Refreshing solutions for caps, closures, and fitments

EVERCAP™ Innovative Closure 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. Now, however, one family of polyethylene resins can.

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

- Differentiated polyethylene solutions with unmatched 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 a one-of-a-kind resource for cap and closure technology. This rich pool of capabilities allows the family of EVERCAP™ PE resins to deliver 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 recyclability.

EVERCAP™ resins also offer excellent processability, with many drop-in solutions 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 provide the utmost in quality control, while advanced supply chain technology helps ensure safe and timely delivery.

Exceptional versatility

The outstanding 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™ product portfolio can help:

- Reduce food waste via improved barrier/ shelf-life performance
- Assist the aging population by enabling easier opening and closing
- Ensure health and wellness through both aseptic and hot fill sterilization processes
- Offer enhanced product safety with consistent, reliable tamper evidence

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 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.

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)	●●●	●●	●	●●	●●●	●●	●●	●●
Fitments	●●●	●	●	●●●	●●●	●●	●●	●●
Pull tabs	●●●	●●●	●	●	●●●	●	●	●●
Living hinges	●●	●●●	●	●	●●	●	●	●●
Pharmaceutical	●●●	●	●	●●●	●●●	●	●	●●
Household and industrial chemicals (HIC)	●●●	●●	●●●	●●	●●	●	●	●●

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

Table 2: EVERCAP™ Innovative Closure Resins portfolio[1]

Application	Resin	Melt index[2] g/10 min.	Density[3] g/cc	ESCR[4], 122°F (50°C), F50, 100% Igepal, hrs.	Slip
Resins for caps and closures					
Still water	EVERCAP™ DMDC-1210 HDPE	10	0.952	22	—
Carbonated soft drinks (CSDs)/ pressure water	EVERCAP™ DMDB-1220 HDPE	0.3	0.958	>1,100	—
	EVERCAP™ DMDF-1250 HDPE	1.5	0.955	>2,000	●
	CONTINUUM™ DMDE-1250 Bimodal HDPE	1.5	0.955	>2,000	●
	CONTINUUM™ DMDC-1250 Bimodal HDPE	1.5	0.955	>2,000	—
	CONTINUUM™ DMDC-1270 Bimodal HDPE	2.5	0.955	>1,000	●
Alternative beverages (juices, dairy, teas, nutritional beverages)	EVERCAP™ DMDC-1210 HDPE	10	0.952	22	—
	EVERCAP™ DMDD-1210 HDPE	10	0.952	22	●
	EVERCAP™ DMDB-1220 HDPE	0.3	0.958	>1,100	—
	EVERCAP™ DMDB-1230 HDPE	10	0.945	17	●
	EVERCAP™ DMDE-1250 HDPE	1.5	0.955	>2,000	●
	CONTINUUM™ DMDC-1250 Bimodal HDPE	1.5	0.955	>2,000	—
	EVERCAP™ DMDA-1260 HDPE	2.7	0.963	28	—
Pharmaceutical	DOW™ HDPE DMDA-8920 HEALTH+™[5]	20	0.954	3	—
Resins for specialty applications					
Fitments & caps	EVERCAP™ DMDA-1245 HDPE	20	0.954	3	—
	EVERCAP™ DMDA-1247 HDPE	8.3	0.965	2	—
Living hinges	EVERCAP™ DMDA-1241 HDPE	15	0.952	—	—
Pull tabs	DOW™ LDPE 722M	8	0.918	—	—
	DOW™ LDPE 955i	35	0.923	—	—
	DOW™ LLDPE DNDA-8320	20	0.924	20	—
	DOW™ LLDPE DNDB-7147	50	0.926	5	—

[1] These are typical properties, not to be construed as specifications. [2]ASTM D1238 (190°C/2.16 kg) [3]ASTM D792 [4]ASTM D1693

[5] All medical application uses for DOW HEALTH+™ Polymers must be approved by Dow pursuant to its Medical Policy. Each HEALTH+™ Polymer has been certified in accordance with requirements for some healthcare applications. It is the responsibility of the medical device or pharmaceutical manufacturer to determine that the Dow product is safe, lawful, and technically suitable for the intended use.

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

Collaborative, accelerated innovation

Working with the EVERCAP™ product portfolio also offers opportunities to access Dow's industry-leading innovation methodology. This includes Pack Studios, our exclusive global network of technical experts, equipment, and testing capabilities that enables 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 slurry, monomodal to multi-modal, and HDPE to LLDPE to LDPE.

Everywhere you turn

The incredible versatility of the EVERCAP™ product portfolio enables 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 EVERCAP™ Innovative Closure Resins portfolio. If you don't see what you're looking for here, please contact us or visit **www.dowevercap.com**.

It's your turn.

For more information on how EVERCAP™ Innovative Closure Resins can provide the easy path to better caps, please contact us or visit **www.dowevercap.com**.


EverCap™
innovative closure resins by
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For more information about Dow, visit **www.dow.com/about.** To contact a Dow representative, visit **www.dow.com/contact**.

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