



APPEEL™ 55030

Peelable Resin

General Information

Product Description APPEEL™ 55030 is an ethylene type polymer resin available for use in conventional extrusion coating operations. It can be used in co-extrusion laminating equipment designed to process polyethylene resins.

Status

Material Status Commercial: Active

Typical Characteristics

Uses Lidding Sealant

Features APPEEL™ 55030 offers smooth peeling (cohesive failure mode) to various materials including PE, PP. It can also be sealed to paper, paperboard.

Applications APPEEL™ 55030 is used as a heat seal layer in lidding material for polyethylene coated paper cup, injection molded and vacuum molded plastic containers, especially PE and PP used in the packaging of snack, noodle, yogurts and other food items.

Typical structures for this lidding would be:

- ~ Over lacquer / Print / Foil / (NUCREL™ - APPEEL™ 55030)
- ~ Paper / PE / Foil / (NUCREL™ - APPEEL™ 55030)
- ~ PET / primer / PE / VM-PET / primer / (NUCREL™ - APPEEL™ 55030)

Typical Properties

Physical	Nominal Values	Test Method(s)
*Density ()	0.93 g/cm ³	JIS K-6760
*Melt Flow Index (190°C/2.16kg)	32 g/10 min	JIS K-6730
Thermal	Nominal Values	Test Method(s)
*Melting Point (DSC)	157 °C (314.6 °F)	ISO 11357-3
Vicat Softening Point (Approximate)	89 °C (192.2 °F)	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 250 °C (482 °F)

General Processing Information The melt temperature of APPEEL™ 55030 should be maintained in the 210-250°C range.

Selection of a specific melt temperature will depend on screw configuration, potential power limitations, and the need to match melt viscosity. However, melt temperatures above 260°C should be avoided because of possible thermal degradation of the resin. If the process is stopped for short periods of time, the APPEEL™ 55030 resin extruder should be kept turning at low rpm.

For a permanent shutdown, the APPEEL™ 55030 resin should be purged out using an available polyethylene resin run at the same extrusion temperature used for the APPEEL™ 55030 resin.

Never raise temperature over 260°C until APPEEL™ 55030 resin is completely purged out.

APPEEL™ 55030 requires relatively low processing temperatures and cooling the bottom of hopper due to its low Vicat point and higher comonomer level.

Extrusion Coating/Lamination

Nominal Values

Processing Information

The following is a suggested extruder temperature profile. Variations may be made based on particular extruder screw design and machinery set-up. Do not exceed 260C for any set temperatures. Do set the first extruder barrel zone higher than 175C, as this resin has a low softening temperature.

Feed Zone 160 °C (320 °F)

Second Zone 200 °C (392 °F)

Third Zone 240 °C (464 °F)

Fourth Zone 240 °C (464 °F)

Fifth Zone 240 °C (464 °F)

Adapter Zone 250 °C (482 °F)

Die Zone 250 °C (482 °F)

FDA Status Information

APPEEL™ 55030 resin complies with US-FDA Regulation CFR 21 Part 177.1520(a)(2) (i) and (c)2.2. This product may only be used in contact with food of the types identified in 21 CFR Part 176.170(c), Table 1, under Categories I, II, IV-B, VI-B, VII-B, and VIII under conditions of use B through H described in Table 2, Part 176.170(c), and with food of types identified in 176.170(c), Table 1, under Categories VI-A and VI-C under conditions of use C through G described in Table 2, Part 176.70(c).

APPEEL™ 55030 resin cannot be used in contact with food types III, IV-A, V, VII-A, and IX described in 21 CFR Part 176.170(c), Table 1.

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.

