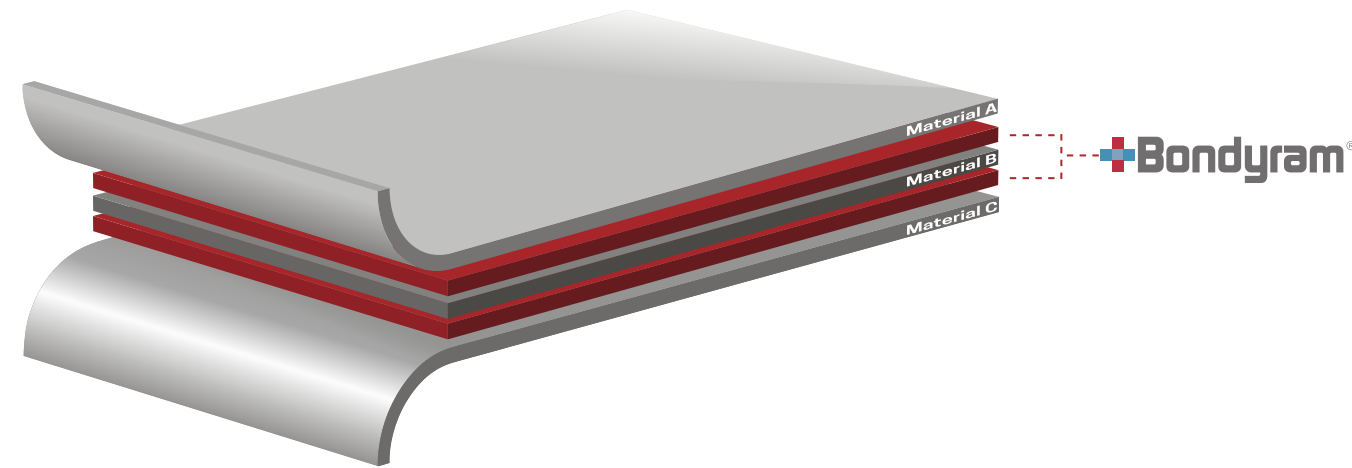


EVA Based Tie Resins

Bondyram TL [®] Grade	MFI 190°/2.16 kg (g/10min)	Density (g/cm ³)	Melting Point °C/°F	Vicat Softening Point °C/°F	TL
Bondyram [®] TL9210	1	0.94	84/183	63/145	Concentrate
Bondyram [®] TL9203	1.5	0.94	84/183	63/145	Ready to use

Tie Resins for ACP (Aluminum Composite Panels)

Bondyram TL [®] Grade	MFI 190°/2.16 kg (g/10min)	Density (g/cm ³)	Melting Point °C/°F	Vicat Softening Point °C/°F	Base Resin
Bondyram [®] TL4313	1	0.944	120/248	87/189	PE
Bondyram [®] TL9213	1.6	0.93	92/198	61/142	EVA



Bondyram[®] Eco TL - Modified Polyolefin

Bondyram[®] EcoTL is especially designed as compatibilizer to improve the processability of recycling barrier films containing EVOH or polyamide. It can be used in PE or PP films.

Bondyram TL [®] Grade	MFI 190°/2.16 kg (g/10min)	Density (g/cm ³)	Melting Point °C/°F	Vicat Softening Point °C/°F	Tg °C/°F	MAH graft level
Bondyram [®] Eco TL100	2	0.9	118/244	85/185		High
Bondyram [®] Eco TL200	1	0.86	42/108		(-45)/(-65)	High

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	Flexible Film Applications TL4114, TL4808, TL4110, TL4108, TL1240 (for PP)
	Blow molding and Tube TL1221 (for PP), TL1235, TL4114, TL4108, TL4808 (for PE)
	Rigid Packaging TL1235 (for PP), TL4530 (for PET), TL4402, TL4403 (for PS)
	Bi Oriented Film TL4702T, TL4706 (for PE)
	ACP TL4313, TL4114 (PE BASE)
	Extrusion Lamination TL4114 (for PE), TL3230 (for PET), TL1350 (for PP)



Processing:

Bondyram[®] TL products can be processed on standard Co-extrusion equipment.

Packaging:

Supplied in pellet form, 20kg PE bags, 600kg cardboard boxes.

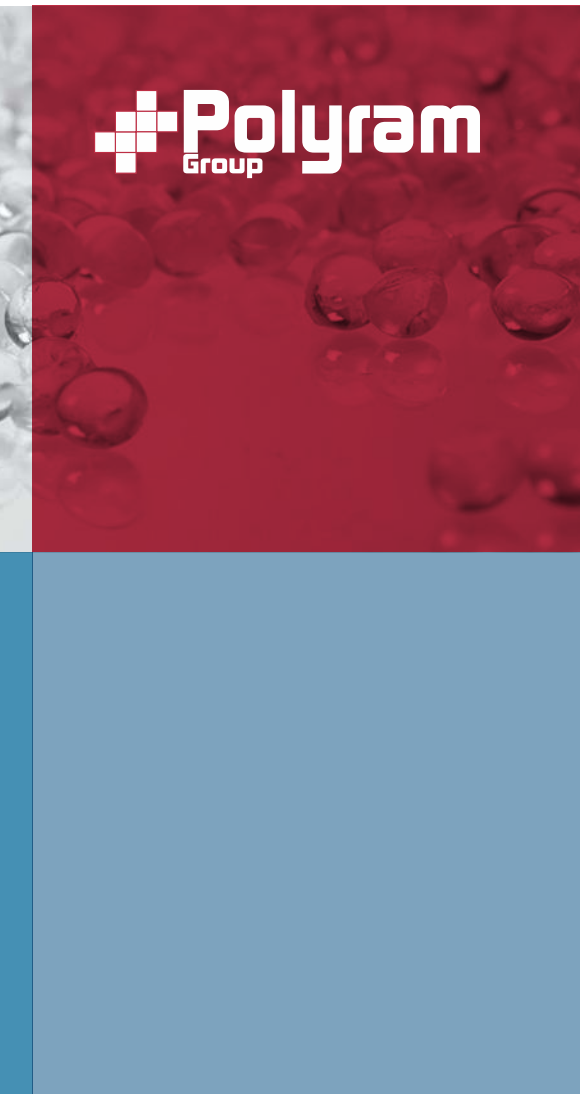
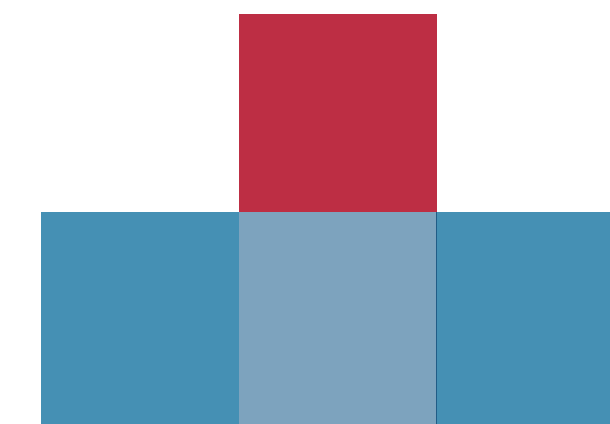
Food contact approvals:

Monomers and additives are listed as authorized monomers/additives in Annex I of Regulation (EC) No. 10/2011

USA: conform to FDA 21CFR 175.105 (adhesives) for indirect food contact.



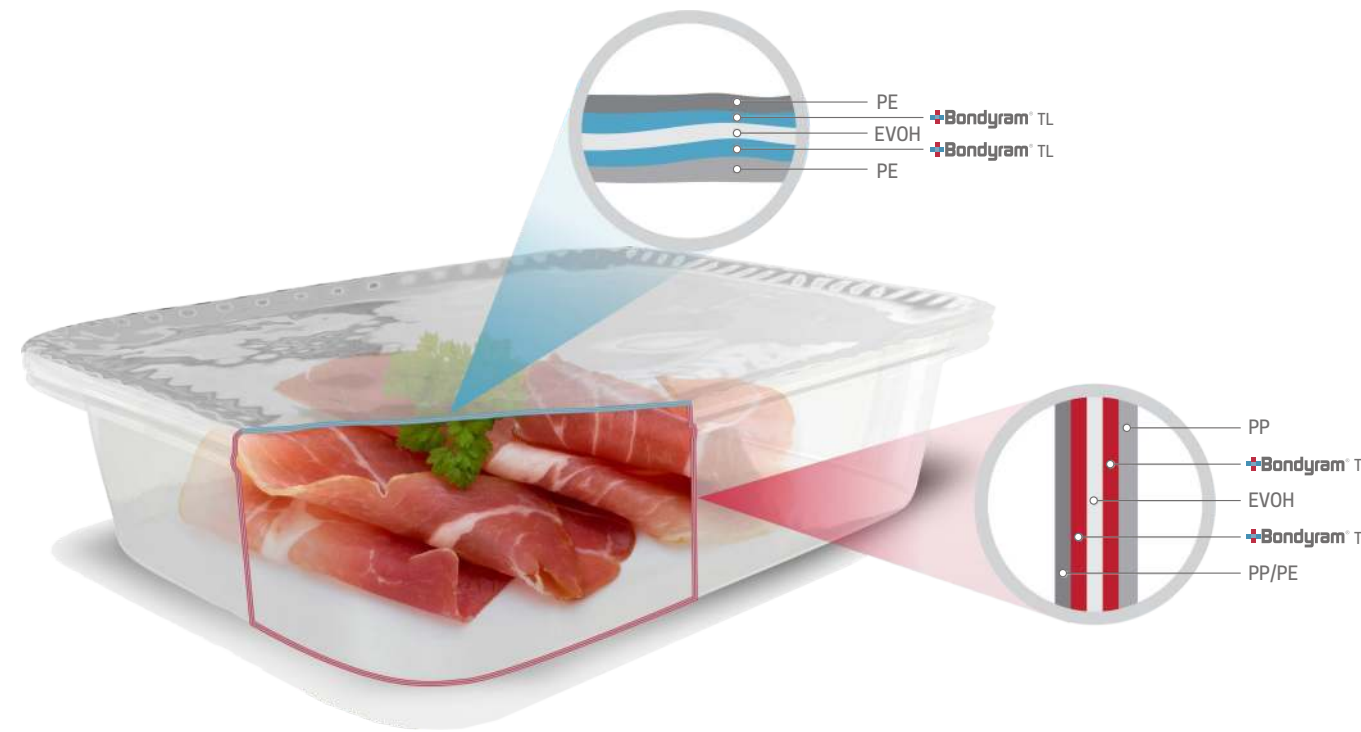
Polyram Plastic Industries Ltd. Ram-On 1920500 Israel
Tel: 972-4-6599900 Fax: 972-4-6499763 E-mail: mail@polyram-group.com
www.polyram-group.com



Concentrate PE Tie Resins

Bondyram TL* Grade	MFI 190°/2.16 kg (g/10min)	Density (g/cm3)	Melting Point °C/°F	Vicat Softening Point °C/°F	Shore Hardness D-scale	Maleic Anhydride (%)
Bondyram® TL4114	3.5	0.918	116/240	98/204	55	High
Bondyram® TL4108	1.5	0.918	118/244	98/210	45	High
Bondyram® TL4110	1.8	0.905	117/243	85/185	40	High
Bondyram® TL4180	1.0	0.92	122/251	105/221	55	High

*Bondyram® TL concentrate grades are TNPP free



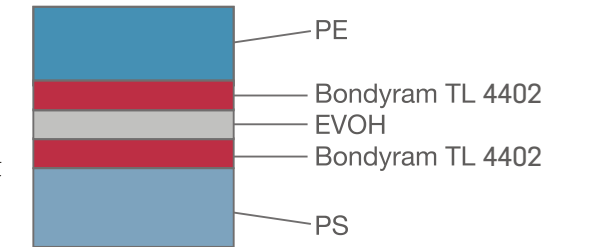
PE | Ready-to-use Tie Resins for Bi-oriented Film

Bondyram TL* Grade	MFI 190°/2.16 kg (g/10min)	Density (g/cm3)	Melting Point °C/°F	Vicat Softening Point °C/°F	Shore Hardness D-scale
Bondyram® TL4702T	3.5	0.91	114/237	86/186	38
Bondyram® TL4706	2.2	0.89	95/203	61/141	35



Polystyrene | Ready-to-use Tie Resins

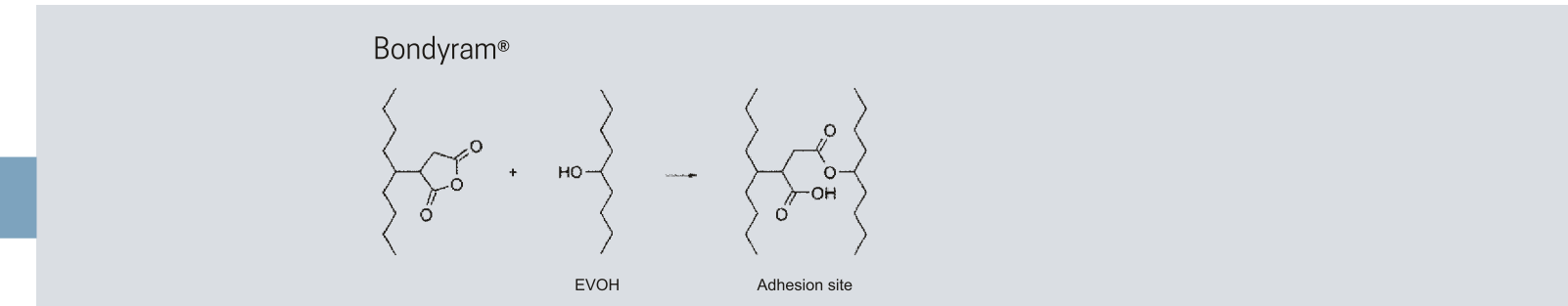
- These grades are designed as ready-to-use tie layer in co-extrusion applications, for bonding between EVOH or Polyethylene to Polystyrene in multilayer structures.
- The advantage of these grades is high temperature resistance in hot fill packaging applications as indicated by their high VICAT (> 80°C).



Bondyram TL* Grade	MFI 190°/2.16 kg (g/10min)	Density (g/cm3)	Melting Point °C/°F	Vicat Softening Point °C/°F
Bondyram® TL4401	1.5	0.95	127/261	89/192
Bondyram® TL4402	1.4	0.94	125/257	83/181
Bondyram® TL4403	1.6	0.92	125/257	82/180

PP | Polypropylene - BOPP

Bondyram TL* Grade	MFI 190°/2.16 kg (g/10min)	Density (g/cm3)	Melting Point °C/°F	Vicat Softening Point °C/°F	Base Resin
Bondyram® TL1248	4.5	0.88	145/293	108/226	rPP



PP | Tie Resins

Bondyram TL* Grade	MFI 190°/2.16 kg (g/10min)	Density (g/cm3)	Melting Point °C/°F	Vicat Softening Point °C/°F	Base Resin
Bondyram® TL1235	4.5	0.9	153/307	126/259	rPP
Bondyram® TL1240	4.5	0.89	144/291	113/235	rPP
Bondyram® TL1221	3	0.9	160/320	141/286	CoPP/rPP
Bondyram® TL1350 concentrate	18	0.9	149/300	85/185	CoPP

PE | Ready-to-use Tie Resins

Bondyram TL* Grade	MFI 190°/2.16 kg (g/10min)	Density (g/cm3)	Melting Point °C/°F	Vicat Softening Point °C/°F	Base Resin
Bondyram® TL4808	3	0.917	118/244	98/210	mLLDPE
Bondyram® TL4122	2.2	0.92	121/251	100/212	mLLDPE

PET | Ready-to-use Tie Resins

- These grades are designed as ready-to-use tie layer in co-extrusion applications, for bonding between PET and polyamide or polyethylene in multilayer structures.
- Can also be used as Tie Layer between PET and AL.
- Suitable for blown and cast film technology.

Bondyram TL* Grade	MFI 190°/2.16 kg (g/10min)	Density (g/cm3)	Melting Point °C/°F	Vicat Softening Point °C/°F
Bondyram® TL4530	2	0.9	111/232	53/127
Bondyram® TL3230	2	0.95	85/185	
Bondyram® TL4540	1.5	0.92	112/234	85/185