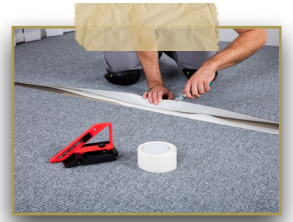
ENTEC

POLYMERS FOR ADHESIVE COMPOUNDS

ENTEC POLYMERS | 1900 Summit Tower Blvd., Suite 900 | Orlando, FL 32810 | P: 833.609.5703 | EntecPolymers.com

ENTEC POLYMERS OFFERS A VARIETY OF DIFFERENT POLYMERS FOR USE IN ADHESIVE FORMULATIONS

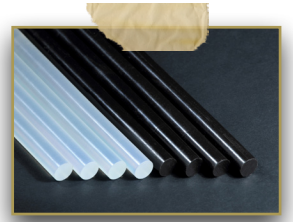
Carpet-Tape Adhesives



Structural Adhesives

Glass Adhesives

Glue Sticks



Pressure Sensitive Adhesives

Specialty Adhesive Applications

These polymers are commonly used in hot melt adhesives. These polymers may be used as a main polymer portion of the adhesive or as a modifier in the adhesive formulation.

Hot melt adhesives are often based on EVA or ethylene acrylate copolymers but can also utilize polyolefin elastomers (POE, PBE and OBC) for specialized applications.

PB-1 based hot melt adhesives are used in woodworking, mattress assembly and non-woven hygiene applications as well as packaging where they provide high flow, good wetting, excellent thermal stability and flexibility. PB-1 is also used as a modifier in hot melt adhesives where it can increase the cohesive strength and extend the open-time.

Ethylene acrylic acid copolymer based adhesives are commonly used for bonding glass, leather, textiles and metals.

Olefin block copolymers (OBC) can be used to replace SIS / SBS in pressure sensitive adhesive applications.

TPUs are also used in adhesives. However, they are typically either dissolved in a solvent or applied as a film or via an extrusion process. Lubrizol Pearlstick™ TPU is for solvent based adhesives. Common solvents used include acetone, MEK, THF, toluene, xylene, ethyl acetate and cyclohexanone. Pearlstick™ products are polycaprolactone and polyester based TPUs with a hardness range of Shore A 89 to A 93.

Lubrizol Pearlcoat™ are a range of special linear TPUs used in the melt coating process on textile substrates obtained by extrusion, calendaring and PVC compounding. Their hardness ranges from Shore A 70 to A 94.

Lubrizol Pearlbond™ products are based on polyester, polyether and polycaprolactone TPUs and can be amorphous or semi-crystalline. They have activation temperatures of <= 110°C, <= 100°C or <=80°C are available in a hardness range from Shore A 55 to D54 and are most commonly utilized as adhesive films.

POLYMERS FOR ADHESIVE COMPOUNDS

POLYMER TYPE	PRODUCER	TRADE NAME	GRADE	PERCENT COMONOMER	MELT FLOW RATE
EVA	Celanese	ATEVA®	1850A	18	150
EVA	Celanese	ATEVA®	1880A	18	500
EVA	Celanese	ATEVA®	2830A	28	150
EVA	Celanese	ATEVA®	2842A	28	400
EVA	Celanese	ATEVA®	2842AC	28	400
EVA	Celanese	ATEVA®	2850A	28	850
EVA	Celanese	ATEVA®	4030A	40	55
EVA	Dow	ELVAX™	420	18	150
EVA	Dow	ELVAX™	410	18	500
EVA	Dow	ELVAX™	4320	25	150
EVA	Dow	ELVAX™	4310	25	500
EVA	Dow	ELVAX™	220W	28	150
EVA	Dow	ELVAX™	210W	28	400
EVA	Repsol	PRIMEVA®	P1550M	15	5000 cP
EVA	Repsol	PRIMEVA®	P28025	28	25
EVA	Repsol	PRIMEVA®	P28150	28	150
EVA	Repsol	PRIMEVA®	P28800	28	800
EVA	Repsol	PRIMEVA®	P2850M	28	5000 cP
EVA	Repsol	PRIMEVA®	P33400	33	400
EVA	Repsol	PRIMEVA®	P40055	40	55
EMA	Dow	ELVALOY™ AC	12024S	24	20
EMA	Dow	ELVALOY™ AC	15024S	24	50
EEA	Dow	ELVALOY™ AC	2103	19.5	21
EBA	Dow	ELVALOY™ AC	34035	35	40
EBA	Repsol	EBANTIX®	E27150	27	150
EMAA	Dow	NUCREL™	599	10	450
EMAA	Dow	NUCREL™	699	11	95
EMAA	Dow	NUCREL™	925	15	25
EMAA	Dow	NUCREL™	960	15	60

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POLYMER TYPE	PRODUCER	TRADE NAME	GRADE	DENSITY	MELT FLOW RATE
POE	Dow	AFFINITY™	GA 1950	0.874	500 (estimated)
POE	Dow	AFFINITY™	GA 1900	0.870	1000 (estimated)
POE	Dow	AFFINITY™	GA 1875	0.870	1250 (estimated)
POE	Dow	ENGAGE™	8137	0.864	13
POE	Dow	ENGAGE™	7447	0.865	5
POE	Dow	ENGAGE™	8200	0.870	5
POE	Dow	ENGAGE™	8407	0.870	30
PBE	Dow	VERSIFY™	4301	0.868	25
PBE	Dow	VERSIFY™	4200	0.876	25
OBC	Dow	INFUSE™	9807	0.868	15
OBC	Dow	INFUSE™	9817	0.877	15
OBC	Dow	INFUSE™	900	0.88	30
PB-1	Lyondell	*Koattro*	KTMR05	0.870	1.3
PB-1	Lyondell	*Koattro*	KTAR05	0.890	0.5
PB-1	Lyondell	*Koattro*	DP8911ME	0.895	200
PB-1	Lyondell	*Koattro*	DP8510M	0.897	40
PB-1	Lyondell	*Koattro*	M1200M	0.908	1200
PB-1	Lyondell	*Koattro*	0801M	0.915	200

POLYMER TYPE	PRODUCER	TRADE NAME	GRADE	DENSITY	MELT FLOW RATE	PEAK MELTING TEMP (DSC), °C	GLASS TRANSITION (DSC), °C	CRYSTALLIZATION TIME (DSC), min.	MINIMUM ACTIVATION TEMP, °C
TPU	Lubrizol	Pearlbond™	301	Polyester	55	65	-30	>50	90
TPU	Lubrizol	Pearlbond™	302	Polyester	55	75	-30	>50	100
TPU	Lubrizol	Pearlbond™	360	Polyester	68	75	-49	>50	110
TPU	Lubrizol	Pearlbond™	700 EXP	Polyester	97	112	-23	5	110
TPU	Lubrizol	Pearlbond™	702 EXP	Polyester	93	93	-30	27	100
TPU	Lubrizol	Pearlbond™	960	Polyether (aliphatic)	69	72	-10	>50	100
TPU	Lubrizol	Pearlbond™	1160	Polyester	90	49	-39	37	74
TPU	Lubrizol	Pearlbond™	1160L	Polyester	90	49	-39	36	65