Low Sag (PE100) is HDPE pipe compound produced by an advanced bimodal Hostalen process. P901BK-LS is special designed for the purpose of large pipe size and thick pipe wall thickness, providing great processability; chemical resistance; high thermal stability; good low sagging property; high crack resistance. P901BK-LS is specially created for producing a high performance in water pipe applications; drinking water, pressure, sewage and drainage pipes. It meets the pipe compound requirement of ISO 4427 and AS/NZS 4131.

Physical Properties:	Method	Unit	Value*
Melt Flow Rate	ISO 1133; (190°C,5kg)	g/10min	0.22
Density	ISO 1183	g/cm³	0.959
Tensile Strength at Yield	ISO 527	MPa	23
Tensile Strength at Break	ISO 527	MPa	≥ 31
Elongation at Break	ISO 527	%	≥750
Carbon Black Content	ISO 6964	%wt	2.25
Carbon Black dispersion	ISO 18553	-	≤ grade 2.5
Water Content	ISO 15512	ppm	≤ 300
Volatile Content	EN 12099	ppm	≤350
Oxidation Induction time	ISO 11357 @210°C	min	>50
MRS Classification	ISO 9080	MPa	10
Resistance to slow crack growth	ISO 13479 @80°C	hour	>500
Rapid crack propagation	ISO 13477; P_c, S4	bar	>10

Processing Technique
Recommended Process Temperature 190-220 °C
**However, the actual processing conditions depend on size, machine and any related processing

*Preliminary values are subjected to change in the interest of product development without notification.

Remark: The values presented on the above are typical laboratory average, not to be construed as specifications and may vary within moderate ranges. The applicability or the accuracy of this information or the suitable of our products cannot be guaranteed because the conditions of use on the part or our uses are beyond our control.

Product Data sheet

REV. 20180914

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Hanwha | TOTAL

HDPE

HDPE for Pressure Pipe

▶XS10N

● Description

HDPE XS10N is a high density polyethylene, with a MRS 10MPa – PE100 classification, containing hexene as co-monomer and is produced by a bimodal slurry loop process.

● Characteristics

- ▶ meeting the highest prescription and standards for PE pipe
- ▶ easy processing and safe welding properties
- ▶ UV stabilization

● Applications

- ▶ Portable water, Sewage, Industrial pipe

● Physical Properties

Properties	Test Method	Units	XS10N
Melt Index (190°C/5kg)	ISO 1133	g/10min	0.3
Density	ISO 1183	g/cm^3	0.948
Oxygen Induction Time (200°C)	ISO 11357-6	min	>20
Water Content	ISO 15512	ppm	≤300
Melting Temperature	Hanwha Total		129
Tensile Strength at Yield	ISO 527	MPa	26
Tensile Strength at Break	ISO 527	MPa	35
Elongation at Break	ISO 527	%	≥700
Flexural Modulus	ISO 178	MPa	1,100

*These are typical property values and are not to be construed as specifications.

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