

# Tie resins for copolyester multilayer film applications

Several things must be considered when selecting tie resins that will be used in packaging applications, such as:

- **Regulatory requirements**—Does the packaging application require FDA/EU food contact compatibility? Check with your tie resin supplier on approved grades.
- **Adhesion**—What materials does the tie resin need to adhere to? While a tie resin may bond well to one resin, it may not bond well to others.
- **Processability**—To avoid processing phenomena such as chevrons or flow instabilities, consider the flow characteristics of the molten polymer, including:
  - Melt flow rate
  - Rheology—Match rheology curves as closely as possible. Severe mismatches result in flow instability between layers.
  - Viscoelastic behavior—Ensure optimized adhesion by using coextrusion models on all components or through experimentation.

## Suggested tie resins for Eastman copolyesters

<b>ADMER™ adhesive resin</b>  <b>Mitsui Chemicals</b> <a href="http://www.mitsuichemicals.com/adm.htm">www.mitsuichemicals.com/adm.htm</a>	<b>Mitsui Chemicals Europe GmbH</b> Oststrasse 34 40211 Duesseldorf, Germany <a href="mailto:marketing@mcie.de">marketing@mcie.de</a> +49 211 171 9960
	<b>Mitsui Chemicals America, Inc.</b> 800 Westchester Ave. Suite S306 Rye Brook, NY 10573, U.S.A. +1 914-253-0790
<b>BYNEL™ adhesive resin</b>  <b>Dow Chemical</b> <a href="http://www.dow.com/en-us/product-search/byneladhesiveresin">www.dow.com/en-us/product-search/byneladhesiveresin</a>	2040 Dow Ctr Midland, MI 48674, U.S.A. +1 989-636-1000

**Note:** Contact the tie resin supplier for suggested grades and fitness-for-use requirements.

## Suggested tie resins for copolyesters adhered to various layers

Copolyesters to PA/EVOH	ADMER™ AT1955E—maleated PO elastomer <sup>a,b</sup>
	ADMER™ AT2614E—advanced-grade high MFI <sup>a,c</sup>
	BYNEL™ 21E787—maleated modified EMA <sup>a</sup>
Copolyesters to PO	ADMER™ NF911E—maleated LLDPE <sup>d</sup>
	ADMER™ SF730E—grade for double/triple bubble applications
	BYNEL™ 22E789, 22E780—maleated modified EMA

**Note:** Selecting versions of these tie resins with higher or lower molecular weight, viscosity, melt flow rate, or modification may be required. Contact the tie resin supplier for specific recommendations.

<sup>a</sup>Also offers PO (polyethylene and polypropylene polymers and copolymers) adhesion

<sup>b</sup>Offers good adhesion, especially to Eastman copolyester GP001

<sup>c</sup>Offers good adhesion, especially to Eastman Tritan™ FX200 copolyester

<sup>d</sup>Offers good adhesion, especially to Eastman Eastobond™ copolyester



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