Dow Packaging & Specialty Plastics

Product Data Sheet

APPEEL™ 11D554

Peelable Resin

General Information

Product Description	APPEEL™ 11D554 is a modified ethylene vinyl acetate copolymer resin designed to function as a sealing layer for lidding applications. It is most often suggested to provide peelable seals to polypropylene, polystyrene and polystyrene foam and is available in pellet form for use in conventional extrusion or coextrusion equipment designed to process polyethylene resins.

Status

Material Status	Commercial: Active

Typical Characteristics

Uses	Lidding Sealant

Typical Properties

Physical	Nominal Values	Test Method(s)	
*Density ( )	0.93 g/cm³	ASTM D792	ISO 1183
*Melt Flow Index (190°C/2.16kg)	9.5 g/10 min	ASTM D1238	ISO 1133

Thermal	Nominal Values	Test Method(s)	
*Melting Point (DSC)	95 °C (203 °F)	ASTM D3418	ISO 3146
Freezing Point (DSC)	76 °C (168.8 °F)	ASTM D3418	ISO 3146
Vicat Softening Point ( )	72 °C (161.6 °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

*Maximum Processing Temperature	235 °C (455 °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.

Blown Film	Nominal Values
Processing Information	Blown Film: In blown film coextrusion processes the temperature of the APPEEL™ 11D554 should be maintained in the 160 - 185º C range. It is also important that the APPEEL™ 11D554 be supported with materials having sufficient melt strength. Additive package: For blown film processing, it is suggested to add 3% to 5% of 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 temperatiure 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	Nominal Values
Processing Information	Extrusion Coating: The melt temperature of APPEEL™ 11D554 should be maintained in the 210 - 235ºC 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 238C (460F) should be avoided because of possible thermal degradation of the resin. 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	185 °C (365 °F)
Third Zone	210 °C (410 °F)
Fourth Zone	235 °C (455 °F)
Fifth Zone	235 °C (455 °F)
Adapter Zone	235 °C (455 °F)
Die Zone	235 °C (455 °F)

FDA Status Information	APPEEL™ 11D554 resin complies with Food and Drug Administration Regulation 21 CFR 175.105 - - Adhesives. This Regulation describes adhesives that may be used as components of articles intended for use in packaging, transporting, or holding food, subject to the limitations and requirements therein. 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.

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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.**

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

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http://www.dow.com/products_services

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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

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