

POLYETHYLENE & SPECIALTY POLYMERS PORTFOLIO

POCKET REFERENCE GUIDE



Westlake
Polyethylene™

TRUCOAT®

EXTRUSION COATING RESINS

Westlake produces the industry's most comprehensive selection of LDPE extrusion coatings resins. Our LDPE polymers have been specifically designed for use with a variety of substrates to meet the challenges of food and medical packaging markets as well as perform in heavier, more industrial coating applications.

TRUCOAT® – LDPE

Grade	MI (g/10 min.)	Density (g/cm ³)	Typical Applications
EC1550	3.5	0.917	Food & medical packaging
EC1924	4.2	0.923	
EC472	5.0	0.923	Paper coating for liquid packaging, cups, folding cartons
EC4041	5.6	0.922	
EC479	5.7	0.9215	
EC808	7.0	0.917	General purpose extrusion coating and laminating
EC474	8.0	0.918	Light weight extrusion coating and laminating
EC4042	10.0	0.917	
EC850	12.5	0.915	High speed coating applications
EC1390	15	0.915	
EC4056	80	0.909	Carpet backing, blending
EC812	200	0.909	

TRUCOAT® – HDPE

Grade	MI (g/10 min.)	Density (g/cm ³)	Typical Applications
MC2007	10.0	0.946	Release paper, spiral round can linings, grease barrier applications



LDPE FOR FILM AND INJECTION MOLDING APPLICATIONS

Westlake offers a broad range of LDPE grades for a variety of film and injection molding applications.

LDPE – FILM

Grade	MI (g/10 min.)	Density (g/cm ³)	Typical Applications
EF600	0.18	0.920	
EF601	0.25	0.919	
EF602	0.60	0.919	Heavy duty bags, industrial shrink film & bubble stabilizers
EG617	0.75	0.922	
EF403	0.80	0.924	
EF603	1.2	0.919	Medium duty shrink film
EF412	2.0	0.923	Clarity film
EF606	2.2	0.919	Trash bags
EF706	2.3	0.923	Foam & cast film
EF612	2.5	0.920	Clarity film
EP413	3.0	0.923	
EG736	3.0	0.923	Bakery bags & cast film
EG378	4.0	0.922	
EF677	7.0	0.919	Foams
EF608	9.5	0.919	Compounding base

LDPE – INJECTION MOLDING

Grade	MI (g/10 min.)	Density (g/cm ³)	Typical Applications
EN1807	0.7	0.921	
EN1817	1.7	0.920	
EM800	1.7	0.918	
EM1550	3.5	0.918	Food & medical packaging
EM808	7.0	0.917	
EM1870	7.4	0.921	
EM811	20	0.916	
EM182	20	0.920	Fitments & personal hygiene
EM812	200	0.909	Surgical scrub brushes



Westlake produces both butene and hexene LLDPE copolymers for food, consumer, and industrial films. The extensive LLDPE portfolio includes general purpose, high clarity and high performance grades.

BUTENES

HIFOR[®] — LLDPE

Westlake offers a broad slate of butene LLDPE grades suitable for a wide variety of film applications.

Grade	MI (g/10 min.)	Density (g/cm ³)	Typical Applications
LF1010	0.8	0.922	Shrink film
LF1022	1.1	0.918	Food storage bags
LF1020	1.1	0.919	General purpose film
LF1040	2.0	0.919	Stretch wrap
LF1030	2.5	0.919	Cast stretch film
LF1050	3.5	0.925	Cast film

HIFOR CLEAR[®]

HIFOR CLEAR[®] butene LLDPE offer enhanced clarity for film applications.

Grade	MI (g/10 min.)	Density (g/cm ³)	Typical Applications
LF74565	0.8	0.923	Bakery film



HEXENES

HIFOR® LLDPE

Westlake offers a broad slate of hexene LLDPE resins suitable for film applications from food packaging to agricultural film.

Grade	MI (g/10 min.)	Density (g/cm ³)	Typical Applications
LT74157	0.5	0.920	Agricultural film
LF74859	0.6	0.925	High strength film
LF2010	0.85	0.9255	Shrink film
LF2020	1.0	0.919	General purpose film
LT74104	1.0	0.920	
LF2041	2.0	0.918	Cast film
LF2052	3.5	0.918	

HIFOR XTREME®

HIFOR XTREME® hexene resins are specially formulated for demanding film applications requiring high strength and toughness.

Grade	MI (g/10 min.)	Density (g/cm ³)	Typical Applications
LF2005	0.50	0.9155	High strength film
SC74858		0.917	
SC74882	0.85	0.915	High performance trash bags
LF74874	0.85	0.9155	Heavy duty film & trash bags
SC74873		0.918	

HIFOR CLEAR®

HIFOR CLEAR® hexene resins provide an excellent balance of both toughness and enhanced clarity for film applications.

Grade	MI (g/10 min.)	Density (g/cm ³)	Typical Applications
LF74850	0.55	0.924	Shrink film
LF74580	0.6	0.925	High strength film
SC74875	0.75	0.915	Heavy duty film
SC74558	1.0	0.920	Frozen food film

MXSTEN[®]

PLASTOMERS

The MXSTEN[®] portfolio of plastomer resins offers the following benefits in multilayer barrier and high performance films:

- ▶ Superior melt strength, processability, and bubble stability
- ▶ Outstanding dart impact, tear properties, and puncture resistance, even at cold temperatures
- ▶ Suitable for a variety of high performance applications such as meat and poultry packaging, agricultural film, irrigation tubing, and heavy duty protective packaging

MXSTEN[®] PLASTOMER

Grade	MI (g/10 min.)	Density (g/cm ³)	Typical Applications
CV77541	0.5	0.906	Blown film & extrusion
CV77543	0.5	0.906	Blown film, suitable for E-beam post treatment
CV77526	0.7	0.910	Blown film
CV77516	1.0	0.910	
CV77528	2.0	0.910	Cast & blown film



TYMAX[®]

TIE LAYER RESINS

The portfolio of TYMAX[®] materials are engineered to provide uniform adhesion in challenging multi-layered barrier film structures.

- ▶ Technology to tie polyethylene to EVOH, Nylon, and PET
- ▶ Customized acid numbers and base polymers to control adhesion
- ▶ Designed for use across all extrusion converting processes

TYMAX[®] FULLY FORMULATED

Grade	MI (g/10 min.)	Density (g/cm ³)	Base Polymer	Typical Adhesive Application	Fabrication Method
GT1004	5.0	0.923	LDPE	PE, PA, EVOH	Extrusion coating
GT1057	7.5	0.917			
GT4525	0.75	0.910	Plastomer	PE, PA, EVOH	Blown & cast film
GT4157	1.0	0.920	LLDPE	PE, PA	
GT4408	2.3	0.919	LLDPE	PE, PA, EVOH	
GT7058	2.7	0.943	Acrylate	PE, PET, PA, EVOH	
GT4612	3.6	0.920	LLDPE	PE, PA, EVOH	
GT7001	6.0	0.942	Acrylate	PE, PET, PA, EVOH	Extrusion coating
GT7501	7.0	0.942			

TYMAX[®] HIGHLY FUNCTIONALIZED

Grade	MI (g/10 min.)	Density (g/cm ³)	Base Polymer	Typical Adhesive Application	Fabrication Method
GT4300	8.0	0.918	LLDPE	PE, PA, EVOH	Blown & cast film
GT7000	10.0	0.951	Acrylate	PE, PET, PA, EVOH	



ELEVATE®

EVA COPOLYMERS

The ELEVATE® portfolio contains a variety of EVA copolymers developed for a wide variety of film, thermal lamination, hose & tubing, blow-molding, cap liner, foam, and hot melt adhesive applications.

ELEVATE® EVA

Grade	MI (g/10 min.)	VA %	Typical Applications
EF437	2.0	2.5	High clarity packaging
EF439	1.4	4.0	High impact film
EF546	2.0	6.0	Foams
EF561	0.55	6.5	Frozen food packaging
EB591	2.0	9.0	Tubing
EF510	0.55	10.0	Frozen food packaging
EF532	8.0	12.0	Thermal lamination
EB502	0.55	12.5	Heat seal layer
EF526	15	16.0	Extrusion coating
EF539	30	18.0	Thermal lamination
EB508	0.7	18.5	Heavy duty bags
EF528	2.5	18.5	Tubing
EM531	500	18.5	Hot melt adhesives
EF206	6.0	20.0	Meat & poultry
EM281	25	28.0	Solar film
EM280	6.0	28.0	
EM283	150	28.0	
EM284	400	28.0	Hot melt adhesives
EM285	850	30.0	



Westlake produces a wide range of ethylene acrylate copolymers which improve performance and adhesion in a variety of demanding applications.

- ▶ Improves impact properties in PET and engineering polymers over a wide range of temperatures.
- ▶ Ideal for bonding unlike substrates in thermal laminations.
- ▶ Great for protecting highly sensitive products such as the newest thin-film photovoltaic technologies.

EMAC[®] Ethylene Methyl Acrylate Random Copolymers

Grade	MI (g/10 min.)	Acrylate %	Typical Applications
SP2413	0.6	16.5	Flexible films
SP2255	2.1	17.0	
SP2242	3.5	18.0	
SP2205	2.0	20.0	
SP2207	6.0	20.0	Extrusion coatings & lamination
SP2409	8.0	20.0	
SP2220	20	20.0	Masterbatch carrier resin
SP2408	40	20.0	Compounding
SP2202	0.45	21.0	PET impact modifier
SP2260	2.1	24.0	Tie layers to PET & PET impact modifier
SP2268	10	24.0	Compounding

EMAC+[®] Ethylene Methyl Acrylate Block Copolymers

Grade	MI (g/10 min.)	Acrylate %	Typical Applications
SP1330	2.0	22.0	Tie layers to PET
SP1358	2.6	21.5	Flexible films
SP1307	6.0	20.0	Compounding
SP1501	25	20.0	

EBAC[®] Ethylene Butyl Acrylate Random Copolymers

Grade	MI (g/10 min.)	Acrylate %	Typical Applications
SP1802	0.5	22.5	Flexible films & PET impact modifier
SP2811	20	20.0	Solar film

EBAC+[®] Ethylene Butyl Acrylate Block Copolymers

Grade	MI (g/10 min.)	Acrylate %	Typical Applications
SP1903	0.45	18.0	Flexible films

EPOLENE®

SPECIALTY POLYMER WAXES

Westlake offers a series of medium-to-low molecular weight polyethylene and polypropylene polymers under the EPOLENE® trade name. They are useful in the plastics industry as lubricants for PVC, processing aids, mold release agents, dispersion aids, and coupling agents. They are also widely used as base polymers for hot melt adhesives, emulsions, polymer modified asphalt for paving and roofing, and pavement-stripping compounds, as well as petroleum wax modifiers for use in candles, investment casting, cable filling, and various paperboard coatings.

All EPOLENE® products come standard in pellet form. Select grades are also offered in powder form. Please contact us to learn more.

EPOLENE® NON-EMULSIFIABLE – LOW MOLECULAR WEIGHT

Grade	Polymer Type	Soft Point (°C)	Density (g/cm ³)	Viscosity @ 125°C (cP)	Viscosity @ 140°C (cP)
N-10	PE	110	0.925	1,500	1,100
N-11	PE	111	0.921	350	250
N-14	PE	108	0.920	150	100
N-15	PP	164	0.902	–	–
N-21	PE	121	0.950	600	400
N-30	PE	110	0.924	1,050	700
N-34	PE	104	0.910	450	300
N-35	PE	104	0.913	700	–



EPOLENE® EMULSIFIABLE – OXIDIZED LOW MOLECULAR WEIGHT

Grade	Polymer Type	Soft Point (°C)	Density (g/cm ³)	Acid No. (mg KOH/g)	Viscosity @ 125°C (cP)	Viscosity @ 140°C (cP)
EE-2	Ox-PE	112	0.960	17	1,500	900
E-10	Ox-PE	105	0.942	17	800	525
E-14	Ox-PE	104	0.939	17	375	260
E-14E	Ox-PE	104	0.939	17	225	160
E-16	Ox-PE	105	0.943	17	700	500
E-20	Ox-PE	112	0.960	17	1,500	900
E-43	Ma-PP	160	0.934	45	–	–

EPOLENE® COATING – HIGHLY BRANCHED MEDIUM MOLECULAR WEIGHT

Grade	Polymer Type	Soft Point (°C)	Density (g/cm ³)	Acid No. (mg KOH/g)	Viscosity @ 125°C (cP)	Viscosity @ 190°C (cP)	MI (g/10 min.)
C-10	PE	103	0.906	–	18,600	3,550	2,250
C-12	PE	118	0.907	–	212,000	31,400	400
C-13	PE	137	0.913	–	–	–	200
C-15	PE	101	0.906	–	8,950	1,800	4,200
C-16	Ma-PE	103	0.908	2	16,650	2,850	1,700
C-17	PE	>133	0.917	–	–	–	19
C-18	Ma-PE	101	0.905	2	7,750	1,550	4,200
C-23	PE	108	0.909	–	–	180,000	80
C-24	PE	–	0.912	–	–	–	58
C-26	Ma-PE	133	0.917	8	–	–	8
C-29	Ma-PE	105	0.915	4	760	–	–



PIVOTAL™

Performance PCR

Westlake offers the PIVOTAL™ portfolio designed for performance at various levels of post-consumer recycle (PCR) content. These engineered single pellet solutions are highly uniform and thoroughly tested.

- ▶ Developed to consistently perform like virgin resin with minimal lot-to-lot variability
- ▶ Designed to achieve specific dart and MD Tear performance properties
- ▶ Specifically formulated to process well during conversion, enabling down gauging, and producing films with uniform appearance



PIVOTAL™ PCR

Grade	MI (g/10 min.)	Density (g/cm ³)	PCR (%)	Typical Applications
RA81025	0.85	0.915	25	Trash bags, monolayer film
RA81035 RA81045	0.85	0.915	35 45	Heavy duty film, multi-layer blown film



STEP^{UP}TM

Recycle Modifiers

Westlake STEPUPTM recycle modifiers are designed to address the typical challenges encountered with the incorporation of polyethylene-based PCR or internal recycle streams in flexible applications.

- ▶ Effectively bolsters film strength properties often affected by recycled content
- ▶ Improves bubble stability and down-gauging potential
- ▶ Capable of being used in applications requiring certain FDA 21 CFR clearances

STEPUPTM MODIFIERS

Grade	MI (g/10 min.)	Density (g/cm ³)	Modifier Benefits
PM30200	0.5	0.906	High performance, bubble stability, down gauging
PM30100	0.7	0.910	Balance viscosity of melt blends



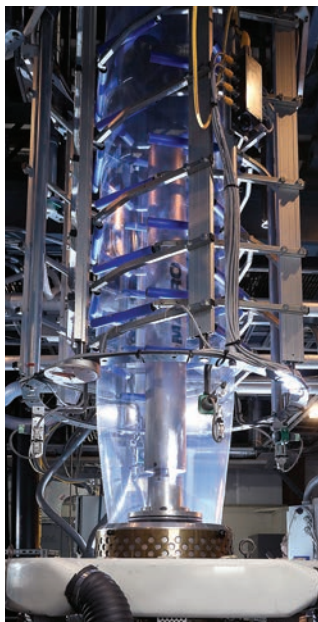
Customer Solutions Center

FOCUSED. COLLABORATIVE. FLEXIBLE.

Partner with us to develop, optimize, and scale up your critical projects

SERVICES OFFERED

- ▶ Application development support
- ▶ Commercial scale 5 layer coating and laminating line
- ▶ Commercial scale 7 layer blown film capability
- ▶ Twin screw compounding capability
- ▶ Commercial scale 3 layer cast film line
- ▶ Lab capability to develop and test hot melt adhesives & emulsions
- ▶ Extensive analytical and polymer characterization lab capabilities
- ▶ Full scale physical testing lab for evaluating film and molded samples



**Flexible scheduling to
customize and execute
customer trials**

TECHNICAL SUPPORT TEAM

- ▶ Technical Service Engineers
- ▶ Product Development Engineers
- ▶ PhD Polymer Scientists
- ▶ Senior Polymer Chemists
- ▶ Laboratory Support Staff
- ▶ TQM Specialists



Contact us to learn more or schedule a visit to our
Customer Solutions Center 1.800.545.9577





Westlake

Polyethylene™

Enhancing your life every day®

Contact us today to learn more about our products and capabilities, or schedule a visit to our Customer Solutions Center.

Westlake Polymers LLC

2801 Post Oak Boulevard, Suite 600
Houston, Texas 77056
1.800.545.9577



Get connected:   

[Westlake.com](https://www.westlake.com)

The information presented in this brochure is made available solely for general information purposes. Westlake Polymers does not warrant the accuracy, completeness, or usefulness of this information. Any reliance the user places on such information is strictly at the user's own risk.

ELEVATE®, EPOLENE®, ENERGX®, EMAC®, EMAC+®, EBAC®, EBAC+®, HIFOR®, HIFOR Clear®, HIFOR Xtreme®, MXSTEN®, PIVOTAL™, STEPUP™, TRUCOAT®, TYMAX® and Westlake are trademarks of Westlake Polymers.

All Westlake Polymers' products are sold pursuant to Westlake Polymers' standard terms and conditions of sales which are available upon request and Westlake Polymers makes no other warranties either expressed or implied, including but not limited to the warranties of merchantability and fitness for particular purpose.



Printed using recycled paper