



## Dow Packaging & Specialty Plastics

### Product Data Sheet

#### APPEEL™ 72D811

#### Peelable Resin

##### General Information

|                     |                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Description | <p>APPEEL™ 72D811 resin is designed to be a sealing layer to film or sheet lidding applications. It provides a peelable seal to a number of materials including HDPE, LLDPE, LDPE, EVA, and Ionomer.</p> <p>APPEEL™ 72D811 is a modified ionomer polymer available in pellet form for use in conventional extrusion and coextrusion equipment designed to process polyethylene resins.</p> |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

##### Status

|                 |                    |
|-----------------|--------------------|
| Material Status | Commercial: Active |
|-----------------|--------------------|

##### Typical Characteristics

|              |                                                                             |
|--------------|-----------------------------------------------------------------------------|
| Uses         | Lidding Sealant                                                             |
| Applications | APPEEL™ 72D811 is typically utilized in blown film and cast film processes. |

##### Typical Properties

| Physical                          | Nominal Values     | Test Method(s) |          |
|-----------------------------------|--------------------|----------------|----------|
| *Density ( )                      | 0.93 g/cm³         | ASTM D792      | ISO 1183 |
| *Melt Flow Index ( 190°C/2.16kg ) | 6.9 g/10 min       | ASTM D1238     | ISO 1133 |
| Thermal                           | Nominal Values     | Test Method(s) |          |
| *Melting Point( DSC )             | 94 °C ( 201.2 °F ) | ASTM D3418     | ISO 3146 |

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Heat Seal Evaluation | <p>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.</p> |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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

|                                 |                   |
|---------------------------------|-------------------|
| *Maximum Processing Temperature | 260 °C ( 500 °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 Dow 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.

Materials of construction used in the processing of this resin should be corrosion resistant. Stainless steels of the types 316, 15-5PH, and 17-4PH are excellent, as is quality chrome or nickel plating, and in particular duplex chrome plating. Type 410 stainless steel is satisfactory, but needs to be tempered at a minimum temperature of 600°C (1112°F) to avoid hydrogen-assisted stress corrosion cracking. Alloy steels such as 4140 are borderline in performance. Carbon steels are not satisfactory. While stainless steels can provide adequate corrosion protection, in some cases severe purging difficulties have been encountered. Nickel plating has been satisfactory, but experiments have shown that chrome surfaces have the least adhesion to acid containing polymers. In recent years, the quality of chrome plating has been deteriorating due to environmental pressures, and the corrosion protection has not always been adequate. Chrome over top of stainless steel seems to provide the best combination for corrosion protection and ease of purging.

#### Blown Film

#### Nominal Values

#### Processing Information

Blown Film: In blown film coextrusion processes the temperature of the APPEEL™ 72D811 should be maintained in the 160 - 185° C range.

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    | 135 °C ( 275 °F )   |
| Second Zone  | 160 °C ( 320 °F )   |
| Third Zone   | 185 °C ( 365 °F )   |
| Fourth Zone  | 185 °C ( 365 °F )   |
| Fifth Zone   | 185 °C ( 365 °F )   |
| Adapter Zone | 185 °C ( 365 °F )   |
| Die Zone     | 173 °C ( 343.4 °F ) |

#### Cast Film / Sheet

#### Nominal Values

#### Processing Information

Cast Film: In cast film coextrusion processes the temperature of the APPEEL™ 72D811 should be maintained in the 185 - 235° C range.

Following is an example of a suggested temperature profile for cast film processing. Adjustments would then be made to suit the individual process and applications needs.

|              |                   |
|--------------|-------------------|
| Feed Zone    | 135 °C ( 275 °F ) |
| Second Zone  | 160 °C ( 320 °F ) |
| Third Zone   | 185 °C ( 365 °F ) |
| Fourth Zone  | 210 °C ( 410 °F ) |
| Fifth Zone   | 210 °C ( 410 °F ) |
| Adapter Zone | 210 °C ( 410 °F ) |
| Die Zone     | 210 °C ( 410 °F ) |

#### Extrusion Coating/Lamination

#### Nominal Values

#### Processing Information

Extrusion Coating: the temperature of the APPEEL™ 72D811 should be maintained in the 235 - 260° C range.

Following is an example of a suggested initial temperature profile for processing. Adjustments would then be made to suit the individual process and applications needs. Temperatures beyond zone 3 can be increased up to 260C (500F) if needed, but in general run as cool as possible while achieving the desired performance.

|             |                   |
|-------------|-------------------|
| Feed Zone   | 160 °C ( 320 °F ) |
| Second Zone | 210 °C ( 410 °F ) |

|              |                     |
|--------------|---------------------|
| Third Zone   | 235 °C ( 455 °F )   |
| Fourth Zone  | 248 °C ( 478.4 °F ) |
| Fifth Zone   | 248 °C ( 478.4 °F ) |
| Adapter Zone | 248 °C ( 478.4 °F ) |
| Die Zone     | 248 °C ( 478.4 °F ) |

**FDA Status Information**

APPEEL™ 72D811 resin complies with Food and Drug Administration Regulation 21 CFR 177.1330, 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 (c) 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 Dow 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, Dow 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 Dow representative.

## Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

## Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

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Any and all medical application use of Dow materials, whether a device, a component, or any type of primary or secondary packaging of a medically related object or substance, needs to be reviewed and approved by Dow before any Dow material can be tested in such application.

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For further information contact your Dow sales or technical representative to request a Medical Application Review Request Form.

Additional details of Dow's Medical Applications Policy are available at:

<https://www.dow.com/en-us/support/product-safety.html>

## Tobacco and Marijuana Policy

Dow does not support or intend for its products to be used, directly or indirectly, in the production of tobacco, the manufacture of tobacco products, the manufacture and use of electronic cigarettes (including vaping devices), the production of marijuana, or the manufacture of marijuana products intended for human consumption, where the Dow product (or its residues) may be present in the finished product or be alleged to facilitate the delivery of nicotine, other tobacco components, marijuana, or marijuana components.

## Harmful Applications Policy

Dow does not intend for its products to be used in applications specifically intended to harm humans.

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For additional information, not covered by the content of this document, contact us via our web site

[http://www.dow.com/products\\_services](http://www.dow.com/products_services)

Revision Date: 26-February-2021  
P&SP Disclaimer

#### Additional Information

To contact Dow via Toll-Free or Local Toll phone numbers in specific countries, please see the following webpage:  
<https://www.dow.com/en-us/support/contact-representative.html>

<http://www.dow.com>

Updated February 2021

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Version: 214.0  
Last modified at 8/31/2019 11:28 AM

Form No. 914-026-01-0221 DOW