DuPont Performance Materials

**DuPont™ Elvax® 3176CW-3**

Elvax® resins Product Data Sheet

**Description**

**Product Description**
DuPont™ Elvax® 3176CW-3 is an extrudable ethylene-vinyl acetate copolymer resin available in pellet form for use in conventional extrusion equipment designed to process polyethylene resins.

**Restrictions**

**Material Status**
Commercial: Active

**Typical Characteristics**

**Composition**
18% By Weight Vinyl Acetate comonomer content
- Slip additive
- Chill Roll Release additive
- Thermal Stabilizer: BHT antioxidant

**Applications**
This resin is designed to provide a low temperature heat seal to itself or many other materials commonly used in flexible packaging applications. The melt properties of this resin allow it to be processed on extrusion coating and cast film equipment over a wide range of line speeds and film thicknesses. Typically, cast film of this grade is adhesive laminated to polyester or other substrates as required by the application.

**Typical Properties**

**Physical**

- **Nominal Values**
  - *Density (ρ)*
    - 0.94 g/cm³, ASTM D792, ISO 1183
  - *Melt Flow Rate (190°C/2.16kg)*
    - 30 g/10 min, ASTM D1238, ISO 1133

**Thermal**

- **Nominal Values**
  - *Melting Point (DSC)*
    - 84 °C (183.2 °F), ASTM D3418, ISO 3146
  - *Freezing Point (DSC)*
    - 61 °C (141.8 °F), ASTM D3418, ISO 3146
  - *Vicat Softening Point (T)*
    - 54 °C (129.2 °F), ASTM D1525, ISO 306

**Processing Information**

- **Maximum Processing Temperature**
  - 235 °C (455 °F)

**General Processing Information**
Resin melt temperature should be maintained in the range of 185-235°C (365-455°F) to provide a suitable viscosity and melt strength for extrusion coating. Selection of a specific melt temperature will depend on considerations such as coating thickness, substrate type, adhesion desired, line speed, and other machine variables. Priming is usually required to achieve the best adhesion to transparent or smooth substrates. To obtain the best chill roll release characteristics, matte finish chill rolls are recommended. However, if a gloss chill roll is required, the release additives will help prevent sticking.

Elvax® can be used in conventional extrusion equipment designed to process polyethylene resins. However, corrosion-protected barrels, screws, adapters, and dies are recommended, since, at sustained melt temperatures above 455°F (235°C), ethylene vinyl acetate (EVA) resins may thermally degrade and release corrosive by-products.

**FDA Status Information**
ELVAX® 3176CW-3 EVA Resin complies with Food and Drug Administration Regulation 21 CFR 177.1350(a)(1) - Ethylene-vinyl acetate copolymers, subject to the limitations and requirements therein. This Regulation describes polymers that may be used in contact with food, subject to the finished food-contact article meeting the extractive limitations under the intended conditions of use, as shown in paragraph (b)(1) of the Regulation.
The information and certifications provided herein are based on data we believe to be reliable, to the best of our knowledge. The information and certifications apply only to the specific material designated herein as sold by DuPont and do not apply to use in any process or in combination with any other material. They are provided at the request of and without charge to our customers. Accordingly, DuPont cannot guarantee or warrant such certifications or information and assumes no liability for their use.

Regulatory Information
For information on regulatory compliance outside of the U.S.A., consult your local DuPont representative.

Safety & Handling
THE IMPORTANCE OF PROPER HANDLING & STORAGE:
Maintaining proper handling and storage conditions for DuPont™ Elvax® resins is very important to ensure overall product quality and keep the resin in a free-flowing state. If the Elvax® resin is subjected to sunlight, rain or excessive temperatures, then the resin may not process properly or achieve the desired characteristics in the final product.

It is crucial for Elvax® resins to be kept under proper storage and handling conditions because improper storage and handling may cause the resin to “block” (massing of pellets into large clumps that can hinder the ease of material transfer) or lose the ability to flow freely.

Please refer to the Elvax® Handling Guide for additional information.
For additional information on appropriate Handling & Storage of this polymeric resin, please refer to the material Safety Data Sheet.

A Product Safety Bulletin, material Safety Data Sheet, and/or more detailed information on extrusion processing and/or compounding of this polymeric resin for specific applications are available from your DuPont Performance Materials representative.

Regional Centres
DuPont operates in more than 70 countries.
For help finding a local representative, please contact one of the following regional customer contact centers:

Americas
DuPont Company
Chestnut Run Plaza – Bldg. 730
974 Centre Road
Wilmington, Delaware
19805 U.S.A.
Toll-Free (USA): 1-800-628-6208
Telephone: 1-302-774-1000
Fax: 1-302-355-4013

DuPont do Brasil, S.A.
Alameda Iatepecuru, 506
06454-080 Barueri, SP Brasil
Telephone: +55 11 4166 8000
Fax: +55 11 4166 8736

Asia Pacific
DuPont China Holding Co., Ltd.
Shanghai Branch
399 Keyuan Road, Bldg. 11
Zhangjiagang Hi-Tech Park
Pudong New District, Shanghai
P.R. China (Postcode: 201203)
Telephone +86 21 3862 2888
Fax +86-21-3862-2889

Europe / Middle East / Africa
DuPont de Nemours Int’l. S.A.
2,Chemin du Pavillon Box 50
CH-1218 Le Grand Saconnex
Geneva, Switzerland
Telephone +41 22 717 51 11
Fax +41 22 717 55 00

http://www.dupont.com

The data listed here fall within the normal range of properties, but they should not be used to establish specification limits nor used alone as the basis of design. The DuPont Company assumes no obligations or liability for any advice furnished or for any results obtained with respect to this information. All such advice is given and accepted at the buyer’s risk. The disclosure of information herein is not a licence to operate under, or a recommendation to infringe, any patent of DuPont or others. Since DuPont cannot anticipate all variations in actual end-use conditions, DuPont makes no warranties and assumes no liability in connection with any use of this information.

CAUTION: Do not use DuPont materials in medical applications involving implantations in the human body or contact with internal body fluids or tissues unless the material has been provided from DuPont under a written contract that is consistent with DuPont policy regarding medical applications and expressly acknowledges the contemplated use. For further information, please contact your applications and expressly acknowledges the contemplated use. For our DuPont representative You may also request a copy of DuPont POLICY Regarding Medical Applications H-50203-3 and DuPont CAUTION Regarding Medical Applications H-50202-3.

Copyright © 2009 DuPont. The DuPont Oval Logo, DuPont™, The miracles of science®, and trademarks designated with “®” are registered trademarks or trademarks of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved