Extrusion Molding Rotational

ExxonMobil

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ExxonMobil™ high density polyethylene product guide

Rotational molding***

ExxonMobil™ HDPE resins combine an excellent balance of low temperature toughness, stiffness, and environmental stress cracking resistance.

ExxonMobil™ HDPE resin grade	Melt index, (190°C, 2.16 kg), g/10 min	Density, g/cm³	ARM Impact strength at -40°F, ft·lb	ESCR [e,f], hr	Typical applications**	Features
HD 8512.29	1.3	0.944	52[g], 175[h]	45, 195	Water and chemical storage tanks, intermediate bulk containers and industrial parts	Hexene copolymer with superior toughness and stiffness. Long term UV Stabilizer. Pellet form.
HDP8512.29	1.3	0.944	52[g], 175[h]	45, 195	Water and chemical storage tanks, intermediate bulk containers and industrial parts	Hexene copolymer with superior toughness and stiffness, long term UV Stabilizer. Powder form
HD 8570.29	7.0	0.940	54[g], 175[h]	6, 25	Toys, spine boards, water sports and consumer articles	Hexene copolymer with superior toughness, stiffness and ductility. Long term UV Stabilizer. Pellet form.
HDP8570.29	7.0	0.940	54[g], 175[h]	6, 25	Toys, spine boards, water sports and consumer articles	Hexene copolymer with superior toughness, stiffness and ductility. Long term UV Stabilizer. Powder form.
HD 8660.29	2.0	0.941	68[g], 190[h]	40, 560	Water and chemical storage tanks, intermediate bulk containers and industrial parts	Hexene copolymer with superior toughness and stiffness. Long term UV Stabilizer. Pellet form.
HDP8660.29	2.0	0.941	68[g], 190[h]	40, 560	Water and chemical storage tanks, intermediate bulk containers and industrial parts	Hexene copolymer with superior toughness and stiffness, long term UV Stabilizer. Powder form
HD 8760.29	5.0	0.948	55[g], 140[h]	20, 20	Toys, spine boards, water sports and consumer articles	Hexene copolymer with superior toughness and stiffness, long term UV Stabilizer. Pellet form
HDP8760.29	5.0	0.948	55[g], 140[h]	20, 20	Toys, spine boards, water sports and consumer articles	Hexene copolymer with superior toughness and stiffness, long term UV Stabilizer. Powder form

e 10% Igepal Condition A, F_{50}
f 100% Igepal Condition A, F_{50}
g sample thickness 0.125 in
h sample thickness 0.250 in
** Indicative only
*** Please see ExxonMobil™ LLDPE portfolio for additional rotomolding solutions

Crosslinkable rotational molding

Paxon™ crosslinkable metallocene HDPE resins are designed to offer outstanding ESCR, toughness, thermal, impact and notch failure resistance. These resins are ideally suited for applications that require excellent part fill during processing and outstanding finished part performance.

Paxon™ HDPE resin grade	Crosslink potential	ARM Impact strength at -40°F, ft·lb	ESCR [k,l], hr	Applications*	Features
7003	2.5	64[i], 170[j]	>1000	Fuel and hydraulic fluid tanks	Metallocene copolymer, broad processing window, outstanding ESCR & toughness, natural pellet
7004	2.5	64[i], 170[j]	>1000	Fuel and hydraulic fluid tanks	Metallocene copolymer, broad processing window, outstanding ESCR & toughness, natural 20 & 35 mesh powders
7203	2.5	64[i], 170[j]	>1000	Fuel and hydraulic fluid tanks	Metallocene copolymer, broad processing window, outstanding ESCR & toughness, black pellet
7204	2.5	64[i], 170[j]	>1000	Fuel and hydraulic fluid tanks	Metallocene copolymer, broad processing window, outstanding ESCR & toughness, black 20 & 35 mesh powders
7003 XL	2.5	75[i], 190[j]	>1000	Fuel and hydraulic fluid tanks	Metallocene copolymer, low odor, outstanding ESCR & toughness, natural pellet
7004 XL	2.5	75[i], 190[j]	>1000	Fuel and hydraulic fluid tanks	Metallocene copolymer, low odor, outstanding ESCR & toughness, natural 20 & 35 mesh powders
7203 XL	2.5	75[i], 190[j]	>1000	Fuel and hydraulic fluid tanks	Metallocene copolymer, low odor, outstanding ESCR & toughness, black pellet
7204 XL	2.5	75[i], 190[j]	>1000	Fuel and hydraulic fluid tanks	Metallocene copolymer, low odor, outstanding ESCR & toughness, black 20 & 35 mesh powders

i sample thickness 0.125 in
j sample thickness 0.250 in
k 10% Igepal conditions, F_0
l 100% Igepal conditions, F_0
* Indicative only

Blow molding and profile extrusion

Paxon™ resins and ExxonMobil™ HDPE resins combine an excellent balance of processability, toughness, stiffness, and environmental stress cracking resistance.

HDPE resin grade	Melt index, (190°C, 2.16 kg), g/10 min	High load melt index, (190°C, 21.6 kg), g/10 min	Density, g/cm³	Vicat softening temperature, °C	ESCR [a], hr
Paxon AA45-004	0.35	n/a	0.945	121	>1000
Paxon AA48-002	0.22	n/a	0.948	122	>200
Paxon AA60-003	0.25	n/a	0.963	127	20
Paxon AB50-003	0.30	n/a	0.950	124	70
Paxon AD60-005	0.47	n/a	0.963	127	10
Paxon AD60-007	0.73	n/a	0.963	127	10
Paxon AF50-003	0.33	n/a	0.950	124	70
Paxon AL55-003	0.30	n/a	0.954	127	30
Paxon AS55-003	0.30	n/a	0.954	127	30
Paxon BA46-055	<0.10	5.5	0.946	127	>1000
Paxon BA50-100	<0.10	10	0.949	120	>800
Paxon BA50-120	<0.10	11	0.951	126	>800
Paxon BA53-055	<0.10	5.5	0.954	126	>1000
Paxon BA54-030	<0.10	2.8	0.956	129	>600
Paxon BU46-060	<0.10	6.3	0.945	124	>1000
Paxon BZ45-060	<0.10	6.3	0.946	-	>1000
Paxon EA55-003	0.43	n/a	0.954	-	-
Paxon FD60-018	<0.10	1.7	0.954	131	-
Paxon HYA021L	<0.10	5.0	0.954	126	>1000
ExxonMobil HD 9830.02	0.30	n/a	0.956	127	370
ExxonMobil HD 9856B	0.46	n/a	0.957	126	>1000
ExxonMobil HD 7800P	0.25	30	0.953	-	-

a 100% Igepal Condition B, F_{50}
** Indicative only

Non-toxicity

Please contact your ExxonMobil Chemical representative for more detailed information and/or actual compliance documents for the specific grade of interest.

Legal statements

The previously mentioned ExxonMobil HDPE resin grades are not intended for use in medical applications and should not be used in any such applications.

HDPE resin grade	Typical applications**	Features
Paxon AA45-004	HIC – Household & Industrial Chemical	Copolymer, exceptional ESCR & impact performance
Paxon AA48-002	HIC – Household & Industrial Chemical	Copolymer, good stiffness, ESCR & impact balance, antistatic additivation
Paxon AA60-003	LFP – Liquid Food Packaging	Homopolymer, high stiffness
Paxon AB50-003	HIC – Household & Industrial Chemical	Copolymer, good stiffness, ESCR & impact balance
Paxon AD60-005	LFP – Liquid Food Packaging	Homopolymer, easy processing
Paxon AD60-007	LFP – Liquid Food Packaging	Homopolymer, excellent processing
Paxon AF50-003	HIC – Household & Industrial Chemical	Copolymer, good stiffness, ESCR & impact, antistatic additivation
Paxon AL55-003	HIC – Household & Industrial Chemical	Copolymer, good stiffness & ESCR balance
Paxon AS55-003	HIC – Household & Industrial Chemical	Copolymer, good stiffness & ESCR balance, antistatic additivation
Paxon BA46-055	PFT – Petrol Fuel Tank, IBC – Intermediate Bulk Container	High MW copolymer, good processing & ESCR
Paxon BA50-100	LPBM – Large Part Blow Molding, sheet, TF – Thermoforming	High MW copolymer, good rigidity, ESCR, high impact strength
Paxon BA50-120	LPBM – Large Part Blow Molding, sheet, TF – Thermoforming	High MW copolymer, good rigidity, ESCR, high impact strength
Paxon BA53-055	Drum, drainage pipe	High MW copolymer, superior ESCR, high impact with good rigidity
Paxon BA54-030	Drum, drainage pipe	High MW copolymer, superior ESCR, high impact with good rigidity
Paxon BU46-060	IBC – Intermediate Bulk Container, PFT – Petrol Fuel Tank	High MW copolymer, superior ESCR, impact strength, UV stabilizer
Paxon BZ45-060	IBC – Intermediate Bulk Container, PFT – Petrol Fuel Tank	High MW copolymer, superior ESCR, impact strength, excellent processibility, UV stabilizer
Paxon EA55-003	Compounding	Copolymer, unstabilized
Paxon FD60-018	Compression molding	High MW homopolymer, powder
Paxon HYA021L	Drum	Superior ESCR, high impact strength and rigidity
ExxonMobil HD 9830.02	HIC – Household & Industrial Chemical, C&C – Caps and Closures	Bimodal, balanced ESCR, stiffness and impact with excellent processability
ExxonMobil HD 9856B	HIC – Household & Industrial Chemical, C&C – Caps and Closures	Bimodal, unique balance of stiffness and ESCR performance
ExxonMobil HD 7800P	Drainage pipe	Bimodal, copolymer, excellent combination of stiffness and ESCR

Injection molding**

ExxonMobil™ HDPE resins combine an excellent balance of processability, toughness, stiffness, and environmental stress cracking resistance.

ExxonMobil™ HDPE resin grade	Melt index, (190°C, 2.16 kg), g/10 min	Density, g/cm³	Notched Izod impact at -40°F, ft·lb/in	Flexural modulus, 1% secant, psi	Typical applications*	Features
HD 6601.29	5.0	0.948	1.0	160000	Roll out waste and recyclable item carts	Outstanding ESCR & toughness, hexene copolymer, UV Stabilizer
HD 6605.70	5.0	0.948	1.0	160000	Roll out waste and recyclable item carts	Outstanding ESCR & toughness, hexene copolymer, gas-fading resistant
HD 6704.18	4.5	0.952	1.1	190000	UN performance pails and lids	Hexene copolymer, optimized ESCR, impact & stiffness
HD 6706.17	6.7	0.952	0.92	190000	Pails, lids and automotive components	Hexene copolymer, optimized ESCR, impact & stiffness
HD 6706.62	6.7	0.952	0.92	190000	Pails, lids and automotive components	Hexene copolymer, optimized ESCR, impact & stiffness; antistatic
HD 6714.17	14	0.952	0.77	180000	Caps, closures and general purpose pails	Hexene coplomer, easy processing & good impact
HD 6719.17	19	0.952	0.61	180000	General purpose pails	Hexene coplomer, easy processing & good impact
HD 6719.62	19	0.952	0.61	180000	General purpose pails	Hexene coplomer, easy processing & good impact; antistatic
HD 6733.17	33	0.950	0.42	170000	Thin wall	Hexene copolymer, maximized processing performance
HD 6908.19	8.2	0.965	0.89	270000	Cases, crates & pallets	Homopolymer, outstanding stiffness, balanced impact & processing
HD 6908.65	8.2	0.965	0.89	270000	Cases, crates & pallets	Homopolymer, outstanding stiffness, balanced impact & processing, UV Stabilizer

* Indicative only ** Please see ExxonMobil™ LLDPE portfolio for additional injection molding solutions

Film extrusion

ExxonMobil™ HDPE resins combine an excellent balance of stiffness and tear strength.

ExxonMobil™ HDPE resin grade	Melt index, (190°C, 2.16 kg), g/10 min	High load melt index, (190°C, 21.6 kg), g/10 min	Density, g/cm³	1% Secant modulus MD, psi	Dart drop impact, g	Typical applications**	Features
HD 7845.30	0.45	28	0.958	150000[b]	<60[b]	Blown film	Bimodal, high thermal stability & stiffness
HD 7957.04	0.060	10	0.959	180000[c]	280[c]	Draw tapes	Bimodal, high MW, excellent tensile properties, high stiffness
HD 7960.13	0.060	9.3	0.952	150000[d]	320[d]	Thin films	Bimodal, high MW, excellent impact & toughness, high stiffness

b Film (1.0 mil/25.4 micron) made from HD 7845.30 resin on a 2.5 in. (63.5 mm) blown film line with a 2.5:1 blow-up ratio, a melt temperature of 405-425°F (207-218°C), a 60 mil (1.5 mm) die gap at a rate of 10 lbs/hr/in·die circumference (1.79 kg/hr/cm).
c Film (0.5mil / 12.7micron) made from HD7957.04 on a 1.97 inch (50mm) blown film line with a 4:1 blow-up ratio, a 7.5:1 stalk to diameter ratio, melt temp of 370°F (188°C), a 59 mil (1.5mm) die gap at a rate of 10.75lbs/hr in die circumference (1.92kg/hr/cm)
d Film (0.5 mil/12.7 micron) made from HD 7960.13 resin on a 1.97 inch (50 mm) blown film line with a 4:1 blow-up ratio, a 7.5:1 stalk to die diameter ratio, a melt temperature of 370°F (188°C), and a 59 mil (1.5 mm) die gap at a rate of 10.75 lbs/hr/in·die circumference (1.92 kg/hr/cm).
** Indicative only

Test method	Test method based on
Melt index (190°C, 2.16 kg)	ASTM D1238
High load melt index (190°C, 21.6 kg)	ASTM D1238
Density	ASTM D4883, ASTM D1505
Vicat softening temperature	ASTM D1525
Secant modulus MD, 1% secant	ASTM D882
Flexural modulus, 1% secant	ASTM D790B
Dart drop impact	ASTM D1709A
Notched Izod impact at -40°F	ASTM D256A
Environmental stress-crack resistance	ASTM D1693A, ASTM D1693B
Cross link potential	ExxonMobil method
Impact strength at -40°F	ARM

March 2020. Americas

Contact your ExxonMobil representative for country-specific availability of these resin grades produced in North America.

For more information about ExxonMobil™ HDPE and Paxon™ HDPE resins, visit:
exxonmobilchemical.com/hdpe

E0220-284E49

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