Refreshing options for caps, closures, and fitments

EVERCAP™ Innovative Closure Resins
CONTINUUM™ Bimodal Polyethylene Resins
and Specialty Resins

DOW®

Take a turn for the better

In a world with an astonishing range of packaged food, beverages, cleaners and other chemicals, today's caps, closures, and fitments face a multitude of challenges. In addition to the basic tasks of preventing leakage and preserving freshness, cap and closure technology needs to cover everything from durability to lightweighting, processability to taste and odor, product safety to recyclability, and anything else in between.

One resin can't possibly focus on all of these diverse needs. That is why we continue to develop different families of resins to cover the most demanding performance needs.

EVERCAP™ Innovative Closure Resins is one resin portfolio for demanding cap, closure, and fitment applications. This exciting development from Dow offers:

- Differentiated polyethylene options with hard to find performance and processability
- Exceptional versatility to address megatrends and key industry needs
- Opportunities for collaborative, accelerated innovation

Differentiated polyethylene solutions

As one of the world's leading polyethylene producers, Dow's innovative, wide-ranging chemistries and manufacturing processes offer an exceptional resource for cap and closure technology. This rich pool of capabilities allows the family of EVERCAP™ PE Resins to offer unsurpassed levels of key attributes – including environmental stress crack resistance (ESCR), stiffness, and toughness – as well as industry-leading sealability, barrier protection, durability, processability, security, organoleptics, lightweighting, and design for recyclability.

EVERCAP™ Resins also offer excellent processability, with many drop-in options for use in existing compression and injection molding equipment.

These differentiated materials are backed by quality standards that are second to none. Stringent manufacturing specifications and sensory mapping of products offer the utmost in quality control, while advanced supply chain technology helps ensure safe and timely delivery.

Exceptional versatility with sustainability

The exceptional performance of EVERCAP™ Innovative Closure Resins offers answers regarding megatrends and other important issues that impact not only the packaging industry, but also the world at large. The EVERCAP™ Closure Resins product portfolio can help:

- Reduce food waste via improved barrier/ shelf-life performance
- Assist the aging population by helping enable easier opening and closing
- Ensure safety through both aseptic and hot fill sterilization processes
- Offer enhanced product safety with consistent, reliable tamper evidence
- New features like living-hinge PE as alternative to PP caps

The family of EVERCAP™ Resins can also help develop stronger sustainability profiles. For example, conversion from two- to one-piece closures and increased opportunities for lightweighting help reduce material usage and help enable more efficient, cost-effective transportation throughout the value chain.

In addition, the broad range of material and processing options allows tremendous creativity in areas such as design, intermaterial substitution, and cost efficiency. A few of the many possibilities include metal cap replacement, alternative materials for existing hinged closures, and the modification of pull tab fitments.

EVERCAP™ PE family of resins is complemented with our CONTINUUM™ Bimodal PE Resins as well as DOWLEX™ PE Resins to match your performance needs.

In addition, our Specialty Resins portfolio offer further solutions in applications like cap liners, spouts, and synthetic corks.

Table 1: Relative application needs

Application	Sealability	Stiffness/ toughness	ESCR	Barrier	Security	Organoleptics	Light-weighting	Recyclability
Still water	●●●	●●	●	●	●●●	●●●	●●●	●●
Carbonated soft drinks (CSDs)/pressure water	●●●	●●	●●●	●	●●●	●●	●●	●●
Alternative beverages (hot fill/aseptic)	●●●	●●	●	●●	●●●	●●	●●	●●
Non-beverage	●●●	●	●	●●●	●●●	●●	●●	●●
Pull tabs	●●●	●●●	●	●	●●●	●	●	●●

● = Less critical ●● = More critical ●●● = Most critical

Table 2: Innovative Closure Resins portfolio[1]

Application	Resin	Melt index[2] g/10 min.	Density[3] g/cc	ESCR[4], hrs.	Slip
Resins for caps and closures					
Still water	EVERCAP™ DMDC-1210 HDPE	10	0.952	22	—
Carbonated soft drinks (CSDs)/ pressure water	CONTINUUM™ DMDC-1250 HDPE	1.5	0.955	>2,000	—
	EVERCAP™ DMDE-1250 HDPE	1.5	0.955	>2,000	●
	CONTINUUM™ DMDC-1270 HDPE	2.5	0.955	>1,000	●
Alternative beverages (juices, dairy, teas, nutritional beverages)	EVERCAP™ DMDC-1210 HDPE	10	0.952	22	—
	EVERCAP™ DMDE-1250 HDPE	1.5	0.955	>2,000	●
	EVERCAP™ DMDD-1210 HDPE	10	0.952	22	●
	CONTINUUM™ DMDC-1250 HDPE	1.5	0.955	>2,000	—
	EVERCAP™ DMDB-1230 HDPE	10	0.945	17	●
	EVERCAP™ DMDA-1260 HDPE	2.7	0.963	28	—
	EVERCAP™ DMDC-1260 HDPE	2.7	0.963	28	●
	DOWLEX™ 2006G PE	8	0.961	—	—
	DOW™ LDPE 352E	2.0	0.925	—	●
	DOW™ LDPE 410E	2.0	0.925	—	—
	DOW™ LDPE 450E	2.0	0.923	—	—
	DOW™ LDPE 740E	7.5	0.920	—	—
	DOW™ LDPE 780E	20	0.923	—	—
Non-beverage	DOW™ HDPE KS 10100	4.0	0.955	10	—
	DOW™ HDPE KT 10000	8.0	0.964	2.5	—
	DOW™ HDPE 25055E	25	0.955	1	—
Pull tabs	DOW™ LDPE 7010	8.5	0.919	—	—
	DOW™ LDPE 955i	35	0.923	—	—
	DOW™ LLDPE DNDA-8320	20	0.924	20	—
	DOW™ LLDPE DMDA-8007	8.3	0.965	2	—
	DOW™ LLDPE DMDA-8920	20	0.954	3	—
	DOW™ LLDPE DNDB-7147	50	0.926	5	—
	DOW™ LDPE 740E	7.5	0.920	—	—
	DOW™ LDPE 780	20	0.923	—	—
	DOW™ LDPE 352	2	0.925	—	—
	DOW™ LDPE 515E	3.2	0.931	—	—

Refer to individual technical data sheets (TDSs) for additional information regarding property performance, regulatory compliance, and handling considerations.

Table 2: Innovative Closure Resins portfolio[1] Cont.

Application	Resin	Melt index[2] g/10 min.	Density[3] g/cc	ESCR[4], hrs.	Slip
Resins for specialty applications					
Improved barrier linerless	EVERCAP™ DMDA-1245 HDPE	20	0.954	3	–
	EVERCAP™ DMDA-1247 HDPE	8.3	0.965	2	–
Living hinge	EVERCAP™ DMDA-1241 HDPE	15	0.952	–	–
Spout	DOWLEX™ SC 21086	2.65	0.953	–	–
Small pump components	CONTINUUM™ DMDC-1250 HDPE	1.5	0.955	>2000	–
	CONTINUUM™ DMDC-1270 HDPE	2.5	0.955	>1000	–
Synthetic corks	DOW™ LDPE 740E	7.5	0.920	–	–
	DOW™ LDPE 450E	2.0	0.923	–	–
	AFFINITY™ PL1880G POP	1.0	0.902	–	–
	AFFINITY™ EG8200G POP	5.0	0.870	–	–

Refer to individual technical data sheets (TDSs) for additional information regarding property performance, regulatory compliance, and handling considerations.

Collaborative, accelerated innovation

Working with our broad product portfolio also offers opportunities to access Dow's industry-leading innovation methodology. This includes Pack Studios, our exclusive global network of technical specialists, equipment, and testing capabilities that help enable accelerated application development with collaboration throughout the value chain. You can also benefit from Dow's aligned, multi-functional knowledge base and many diverse, proprietary polyethylene technologies – including everything from Ziegler-Natta to metallocene to post-metallocene, gas phase to solution to high pressure, monomodal to multi-modal, and HDPE to LLDPE to LDPE and POP to POE.

Everywhere you turn

The incredible versatility of the EVERCAP™ Closure Resins product portfolio help enable it to be used in virtually every type of cap, closure, and fitment. Table 1 provides a quick overview of the key attributes offered by EVERCAP™ Resins.

Table 2 provides an overview of the broad Innovative Closure Resins portfolio. If you don't see what you're looking for here, please contact us or visit www.dowevercap.com or our Premium Closures and Lids for Packaging site.


EverCap™
innovative closure resins by
DOW

For more information about Dow, visit **www.dow.com/about.** To contact a Dow representative, visit **www.dow.com/contact**.

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