



APPEEL™ 22D843

Peelable Resin

General Information

Product Description

APPEEL™ 22D843 is a polypropylene modified ethylene acrylate resin designed to function as a masterbatch to achieve peelability in polypropylene based sealant layers.

It provides peelable seals over a broad temperature range. The peel layers will sustain sterilization conditions of 121°C for 20 minutes through 134°C for 6 minutes depending on the blending base resin of the PP seal materials.

When blending for this type of application, 22D843 should be evaluated as a modifier for HoPP or CoPP by addition rates between 20% to 40% by weight. Blends with CoPP will usually provide better results.

APPEEL™ 22D843 is available in pellet form for use in conventional extrusion and coextrusion equipment designed to process polyethylene resins.

Status

Material Status

Commercial: Active

Typical Characteristics

Features

APPEEL™ 22D843 in its pure form may also be considered to evaluate as a sealing layer for PP cup/tray lidding applications, as well as possibly to other polymeric materials, though it has not yet been evaluated for such applications.

Typical Properties

Physical	Nominal Values	Test Method(s)	
*Density ()	0.937 g/cm ³	ASTM D792	ISO 1183
*Melt Flow Index (230°C/2.16kg)	6.4 g/10 min	ASTM D1238	ISO 1133
Melt Flow Rate (190°C/2.16kg)	2.6 g/10 min	ASTM D1238	ISO 1133
Thermal	Nominal Values	Test Method(s)	
*Melting Point (DSC)	136 °C (276.8 °F)	ASTM D3418	ISO 3146

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

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 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

Processing Information

Nominal Values

The following applies if evaluating APPEEL™ 22D843 in its pure form as a peelable sealant either via monofilm or as a pure layer in a coextruded film.

Blown Film: In blown film coextrusion processes the temperature of the APPEEL™ 22D843 should be maintained in the 160 - 185° C range. It is also important that the APPEEL™ 22D843 be supported with materials having sufficient melt strength.

Additive package: For blown film processing, if film blocking is an issue, please consult with your Dow technical representative for a recommendation.

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)

FDA Status Information

APPEEL™ 22D843 resin complies with Food and Drug Administration Regulation 21 CFR 177.1340 - - Ethylene-methyl acrylate copolymer resins, subject to the limitations and requirements therein. APPEEL™ 22D843 Lidding Sealant Resin may be used in non-cooking applications under conditions corresponding to Conditions of Use C (Hot filled or Pasteurized above 150F, includes microwave reheating) through G (frozen storage, no thermal treatment in the container) (21 CFR 176.170, Table 2, subject to the finished food-contact article meeting the extractive limitations under the intended conditions of use, as shown in paragraph 21 CFR 177.1340 paragraph (b)).

APPEEL™ 22D843 resin may also be used for packaging all food types in a cooking application at a maximum thickness of 3.5 mils in pouches under retort conditions only, corresponding to Condition of Use A (21 CFR 176.170, Table 2), subject to the finished food-contact article meeting the extractive limitations under the intended conditions of use, as shown in paragraph 21 CFR 177.1340 paragraph (b). Such use may properly be said to comply with Federal Food, Drug and Cosmetic Act and all applicable food additive regulations.

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.

