



# ADVANCENE™ EE-1802-AAH

## Linear Low Density Polyethylene

### Overview:

ADVANCENE™ EE-1802-AAH is a Linear Low Density Polyethylene Resin is an ethylene-hexene-1 copolymer designed for cast stretch film applications such as industrial pallet wrap. Films containing EE-1802-AAH offer outstanding toughness and load holding properties.

### Main Characteristics:

- Industrial pallet wrap stretch film applications
- Premium film packaging applications

| Physical                        | Typical Value (SI)      | Test Method          |
|---------------------------------|-------------------------|----------------------|
| Density                         | 0.918 g/cm <sup>3</sup> | ASTM D792            |
| Melt Index (190 °C/2.16 Kg)     | 2 g/10 min              | ASTM D1238, ISO 1133 |
| Film Properties                 | Typical Value (SI)      | Test Method          |
| <b>Film Puncture Energy</b>     |                         |                      |
| 0.80 mil (20 µm)                | 4.29 J                  | UNIVATION Method     |
| 2.0 mil (51 µm)                 | 8.81 J                  |                      |
| <b>Film Puncture Force</b>      |                         |                      |
| 0.80 mil (20 µm)                | 44.5 N                  | UNIVATION Method     |
| 2.0 mil (51 µm)                 | 89 N                    |                      |
| <b>Film Puncture Resistance</b> |                         |                      |
| 0.80 mil (20 µm)                | 30.8 J/cm <sup>3</sup>  | UNIVATION Method     |
| 2.0 mil (51 µm)                 | 24.0 J/cm <sup>3</sup>  |                      |
| <b>Film Toughness</b>           |                         |                      |
| MD: 0.80 mil (20 µm)            | 203 J/cm <sup>3</sup>   | ASTM D882            |
| MD: 2.0 mil (51 µm)             | 225 J/cm <sup>3</sup>   |                      |
| TD: 0.80 mil (20 µm)            | 358 J/cm <sup>3</sup>   |                      |
| TD: 2.0 mil (51 µm)             | 262 J/cm <sup>3</sup>   |                      |
| <b>Secant Modulus</b>           |                         |                      |
| 2% Secant, MD: 0.80 mil (20 µm) | 142 MPa                 | ASTM D882            |
| 2% Secant, MD: 2.0 mil (51 µm)  | 138 MPa                 |                      |
| 2% secant, TD: 0.80 mil (20 µm) | 150 MPa                 |                      |
| 2% secant, TD: 2.0 mil (51 µm)  | 138 MPa                 |                      |

|   |   |  |
|---|---|--|
| <b>Tensile Strength</b><br>MD: Yield, 0.80 mil (20 µm)<br>MD: Yield, 2.0 mil (51 µm)<br>TD: Yield, 0.80 mil (20 µm)<br>TD: Yield, 2.0 mil (51 µm)<br>MD: Break, 0.80 mil (20 µm)<br>MD: Break, 2.0 mil (51 µm)<br>TD: Break, 0.80 mil (20 µm)<br>TD: Break, 2.0 mil (51 µm) | 10.6 MPa<br>9.8 MPa<br>11.3 MPa<br>10.3 MPa<br>55.7 MPa<br>38.4 MPa<br>47.2 MPa<br>37.5 MPa | ASTM D882  |
| <b>Tensile Elongation</b><br>MD: Break, 0.80 mil (20 µm)<br>MD: Break, 2.0 mil (51 µm)<br>TD: Break, 0.80 mil (20 µm)<br>TD: Break, 2.0 mil (51 µm)   | 480 %<br>700 %<br>890 %<br>800 %  | ASTM D882  |
| <b>Dart Drop Impact</b><br>0.80 mil (20 µm)<br>0.80 mil (20 µm)<br>2.0 mil (51 µm)<br>2.0 mil (51 µm)   | 130 g<br>< 100 g<br>330 g<br>210 g  | ASTM D1709A<br>ASTM D1709B<br>ASTM D1709A<br>ASTM D1709B |
| <b>Elmendorf Tear Strength</b><br>MD: 0.80 mil (20 µm)<br>MD: 2.0 mil (51 µm)<br>TD: 0.80 mil (20 µm)<br>TD: 2.0 mil (51 µm)  | 220 g<br>790 g<br>640 g<br>1100 g   | ASTM D1922 <sup>1</sup>                                  |
| <b>Ultimate Stretch</b><br>0.8 mil (20 µm)<br>2.0 mil (51 µm)   | 300 %<br>470 %  | UNIVATION Method <sup>2</sup>                            |
| <b>Ultimate Stretch</b><br>0.8 mil (20 µm)<br>2.0 mil (51 µm)   | 220 g<br>310 g  |  |
| <b>Thermal</b>  | <b>Typical Value (SI)</b>   | <b>Test Method</b>                                       |
| Vicat Softening Temperature   | 98.9 °C   | ASTM D1525   |
| Melting Temperature (DSC)   | 123 °C  | UNIVATION Method   |
| <b>Optical</b>  | <b>Typical Value (SI)</b>   | <b>Test Method</b>                                       |
| Gloss   |   |  |
| 20°, 0.8 mil (20 µm)  | 157   | ASTM D2457   |
| 20°, 2.0 mil (51 µm)  | 149   |  |
| 45°, 0.8 mil (20 µm)  | 95  |  |
| 45°, 2.0 mil (51 µm)  | 91  |  |

|                  |        |            |
|------------------|--------|------------|
| Haze             |        |            |
| 0.8 mil (20 µm)  | 1.0 %  | ASTM D1003 |
| 2.0 mil (51 µm)  | 3.0 %  |            |
| <b>Extrusion</b> |        |            |
| Melt Temperature | 274 °C |            |

### Extrusion Notes

Fabrication Conditions for Cast Film:

- Egan/ Davis-Standard 5-layer cast line
- Melt Temperature: 525°F (274°C)
- Chill Roll (primary/ secondary) Temperature: 70°F (21°C)
- Line Speed: 600 fpm (183 m/Min) for 0.8 mil; 200 fpm (61 m/min) for 2.0 mil
- Output: 401 lb/hr (180 kg/hr) for 0.8 mil; 340 lb/hr (150 kg/hr) for 2.0 mil
- Die width: 36 in (914 mm)
- Die Gap: 25 mil (0.65 mm)
- Air gap: 3 in (76 mm)

### Notes

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

1 Method B

2 On-Pallet Testing; Highlight Industries Inc. test method.

### Availability:

This product is supplied in 25 kg bags in secured pallets of 60 bags (1.500 MT net).

It is also supplied in jumbo bags of 1000 kg capacity.

### Storage:

The product should be stored in dry conditions at temperatures below 50°C and protected from UV-light. Improper storage can initiate degradation, which results in odour generation and colour changes and can have negative effects on the physical properties of this product.

More information on storage can be found in Safety Information Sheet for this product.

### Safety:

The product is not classified as a hazardous mixture.

Dust and fines from the product carry a risk of dust explosion. All equipment should be properly earthed. Inhalation of dust should be avoided as it may cause irritation of the respiratory system. Small amounts of fumes are generated during processing of the product. Proper ventilation is therefore required.

A Safety Information Sheet is available on request. Please contact your ETHYDCO representative for more details on various aspects of safety, recovery and disposal of the product.

**Recycling:**

The product is suitable for recycling using modern methods of shredding and cleaning.

In-house production waste should be kept clean to facilitate direct recycling.

**Related Documents:**

Most datasheets and statements are available on ETHYDCO website [www.ethydc0-eg.com](http://www.ethydc0-eg.com). If more information is required, please contact a ETHYDCO representative for information.

The product(s) mentioned herein are not intended to be used for medical, pharmaceutical or healthcare applications and we do not support their use for such applications.

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