

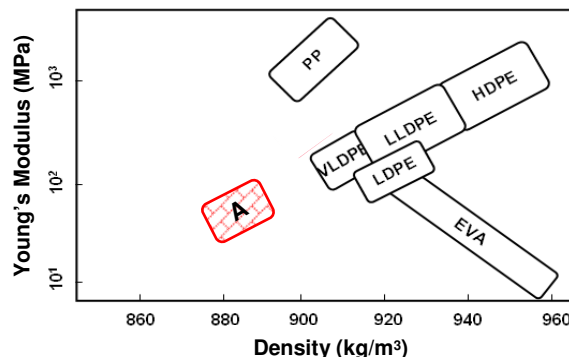
TAFMER™ A

Ethylene based α -olefin copolymer

TAFMER™ A is miscible with polyethylene (PE). It is used as a modifier of PE to improve Heat Seal Initiation Temperature (HSIT), impact resistance and flexibility.

General characteristics attributed to TAFMER™ A:

- Low Melting Point for lowering Heat Seal Initiation Temperature (HSIT)
- Low Young's Modulus for Softness and Flexibility
- Low Crystallinity for Transparency
- Low Glass Transition Temperature for Low Temperature Impact Resistance
- Miscible with PE and Compatible with PP for Adhesion Strength Control



In PE blown film, it is used to lower HSIT, improve transparency and adhesion strength to PP.

Typical Application

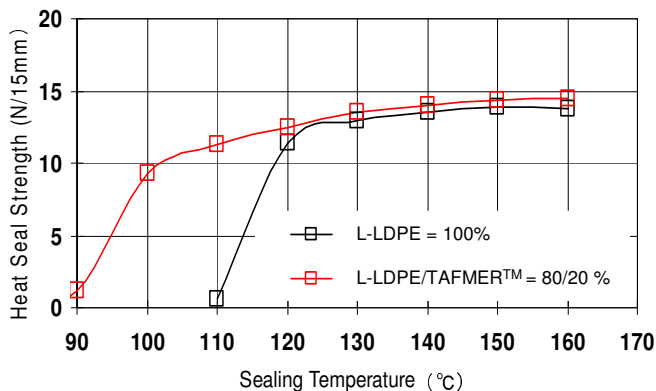
Blown PE Sealant Layer e.g.

- O-PA // (DL) // PE (Sealant)
 - O-PA // (Ac) // PE / PE (Sealant)
- PE (Sealant) : L-LDPE or LDPE + TAFMER™ A
DL : Dry Lamination
Ac : Anchor coat

Lowering HSIT

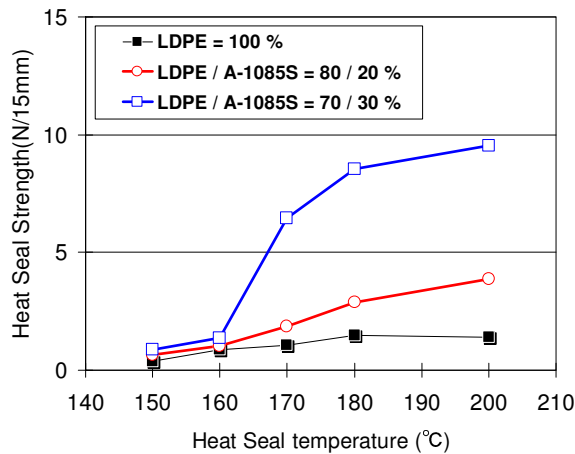
HSIT is improved as shown in the graph.

C6 L-LDPE : D=920 kg/m³, MFR(190°C)=2 g/10min
TAFMER™ A-1085S
Film Thickness: 70 μ m (Mono Layer, Blown)
Extrusion Temperature: 190 °C
Sealing conditions: 0.2 MPa x 1 s



Heat Seal Property

PE and PP are immiscible. Heat seal strength between the two polymers is too weak for practical use. TAFMER™ A, which is compatible with PP, can improve heat seal strength of PE layer to PP.



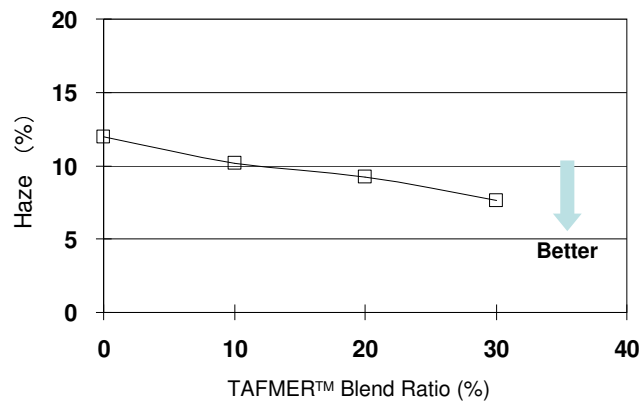
Structure : L-LDPE(50 μm) / Seal layer(20 μm)
Seal layer : LDPE + TAFMER™ A-1085S
LDPE : MFR(190 °C)=2 g/10min, Density=919 kg/m³
L-LDPE : MFR(190 °C)=1 g/10min, Density=919 kg/m³

Extrusion Temperature: 200 °C
Sealing conditions: 0.2 MPa x 1 s, Seal to PP sheet

Transparency

Transparency is improved with higher TAFMER™ blend percentage as shown in the graph:

L-LDPE : MFR(190°C)=2 g/10min, Density=919 kg/m³
TAFMER™ A-1085S
Film Thickness: 70 μm (Mono Layer, Blown)



Summary

TAFMER™ A

- ☑ Lowers HSIT for high speed packing
- ☑ Enables PE to adhere to PP
- ☑ Improves transparency

Basic Properties

Physical Properties	Test Method	Unit	A-1085S	A-4085S
MFR(190°C/2.16kg)	ASTM D1238	g/10min	1.2	3.6
MFR(230°C/2.16kg)	ASTM D1238	g/10min	2.2	6.7
Density	ASTM D1505	kg/m ³	885	885
Mechanical Properties				
Tensile Strength at Break	ASTM D638	MPa	> 37	> 27
Elongation at Break	ASTM D638	%	> 1000	> 1000
Torsional Rigidity	ASTM D1043	MPa	9	9
Surface Hardness (Shore A)	ASTM D2240	—	87	86
Thermal Properties				
Melting Point	MCI Method	°C	66	66
Brittleness Temperature	ASTM D746	°C	< -70	< -70

Note: All of the above listed data are representative values, and not specific ones.

FDA

All the monomers and additives used in the above TAFMER™ grade are listed in the “Code of Federal Regulation, title 21 Food and Drugs, Parts 170 to 189” and “FCN (Food Contact Notification)”.

EU Directive

All the monomers and additives used in the above TAFMER™ grade are listed in the EU Directive 2002/72/EC and its amendment 2008/39/EC.

The only additives with Specific Migration Limit (SML) are:

n-Octadecyl 3,5-di-t-butyl-4-hydroxy hydrocinnamate (CAS No.2082-79-3, Ref No.68320)

: SML= 6mg/kg

Please ensure that the SML and Overall Migration (OM) are within the specified value in the end-use products..

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