

# DuPont™ Appeel® Lidding Sealant Resins

**Reduce your manufacturing costs  
with Appeel® lidding sealant resins**



**Brand owners require their packaging to perform the way consumers expect – to be easy to open, yet protect the contents against spoilage, leakage, contamination or tampering. DuPont recognizes the continuous increase in consumer expectations, and the fact that converters need to constantly find new ways to meet or exceed their expectations, while still making a profit.**

Used during flexible lidding conversion, DuPont™ Appeel® lidding sealant resins not only offer predictable and repeatable peel strength, but also provide a pre-compounded one-bag solution that easily runs in a variety of conversion processes. They are solvent free and don't require the environmental controls associated with solvent-based or lacquer heat seal coatings. Inventories and the number of SKU's can be reduced, as a number of Appeel® resins seal to multiple substrates, leading to less-costly inventory. And there are no blends to be made, ensuring that the resins perform the way they should time after time.

Whether you are running an extrusion coating, cast or blown film line, sealing to PP, PE, PS, PVC, PET, epoxy, Barex® or Aclar®, there is a grade of Appeel® lidding sealant resin that will run in your process, and prove to be cost-effective while meeting the demands of brand owners and consumers.

Appeel® lidding sealant resins have been formulated for versatility with all of this in mind for easy peel applications, and are only from DuPont. This brochure describes our current commercial offering of Appeel® grades for lidding applications.



*The miracles of science™*

## Commercially Available Grades

The Appeel® grades are fully compounded for the most part. In some cases the need may exist to further modify the sealant with processing aids dependent on the chosen extrusion process and final application requirements. This can include additional slip, anti-block and chill roll release additives.

The commercial grades of Appeel® resins are general purpose peel seal resins. They offer excellent peelable seal characteristics to a variety of substrates including PP, PE, PS, PVC, PET, Epoxy, Barex® and Appeel®.

**Table 1: Typical Resin Properties of Commercially Available Grades**

Appeel® Grade	MeltFlow Rate (g/10 min) ASTM D1238	Density (g/cc) ASTM D792	Melt Point (°C/°F) ASTM D3417
Appeel® 1181	8.9	0.96	75/167
Appeel® 2044	2.6	0.95	79/174
Appeel® 11D542	2.1	0.92	105/221
Appeel® 11D554	9.5	0.93	95/203
Appeel® 11D625	7.3	0.94	94/201
Appeel® 20D745	7.5	0.938	92/198
Appeel® 20D751	2.0	0.94	94/201
Appeel® 20D752	4.0	0.98	90/194
Appeel® 20D784	9.0	0.93	98/208
Appeel® 20D828	13.0	1.02	97/207
Appeel® 20D855	7.3	1.00	92/198
Appeel® 20D867	9.1	0.94	90/194
Appeel® 22D843	2.65	0.94	136/277

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 of 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.

**TABLE 2: TYPICAL HEAT SEAL CHARACTERISTICS**

Appeel® Grade	APET	CPET	PP	PS	PVC	PE	Barex*	Aclar*	Itself
Appeel® 1181	++	++	+++	+	+++	++++	ND	ND	++++
Appeel® 2044	++	++	+++	++	+	++++	ND	ND	++++
Appeel® 11D542	ND	ND	++	+	NR	++	ND	ND	++
Appeel® 11D554	+	+	++	++	+	++++	NR	++	++++
Appeel® 11D625	NR	+	+++	+	NR	++++	ND	ND	++++
Appeel® 20D745	+	++	++	++	++	++++	NR	NR	++++
Appeel® 20D751	++	++	++	++	++	++++	NR	NR	++++
Appeel® 20D752	++	++	++	++	++	++	NR	NR	++
Appeel® 20D784	+	++	++	+	+	++++	NR	NR	++++
Appeel® 20D828	+++	+++	+++	+++	+++	++++	+++	+++	++++
Appeel® 20D855	+++	+++	+++	+++	+++	++++	ND	ND	++++
Appeel® 20D867	++	++	++	++	++	++++	ND	ND	++++

PEEL STRENGTH LEGEND (N/15MM) + = 2 – 6, ++ = 6 – 12, +++ = 12 – 18, ++++ = LOCK SEAL, NR = NOT RECOMMENDED, ND = NO DATA,

### HEAT SEAL CONDITIONS

TEMPERATURES °C/°F: 121/250, 149/300, 177/350, 204/400

PRESSURE: 40 PSI DWELL: 1 SECOND PEEL ANGLE: 90° T

STRUCTURE: 12U PET//40U PE/10U APPEEL®

NOTE: DATA IS MEANT FOR USE AS A GUIDELINE ONLY

**TABLE 3: APPLICATIONS, ATTRIBUTES AND PROCESSES FOR COMMERCIALY AVAILABLE GRADES**

Grade	Key Attributes	Processes	Sealing Substrates	Applications	Direct Food Compliance
1181	EVA base, low heat seal initiation, high clarity	Extrusion coating & cast film	PP, PVC, PET, PS, PE Aluminum	Lidding for dairy, beverage, snack packaging, some hot fill	Global
2044	EVA base, low heat seal initiation, high clarity	Blown Film	PP, PVC, PET, PS, PE Aluminum	Lidding for dairy, beverage, snack packaging, some hot fill	Global
11D542	EVA base, cohesive peel, stress whitens, low C.O.F.	Blown Film	Itself, PE, PP, PS	Easy peel pouch applications including food and medical. Lidding for HDPE in dairy and dry cereal	Global
11D554	EVA base, low seal initiation, high clarity	Extrusion coating, cast & blown film	PP, PS, PET, PE, PVC	Lidding for dairy, beverage, snack packaging, hot fill	No FDA
11D625	EVA base, low seal initiation, high clarity	Extrusion coating, cast and blown film	PP, PS, PET, PE	Lidding for dairy, beverage, snack packaging, hot fill	No EU
20D745	EMA base, high thermal process stability, good clarity, low seal initiation	Extrusion coating, cast & blown film	PP, PS, PVC, PET, PE	Lidding for dairy, beverage, snack packaging, hot fill & some micro-wave	Global
20D751	EMA base, good clarity, low seal initiation	Blown film	PP, PS, PVC, PET, PE	Lidding for dairy, beverage, snack packaging, hot fill & micro-wave	Global
20D752	EMA base, cohesive peel, stress whitens, seal strength can be modified	Extrusion coating, cast & blown film	Itself, PE, PP, PS, PET	Easy peel pouch applications including food and medical. Lidding for HDPE in dairy and dry cereal	Global
20D784	EMA base, high thermal process stability, good clarity, low seal initiation	Extrusion coating, cast & blown film	PP, PET, PS, PVC, PE	Lidding for dairy, beverage, snack packaging, hot fill & micro-wave	Global
20D828	EMA base, low seal initiation, high burst strength, filament free die cutting	Extrusion coating, cast & blown film	PP, PS, PVC, PET, PE, Aclar®, Barex®, epoxy	Lidding for dairy, beverage, snack packaging, hot fill, micro-wave, can membrane and pharma blisters	No EU
20D855	EMA base, low seal initiation, high burst strength, filament free die cutting	Extrusion coating, cast & blown film	PP, PS, PET, PE	Lidding for dairy, beverage, snack packaging, hot fill & micro-wave	Global
20D875	EMA base, low seal initiation, high burst strength, filament free die cutting	Extrusion coating, cast & blown film	PP, PS, PET, PE	Lidding for dairy, beverage, snack packaging, hot fill	No FDA
20D867	EMA base, low seal initiation, good seals in the presence of milk solids, good clarity	Extrusion coating, cast & blown film	PP, PET, PS, PVC	Lidding for dairy & beverage	Global
22D843	PP modified EMA designed to function as a MB to achieve peelability in PP based sealant layers	Extrusion coating, cast & blown film	Itself, PP	Pouch or lidding material for retortable applications	No FDA

DETAILS OF FOOD REGULATION COMPLIANCE CONDITIONS FOR EACH GRADE AND COUNTRY CAN BE REQUESTED BY CONTACTING YOUR LOCAL DUPONT OFFICE.

## Commercial Availability of Grades By Region

Appeel® Grade	Brief Description	Availability	
		NA/LA	EMEA
Appeel® 1181	Modified EVA resin	√	
Appeel® 2044	Modified EVA resin	√	
Appeel® 11D542	Modified EVA resin	√	
Appeel® 11D554	Modified EVA resin	√	√
Appeel® 11D625	Modified EVA resin	√	
Appeel® 20D745	Modified EMA resin	√	√
Appeel® 20D751	Modified EMA resin	√	√
Appeel® 20D752	Modified EMA resin	√	√
Appeel® 20D784	Modified EMA resin	√	
Appeel® 20D828	Modified EMA resin	√	√
Appeel® 20D855	Modified EMA resin	√	√
Appeel® 20D867	Modified EMA Resin	√	√
Appeel® 22D843	Modified EMA Resin		√

NA/LA = North and Latin America,  
EMEA = Europe, Middle East, Africa

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