

## DuPont™ Appeel® 20D855

### Appeel® resins Product Data Sheet

#### Description

**Product Description**

DuPont™ Appeel 20D855 is a modified ethylene acrylate resin designed to function as a sealing layer for lidding applications. It is most often suggested to provide peelable seals over a broad temperature range to a number of container materials including PET, PVC, PS and PP. Appeel 20D855 is available in pellet form for use in conventional extrusion and coextrusion equipment designed to process polyethylene resins.

#### Restrictions

**Material Status**

- Developmental: Active

#### Typical Characteristics

**Uses**

- Lidding Sealant

#### Typical Properties

**Physical**

\* Density ( )

**Nominal Values**

1.00 g/cm<sup>3</sup>

**Test Method(s)**

ASTM D792      ISO 1183

\* Melt Flow Rate (190°C/2.16kg)

8.0 g/10 min

ASTM D1238      ISO 1133

**Thermal**

\* Melting Point (DSC)

92°C (198°F)

ASTM D3418      ISO 3146

Vicat Softening Point ( )

54°C (129°F)

ASTM D1525      ISO 306

**Heat Seal Evaluation**

The performance of any sealant resin should be evaluated within the context of the application. The sealant is designed to bond to particular substrate(s). Many variables can affect seal strength, including the physical properties of the substrate being sealed to, thickness, flange or surface design, heat seal temperature, dwell time and pressure. The condition and type of the sealing equipment used, such as roller sealers versus platen seal mechanisms can make a significant difference.

In most cases sealant peel strength is used as a measure of performance. Although this is a convenient test, peel strength is affected not only by substrate adhesion but also by peel angle, separation rate, ambient temperature, tensile and modulus properties of the materials, and often by the time elapsed since the formation of the bond.

If sealant peel strength is used as a measure of sealant performance, it is imperative that peel strength be evaluated not only at the time of initial heat sealing the lid to the substrate, but throughout the life of the product and under all the conditions to which the sealant will be exposed. Only then does peel strength provide a reliable indication of adhesive performance in the specific application.

## Processing Information

### General

- \* Maximum Processing Temperature 300°C (572°F)
- General Processing Information If the process is stopped for short periods of time, the screw for the Appeel® extruder should be kept turning at a low rpm to keep material flowing.  
  
After processing Appeel®, purge the material out using a polyethylene resin, preferably with a lower melt flow rate than the Appeel® resin in use. The "Disco Purge Method" is suggested as the preferred purging method, as this method usually results in a more effective purging process. Information on the Disco Purge Method can be obtained via your DuPont Sales Representative.  
  
Never shut down the extrusion system with Appeel® in the extruder and die. Properly purge out the Appeel® with a polyethylene, and shut down the line with polyethylene or polypropylene in the system.

### Blown Film Processing

#### Nominal Values

Blown Film Processing Information	Blown Film: In blown film coextrusion processes the temperature of the Appeel® 20D855 should be maintained in the 160 - 185° C range. It is also important that the Appeel® 20D855 be supported with materials having sufficient melt strength.  Additive package: For blown film processing, it is suggested to add 3% to 5% of DuPont Elvax CE9619-1, a special slip and antiblock masterbatch. This masterbatch addition facilitates better web handling and roll formation.  Following is an example of a suggested temperature profile for blown film processing. Adjustments would then be made to suit the individual process and applications needs.
Feed Zone	140°C (284°F)
Second Zone	150°C (302°F)
Third Zone	160°C (320°F)
Fourth Zone	180°C (356°F)
Fifth Zone	180°C (356°F)
Adapter Zone	180°C (356°F)
Die Zone	170°C (338°F)

### Extrusion Coating/Lamination Processing

#### Nominal Values

Extrusion Coating / Lamination Processing	Extrusion Coating: The melt temperature of Appeel® 20D855 should be maintained in the 235 - 285°C range in extrusion coating processes. Selection of a specific melt temperature will depend on screw configuration, potential power limitations, and the need to match melt viscosities. However, melt temperatures above 300C (572F) should be avoided because of possible thermal degradation of the resin.  Use of a CoF modifier may be necessary depending upon the end-use application. DuPont has several additive packages for use with Appeel. For an extrusion coating application with this grade, please contact your DuPont representative for information on the Conpol series of slip and antiblock masterbatches which are compatible with Appeel. Examples include, Conpol 20S1, 20S2, 13B, AC-S and AC-B.  Following is an example for suggested temperature profile on the high side of the processing range. Lower temperatures in the final metering zone, adapter and die are suggested if compatible with the process and application.
Feed Zone	160°C (320°F)
Second Zone	210°C (410°F)
Third Zone	260°C (500°F)
Fourth Zone	285°C (545°F)
Fifth Zone	285°C (545°F)
Adapter Zone	285°C (545°F)

**FDA Status Information**

Appeel® 20D855 resin complies with Food and Drug Administration Regulation 21 CFR 177.1340 - - Ethylene-methyl acrylate copolymer resins, 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) 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**

In Europe a diversity of regulations apply in various countries. In addition, constant changes linked to the effort of their harmonization under the umbrella of European Union Directive can be observed. This makes it impossible to accurately describe the food contact status in this brochure. Updated statements describing the situation in the various European countries can be obtained through your local sales representative.

**Safety & Handling**

For 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 Packaging and Industrial Polymers representative.

### Read and Understand the Material Safety Data Sheet (MSDS) before using this product

**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

**Asia Pacific**

DuPont China Holding Co., Ltd.  
Shanghai Branch  
399 Keyuan Road, Bldg. 11  
Zhangjiang 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

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

<http://appeel.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 DuPont representative. You may also request a copy of DuPont POLICY Regarding Medical Applications H-50103-3 and DuPont CAUTION Regarding Medical Applications H-50102-3.*

*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.*

*This data sheet is effective as of 08/07/2010 02:09:55 PM and supersedes all previous versions.*