**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 μm (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.

![Graph showing heat seal property](image)

Transparency

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

- L-LDPE: MFR(190 °C)=1 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

![Graph showing transparency improvement](image)
Basic Properties

<table>
<thead>
<tr>
<th>Physical Properties</th>
<th>Test Method</th>
<th>Unit</th>
<th>A-1085S</th>
<th>A-4085S</th>
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<tbody>
<tr>
<td>MFR (190°C/2.16kg)</td>
<td>ASTM D1238</td>
<td>g/10min</td>
<td>1.2</td>
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<td>MFR (230°C/2.16kg)</td>
<td>ASTM D1238</td>
<td>g/10min</td>
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<td>Density</td>
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<td>kg/m³</td>
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<th>Mechanical Properties</th>
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<tr>
<td>Tensile Strength at Break</td>
<td>ASTM D638</td>
<td>MPa</td>
<td>&gt; 37</td>
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<tr>
<td>Elongation at Break</td>
<td>ASTM D638</td>
<td>%</td>
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<td>Torsional Rigidity</td>
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<td>Surface Hardness (Shore A)</td>
<td>ASTM D2240</td>
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<th>Thermal Properties</th>
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<tr>
<td>Melting Point</td>
<td>MCI Method</td>
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<td>Brittleness Temperature</td>
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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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