

commodity polymers

commodity polymers 2006

ExxonMobil
Chemical

Iotek
Exact

LDPE
LLDPE
HDPE
PPHP
PPCP
EVA
Ionomers
Plastomers



CARMEL OLEFINS LTD.

Ipethene
Capilene

LDPE
PPHP
PPCP
PPRCP



Novex
Innovex

LDPE
LLDPE


ADDIPLAST
en matière d'innovation

Addilene

PP Compounds

polyram
creative plastic compositions

Polyram

PP Compounds

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LDPE

- Materials produced on fully integrated, modern plant in Belgium
- Superb technical facilities
- High quality grades characterised by easy processing
- Other grades from ExxonMobil available, please enquire for details

Standard Grades

GRADE	MFI	DENSITY	DESCRIPTION
LD605BA	6.5	0.924	Medium flow, high stiffness. Suitable for heavy duty mouldings.
LD600BA	20.5	0.924	High flow mouldings, high stiffness. Ideal for technical parts, closures.
LD654	70	0.913	Very high flow mouldings. Suitable for soft & intricate articles and specialities.

All of the above grades are food contact approved and meet both FDA and EEC requirements.

ExxonMobil LDPE

PROPERTY	TEST METHOD	UNIT	GRADES		
			LD605BA	LD600BA	LD654
Melt Flow Index (190°C:2.16kg)	ASTM D1238	g/10 min	6.5	20.5	70
Density	ASTM D1505	g/cm ³	0.924	0.924	0.913
Peak Melting Point	ASTM D3418	°C	111	109	101
Crystallisation Point (DSC)	ASTM D3418	°C	96	92	83
Vicat Softening Point	ISO 306-A50	°C	93	91	75
Tensile Strength	ISO 527-2/1A/1	MPa	10	9	7
Elongation at Break	ISO 527-2/1A/50	%	120	140	150
E-modulus (0.05-0.25%)	ISO 527-2/1A/50	MPa	220	190	100
Shore Hardness - D (15 sec)	ISO 868	—	46	44	38
Recommended Processing Temp.	—	°C	160-240	160-240	160-240



CARMEL OLEFINS LTD.

LDPE Ipethene

- Manufactured using autoclave process
- Materials produced on fully integrated, modern plant in Israel
- Superb technical facilities
- High quality grades characterised by easy processing
- Other Ipethene grades available, please enquire for details

Standard Grades

GRADE	MFI	DENSITY	DESCRIPTION
600	7	0.915	Detergent packaging, heavy duty mouldings
800	20	0.915	High flow mouldings, closures
900	50	0.915	Very high flow mouldings, soft and intricate articles, closures

All the above grades are food contact approved and meet with FDA requirements.

LDPE Ipethene

PROPERTY	TEST METHOD	UNIT	GRADES		
			600	800	900
Melt Flow Index (190°C:2.16Kg)	ISO 1133	g/10 min	7	20	50
Density at 23°C	ISO 1183-C	g/cm ³	0.915	0.915	0.915
Bulk Density	ISO 60	g/cm ³	0.55	0.55	0.55
Tensile Yield at Stress, at 23°C	ISO / R527 (Type 2)	MPa	9.0	9.5	8.0
Tensile Strain at Break, at 23°C	ISO / R527 (Type 2)	%	500	350	120
Tensile Stress at Break, at 23°C	ISO / R 527 (Type 2)	MPa	10	12	8.0
Vicat Softening Point	ISO 306 A50	°C	87	82	80
Environmental Stress Cracking Resistance	ASTM D1693-80	—	Good	Good	Fair
Typical Processing Temperature	—	°C	240	210	180

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LLDPE

- Materials produced on a modern integrated plant
- Excellent quality
- Superb processing
- All grades offer excellent dimensional stability with low warpage
- Powdered grades also available

Standard Grades

GRADE	MFI	DENSITY	DESCRIPTION
LL6301XR	5	0.9355	General purpose grade. Ideal for large containers & housewares
LL8446.21	5	0.936	UV Stabilised. Suitable for the manufacture of technical parts.
LL6101XR	20	0.924	General purpose grade. Easy processing & good dimensional stability.
LL6201XR	50	0.926	Very high flow & excellent dimensional stability. Suitable for thin walled and intricate parts.

All grades are food contact approved and meet with EEC and FDA requirements.

ExxonMobil LLDPE

PROPERTY	TEST METHOD	UNIT	GRADES		
			LL6301XR/ LL8446.21	LL6101XR	LL6201XR
Melt Index	ASTM D1238	g/10 min	5	20	50
Density	ASTM D4703/D1505	g/cm ³	0.9355	0.924	0.926
Peak Melting Temp.	ASTM D3418	°C	125	123	123
Crystallisation Point	ASTM D3418	°C	108	104	105
Vicat Softening Point	ISO 306-A50	°C	114	96	90
Flexural Modulus (0.05-0.25%)	ISO 178	MPa	490	260	280
Yield Strength	ISO 527-2/1A/50	MPa	14	10	10
Elongation @ Break	ISO 527-2/1A/50	%	> 100	>100	> 100
Elongation @ Yield	ISO 527-2/1A/50	%	15	19	16
IZOD Impact	ISO 180-1A	kJ/m ²	40	47	43
Environmental Stress Crack Resistance	ASTM D1693	Hours	130	40	6

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HDPE

- Materials produced on modern integrated plant
- Excellent quality
- Superb processing properties
- Excellent dimensional stability

Standard Grades

GRADE	MFI	DENSITY	DESCRIPTION / APPLICATIONS
HMA 014	4	0.960	UV stabilised. Very high stiffness. Heavy duty applications.
HMA 035	8	0.964	UV stabilised. High stiffness and impact. Seating, crates.
HMA 025	8	0.964	General purpose grade, high stiffness and impact.
HMA 016	20	0.956	Fast cycling. Good impact strength. High gloss and dimensional stability.
HMA 018	30	0.954	Easy flow, high gloss and dimensional stability.

All grades are food contact approved and meet with EEC and FDA requirements.

ExxonMobil HDPE

PROPERTIES	TEST METHOD	UNITS	GRADES			
			HMA014	HMA025/ HMA035	HMA016	HMA018
Melt Index	ASTM D1238	g/10 min	4	8	20	30
Density	ASTM D4703 / D1505	g/cm ³	0.960	0.964	0.956	0.954
Peak Melting Temp.	ASTM D3418	°C	135	134	131	129
Crystallisation Point	ASTM D3418	°C	116	116	113	113
Flexural Modulus (0.05% - 0.25%)	ISO 178	MPa	1050	1150	900	900
Yield Strength	ISO 527-2/1A/50	MPa	25	26	23	22
Elongation @ Break	ISO 527-2/1A/50	%	>100	>100	>100	>100
Elongation @ Yield	ISO 527-2/1A/50	%	10	9	10	10
IZOD Impact	ISO 180-1A	kJ/m ²	11	6	4	4
Temp. of Deflection under Load	ISO 75-Be	°C	72	76	71	67
Environmental Stress Crack Resistance	ASTM D1693	Hours	7	3	3	<1

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PPHP

- Spheripol process
- Materials produced on a fully integrated & modern plant in France
- Superb technical facilities

Standard Grades

GRADE	MFI	DESCRIPTION
PP1063L1	8	General purpose
PP1364E1	12	Good flow, general purpose
PP1044L1	17	Good flow, antistatic
PP1374E2	22	Easy flow, general purpose
PP1055E2	52.5	Exceptional flow properties for fast cycling applications. Nucleated. Antistatic

All grades are food contact approved and meet with all EEC and FDA requirements.

ExxonMobil PPHP

PROPERTY	TEST METHOD	UNIT	GRADES				
			PP1063 L1	PP1364E1	PP1044L1	PP1374E2	PP1055E2
Melt Flow Rate (230/2.16)	ISO 1133	g/10min	8	12	17	22	52.5
Tensile Modulus of Elasticity (v=1mm/min)	ISO 527-2	MPa	1500	1250	1450	1400	1650
Tensile Yield at Stress (v=50mm/min)	ISO 527-2	MPa	33	31	34	32	35
Tensile Yield Strain (v=50mm/min)	ISO 527-2	%	8	9	8	9	8
Flexural Modulus	ISO 178	MPa	1350	1200	1400	1250	1500
IZOD Impact Strength notched +23°C	ISO 180/1A	kJ/m ²	2.5	2	2.5	2	1.5
Charpy Impact Strength notched +23°C	ISO 179/1eA	kJ/m ²	3.5	3.5	2.5	2.0	2
Shore Hardness D	ISO 868	-	65	72	62	70	74
Melting Point, DSC	ISO 3146	°C	160	158	160	159	162
Crystallisation Point, DSC	ISO 3146	°C	113	110	115	112	123
Heat Deflection Temp. HDT/A (1.8MPa) HDT/B (0.45 MPa)	ISO 75-2	°C	52	50	52	50	56
			87	78	88	79	101
Vicat Softening Temp. VST/A50 (10N)	ISO 306	°C	153	151	152	151	153
Density	ISO 1183	g/cm ³	0.9	0.9	0.9	0.9	0.9

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CARMEL OLEFINS LTD.

PPHP Capilene

- Produced using Himont technology
- Autoclave process
- Materials produced on a fully integrated modern plant
- Superb technical facilities
- Outstanding stiffness & superior thermal properties
- Superior transparency

Standard Grades

GRADE	MFI	DESCRIPTION
M45F	8	Medium flow, good mould release
R 50	12	Standard flow
T 50	25	High flow
U 77AV	35	Anti-static and nucleated, high flow, controlled rheology

All the above grades are food contact approved and meet with FDA requirements.

Capilene PPHP

PROPERTY	TEST METHOD	UNIT	GRADES			
			M45F	R50	T50	U77AV
M.F.I. (230°C:2.16Kg)	ASTM D-1238	g/10 min	8	12	25	35
Flexural Modulus of Elasticity	ASTM D-790	MPa	1600	1600	1550	1800
Tensile Strength at Yield	ASTM D-638	MPa	34	37	37	36
Elongation at Yield	ASTM D-638	%	12	11	10	10
Izod Impact, notched at 23°C	ASTM D-256	J/m	28	32	23	24
Izod Impact, notched at -20°C	ASTM D-256	J/m	—	—	—	—
Rockwell Hardness, R scale	ASTM D-785	—	94	97	97	102
Vicat Softening Temperature, 10N	ASTM D-1525	°C	154	155	155	155
H.D.T., 0.46 MPa	ASTM D-648	°C	95	97	97	110

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PPCP

- Spheripol process
- Materials produced on a fully integrated & modern plant in France
- Superb technical facilities

Standard Grades

GRADE	MFI	DESCRIPTION
PP7043L1	8	Medium Flow, good stiffness/ impact balance.
PP7064L1	16	Excellent combination of flow, impact & stiffness. Nucleated. Antistatic
PP7075L1	54	Exceptional flow properties for fast cycling applications. Nucleated. Antistatic

All grades are food contact approved and meet with FDA requirements.

ExxonMobil PPCP

PROPERTY	TEST METHOD	UNIT	GRADES	
			PP7043 L1	PP7064L1
Melt Flow Rate	ISO 1133	g/10min	8	16
Tensile Modulus of Elasticity (secant, v= 1mm/min)	ISO 527-2	MPa	1250	1600
Tensile Yield Stress (v=50mm/min)	ISO 527-2	MPa	24	25
Tensile Yield Strain (v=50mm/min)	ISO 527-2	%	5	4
Flexural Modulus (secant)	ISO 178	MPa	1050	1500
IZOD Impact Strength notched	ISO 180/1A	kJ/m ²	10	6
CHARPY Impact Strength notched +23°C ±0°C -20°C	ISO 179/1eA	kJ/m ²	12.5	8.5
			7.5	5.5
			5	4.5
Shore Hardness D	ISO 868	-	58	64
Melting Point, DSC	ISO 3146	°C	161	162
Crystallisation Point, DSC	ISO 3146	°C	113	127
Heat Deflection Temp. HDT/A (1.8 MPa) HDT/A (0.45 MPa)	ISO 75-2	°C	49	54
			80	100
Vical Softening Temp. VST/A/50 (10N)	ISO 306	°C	146	148
Density	ISO 1183	g/cm ³	0.9	0.9

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CARMEL OLEFINS LTD.

PPCP Capilene

- Produced using Himont technology
- Autoclave process
- Materials produced on a fully integrated modern plant
- Superb technical facilities
- Excellent stiffness/impact balance

Standard Grades

GRADE	MFI	DESCRIPTION
SG50	3.5	Medium flow, good stiffness and impact.
TG50	3.5	Medium flow, exceptional impact.
SL50	7	Superb combination of flow, impact & rigidity.
SR50	12	High flow, good impact. General purpose grade.
TR50	12	High flow, excellent impact
TU75AV	35	Excellent processability & impact. Nucleated. Antistatic.
SU75AV	44	Very high flow. Nucleated. Antistatic. Controlled rheology.

All the above grades are food contact approved and meet with FDA requirements.

Capilene PPCP

PROPERTY	TEST METHOD	UNIT	GRADES							
			SG50	TG50	SL50	SR50	TR50	TU75AV	SU75AV	
MFI (230°C:2.16Kg)	ASTM D-1238	g/10 min	3.5	3.5	7	12	12	12	35	44
Flexural Modulus of Elasticity	ASTM D-790M	MPa	1125	975	1350	1125	972	925	1075	1075
Tensile Strength at Yield	ASTM D-638M	MPa	27	26	27	29	20	20	25	25
Elongation at Yield	ASTM D-638M	%	12	12	12	12	13	13	10	10
Izod Impact, notched at 23°C	ASTM D-256	J/m	200	700	150	120	600	450	80	80
Izod Impact, notched at -20°C	ASTM D-256	J/m	70	100	60	55	110	100	50	50
Rockwell Hardness, R scale	ASTM D-785	—	81	78	84	88	82	82	90	90
Vicat Softening Temperature 10N	ASTM D-1525	°C	150	148	150	150	149	149	150	150
H.D.T, 0.46 MPa	ASTM D-648	°C	88	80	88	88	89	89	89	94

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CARMEL OLEFINS LTD.

PPRCP Capilene

- Himont Technology
- Autoclave Process
- Materials produced on fully integrated modern plant
- Superb technical facilities
- Improved transparency
- Ideal for packaging applications where contact clarity is required

Standard Grades

GRADE	MFI	DESCRIPTION
QM45F	9.5	Medium flow, excellent gloss and transparency. Nucleated.
QT73V	25	High flow, excellent gloss and transparency. Nucleated. Antistatic
QU73AV	38	High flow, excellent gloss and transparency. Nucleated. Antistatic

The above grades are food contact approved and meet with FDA requirements.

Capilene PPRCP

PROPERTY	UNIT	TEST METHOD	GRADES		
			QM45F	QT73V	QU73V
M.F.I. 230°C:2.16Kg	g/10 min	ASTM D-1238	9.5	25	38
Flexural Modulus of Elasticity	MPa	ASTM D-790	925	1125	1150
Tensile Strength at Yield	MPa	ASTM D-638M	25	25	25
Elongation at Yield	%	ASTM D-638M	12	14	14
Izod Impact, Notched at 23°C	J/m	ASTM D-256	55	60	55
Rockwell Hardness, R - Scale	—	ASTM D-785	80	—	—
Vicat Softening Temp, 10N	°C	ASTM D-1525	130	125	120
H.D.T - 0.46 MPa	°C	ASTM D-648	75	80	80



Reinforced Polypropylene

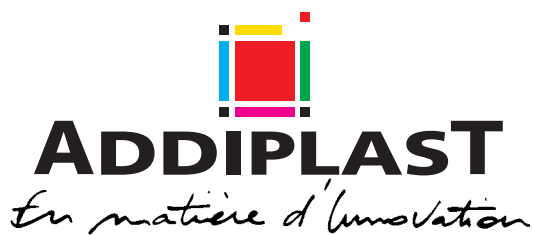
- Specialist compounder based in Haifa, Israel
- Extensive range of filled compounds for high strength and stiffness applications
- Coupled glass fibre reinforcement for improved adhesion to the polymer matrix
- Glass bead versions also available
- Custom made formulations available on request
- Grades available in natural and black
- Long glass fibre filled grades now available – please enquire for details

Standard Grades

GRADE	LOADING	CHEMICALLY COUPLED
PH300 G2	10% Glass Fibre	Yes
PH300 G4	20% Glass Fibre	Yes
PH300 G6	30% Glass Fibre	Yes

Polyam Reinforced Polypropylene

PROPERTY	UNIT	TEST METHOD	GRADES		
			PH 300G2	PH 300G4	PH 300G6
Density	g/cm	DIN 53479	0.95	1.01	1.13
MFI	G/10min	IISO 1133/230	2.16	5	14
Glass Content	%	N/A	10	20	30
Mould Shrinkage	%	N/A	0.5-0.7	0.32	0.1-0.3
Tensile Yield Strength	MPa	ASTM D638	45	70	80
Elongation at Break	%	ASTM D638	3	3	3
Flexural Strength	MPa	ASTM D790	70	100	105
Flexural Modulus	MPa	ASTM D790	2300	3200	5700
IZOD Impact Strength Notched	J/m	ASTM D256	60	95	105
HDT at Load 1.8 MPa	°C	DIN 53461	135	145	145
HDT at Load 0.45 MPa	°C	DIN 53461	-	153	153
Melting Point	°C	N/A	165	165	165
UL Flammability 1/8 thickness	-	UL 94	HB	HB	HB
Max. Temp. Continuous Use	°C	N/A	110	110	110
Max. Temp. At Short Peak Operation	°C	N/A	140	140	140



Polypropylene Compounds

- Addiplast is a speciality compounder based in France
- Excellent quality PP compounds
- State of the art facilities
- Focus on Automotive, Electrical, Electronic & Cosmetic industries
- Compounds include; Glass Fibre, Glass Bead, Talc, Chalk & Flame Retarded
- Special effects such as 'Soft Touch', Transluents, Metallic Effect & Glitter Effect
- Custom Compounds are available on request
- Plastribution stock range includes Talc Filled, Glass Filled, Flame Retardants and Plating Grades of PP

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'Exact' Plastomers

- Joint venture of DSM and ExxonMobil Chemical
- Developed using the latest metallocene catalyst technology
- Combine many of the physical properties of a rubber with processing advantages of thermoplastics
- Can be blended with PP to provide exceptional impact properties, especially at low temperatures
- Can be blended with or replace PVC, EVA, EPDM and TPEs to lower unit cost
- Excellent clarity

Standard Grades

GRADE	MFI	DENSITY
Exact 8201	1.1	0.882
Exact 0201	1.1	0.902
Exact 8203	3	0.882
Exact 0203	3	0.902
Exact 8210	10	0.882
Exact 0210	10	0.902
Exact 0230	30	0.902

The above grades are food contact approved and meet with FDA requirements.

'Exact' Plastomers

PROPERTY	TEST METHOD	UNIT	GRADES						
			8201	0201	8203	0203	8210	0210	0230
Melt Index Rate (2.16 kg/190°C)	ISO 1133	dg/10 min	1.1	1.1	3	3	10	10	30
Density (23°C)	ISO 1183	kg/m ³	0.882	0.902	0.882	0.902	0.882	0.902	0.902
Shore Hardness - A	ISO 868	—	85	—	85	—	85	—	—
Shore Hardness - D	ISO 868	—	29	42	28	41	23	37	34
DSC Peak Melting Point	ASTM D3418	°C	70	95	72	95	73	95	97
DSC Heat of Fusion	ASTM D3418	J/g	105	125	100	125	100	120	125
Vicat Softening Temp. (at 10N)	ISO 306	°C	55	87	51	83	46	77	72
Brittleness Temp.	ASTM D746	°C	<-75	<-73	<-75	<-73	<-75	<-73	<-73
Tensile Strength at Break	ISO 527-2	MPa	24	34	22	30	11	28	13
Elongation At Break	ISO 527-2	%	1750	1650	2000	1700	1550	1550	1250
Flexural Modulus	ISO 178	MPa	30	78	28	70	24	65	67
Notched IZOD @ 23°C & -40°C	ASTM D256	J/m	No break	No break	No break	No break	No break	No break	No break
Environmental Stress Crack Resistance	ASTM D1693	Hr	>1000	>1000	>1000	>1000	>1000	100	20
Mooney Viscosity ML (1+4) @ 125°C	ASTM D1646	Torque units	16.5	—	9.5	—	3.8	—	—

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Iotek™ Ionomers

- Glass like clarity
- High stiffness
- High impact resistance
- Excellent chemical resistance
- Material of choice for highly demanding applications such as golf balls, shoe reinforcements and perfume bottle stoppers
- Zinc and sodium versions available
- Please contact our sales office for full details of the grades available



Escorene Ultra EVA Copolymers

- Produced in Belgium
- Used in applications where softness and flexibility are required
- Wide range of melt flows, from mfi 1.7 to mfi 20 are available
- Vinyl Acetate contents in the range of 3-30
- Please contact our sales office for full details of the grades available



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