

the *Glass* Polymer

clearly innovative . . .



EASTMAN

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clearly innovative . . .



The advantage is clear . . .

No other clear material delivers the design freedom and processing flexibility to turn ordinary containers into extraordinary shelf appeal. That's why many of the world's leading brands and top manufacturers prefer [*The Glass Polymer*](#).

What can *The Glass Polymer* do for you?

From mass market to prestige products, only *The Glass Polymer* offers crystal clarity and chemical resistance. This powerful combination gives you the most versatility for the widest range of products and processes.

The look and feel of glass . . . *clearly beneficial!*

The Glass Polymer may be more cost effective than you think. While unit cost savings are a possibility versus glass, the greater cost savings opportunities are downstream in secondary processes for color and decoration, breakage and shipping costs.

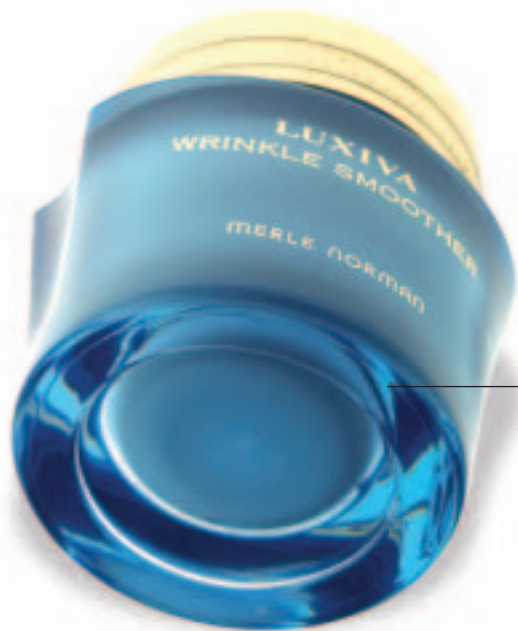
Many popular secondary processes, such as hot stamping, can cost up to 50% more per unit with glass. When you consider the total system cost, *The Glass Polymer* is clearly more cost effective. Here's why...

The Glass Polymer saves you more.

Systems Cost Savings:

The Glass Polymer is 100 times tougher, easier in processing and decorating, reducing the total systems cost of use.

		Copolyester	Copolyester	Glass	Glass
		(Inj. molding)	(ISBM)	Clear	Colored
Cost models available for EBM, ISBM, and Injection Molding					
Base cost	16 cav (Inj.) 6 cav (ISBM)	\$0.21	\$0.24	\$0.15	\$0.32
Decorating	Hot stamping	\$0.04	\$0.03	\$0.08	\$0.08
Breakage	Filler line shut-down	\$0.00	—	\$0.01	\$0.01
	Rework	\$0.00	—	\$0.01	\$0.01
Lead times	Working capital	\$0.01	\$0.01	\$0.04	\$0.04
Total cost per unit	Hot stamped	\$0.26	\$0.28	\$0.28	\$0.45



The weighty feel of glass without the heaviness.

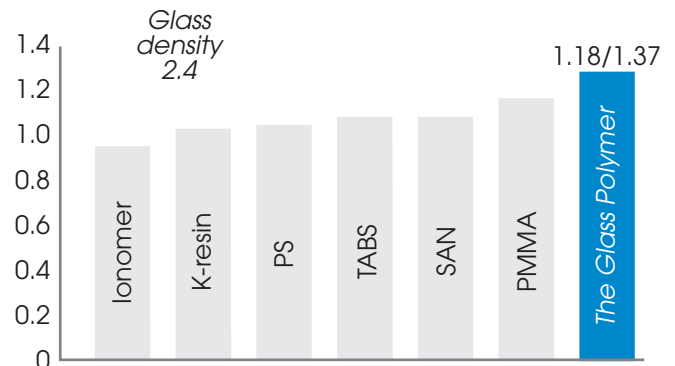
The Glass Polymer saves on total system costs, plus opens a whole new world of special effects that simply can't be achieved with glass.

Incredible clarity at unbelievable thickness . . . clearly brilliant!

It doesn't have to be glass to perform like glass. In fact, *The Glass Polymer* performs better! Even on jars and bottles, *The Glass Polymer* can be molded up to 32mm thick and is every bit as sparkling clear as glass. No other polymer looks and feels more like glass. See for yourself . . .

High Density:

- Customers generally associate weight with quality.
- The density of copolyesters allows a feel of glass while still reducing the overall package weight.



Crystal clarity even at extreme thickness.

Water Clear Material:

- Superior optical properties at dramatic thickness
- Molded parts up to 32 mm

	Haze %	Transmission %
<i>The Glass Polymer</i>	0.3	92
PMMA	0.2	92
SAN	0.5	84
K-Resin	3.9	88
Ionomer	13.1	89
Tab	15.0	63

Design without limits ... clearly inspirational!

With *The Glass Polymer* the only limit is your imagination. Go beyond visual appeal to create multisensory designs that invite consumers to experience your brand like never before.

Sleek and sexy, soft and silky, fun and playful and so much more—*The Glass Polymer* enables you to clearly differentiate your brand.

"The Glass Polymer was really the only material that was capable of achieving the clarity, wall thickness and chemical resistance required to produce the bottle."

—Jim Bigham
Director Sales and Marketing
Risdon



What's your brand image?

Convey it with *The Glass Polymer.*

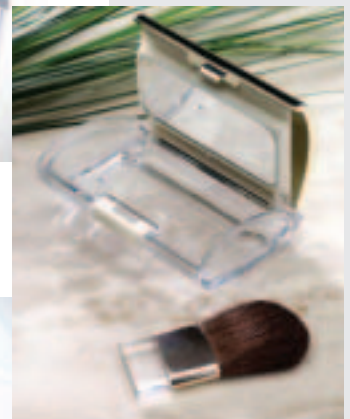
Provocative shapes



Brilliant colors



Dazzling finishes



Sparkling surfaces



Sophisticated facades



Special effects



Mold more . . . clearly versatile!

The Glass Polymer works with a broad range of processes from injection and injection blow molding to injection stretch and extrusion blow molding. With so many options, even the most intricate designs can be achieved without compromise.

Meet aggressive deadlines with speed and agility . . . clearly effective!

The Glass Polymer reduces overall cycle times with excellent flow rates and mold fill capability. And even better news for cost-competitive processors . . . *The Glass Polymer* can often utilize existing tooling and machinery with very little modification.

With this level of efficiency, *The Glass Polymer* is ideal for large volume as well as quick turn low volume seasonal or limited edition items.

“The Glass Polymer has many advantages of glass, but with none of the drawbacks. I am delighted to say that the new packaging in The Glass Polymer is a complete success.”

**—Robert Wallock
CEO
Matis**



Cut-away of bottle shows the thickness that can be achieved by molding with *The Glass Polymer*.



An open and shut case ... clearly functional!

The Glass Polymer delivers added confidence on mechanical parts including snap-fit and clip-on caps and closures. With very low shrink rates—0.2-0.5%—you can depend on *The Glass Polymer* for a snug fit that keeps contents fresh and contained for the life of the product (even with daily usage).

Shatter resistant ... clearly tough!

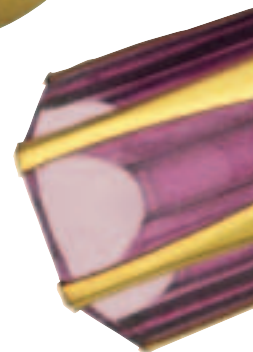
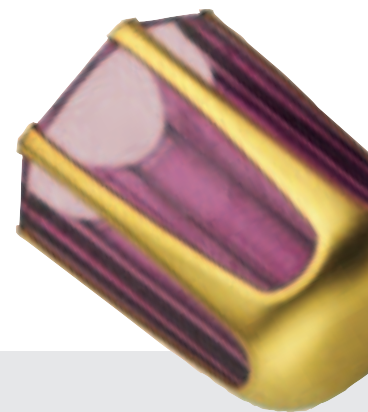
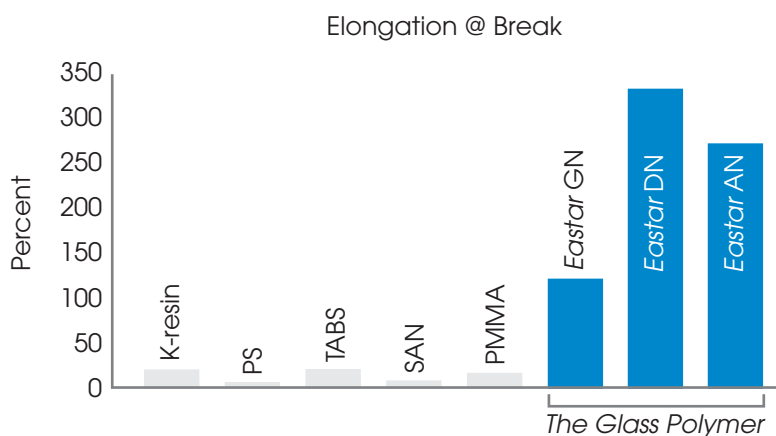
Shatter Resistance

The Glass Polymer goes a long way toward safeguarding the contents and consumer. From retail store to bathroom floor, no other material endures the dropping, squeezing or stuffing into handbags and luggage like containers made from *The Glass Polymer*.

Plus, *The Glass Polymer* resists tough cosmetics ingredients including oils and fats, alcohols . . . even aliphatic hydrocarbons like isododecane. Individual formulation testing is suggested.

The Glass Polymer is more than ten times the shatter resistance of other plastics!

Shatter Resistant Packaging:



Shelf life

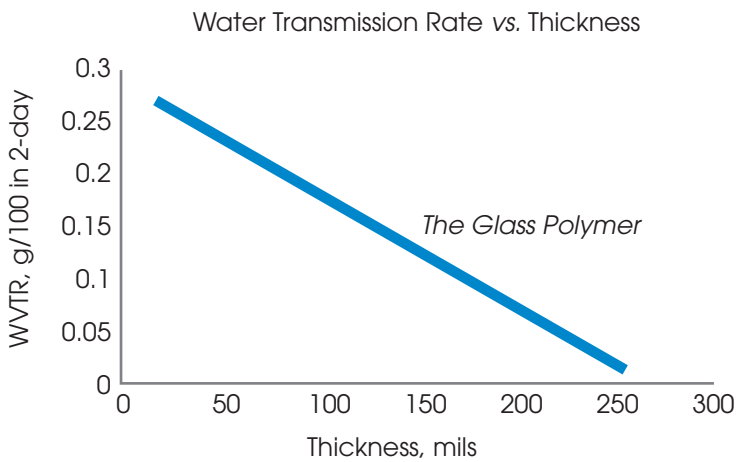
The Glass Polymer increases product shelf life too. How? It's a fact . . . thick wall containers keep contents fresher. *The Glass Polymer* optimizes wall thickness without sacrificing clarity, giving you more shelf appeal with longer shelf life.



Extend shelf life—*The Glass Polymer* provides an excellent barrier to water and oxygen.

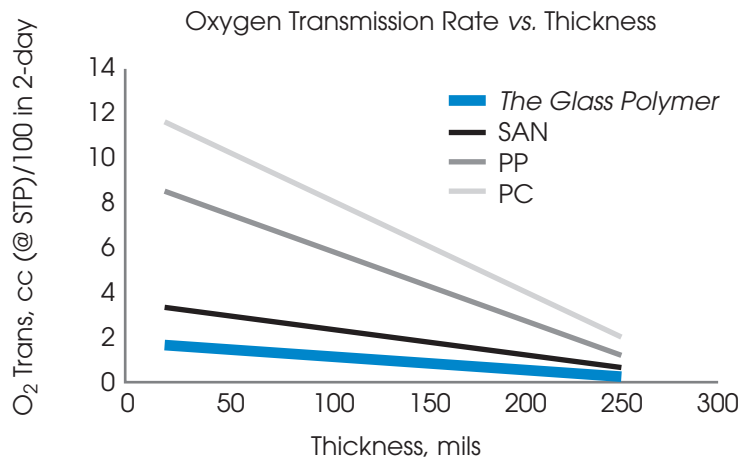
Increased Product Shelf Life:

Wall thickness makes the difference



Eastman's team can help provide input to drive the best packaging solution for your needs.





“Prestige packaging is about creating signature presence of luxury and distinctiveness . . . resulting from sophistication of form, color and graphics . . .”

—John Fling
VP
Estée Lauder

The Glass Polymer Collection

Product

Eastar AN—our premier material used by the top cosmetics companies globally. Clearest, easiest to injection mold. Dries in 1-2 hours. Good chemical resistance.

Eastar DN—our toughest material. With a notched izod of 21.7 J (16 ft-lb), it’s very shatter resistant. Excellent chemical resistance. New grades offer extremely high clarity.

Eastar GN—our most versatile material. It’s water clear and can be molded in thick-walled sections up to 1 in., making it a great choice for cosmetic jars.

Eastar EB—our latest innovation in the collection. It offers improved toughness, melt strength, chemical resistance, excellent color, and clarity in thick-walled applications.



the **Glass** Polymer

Processing

Applications

[Injection molding](#);
Injection stretch blow molding

Fragranced personal care product containers;
perfume caps; cosmetics jars; lipstick containers;
compacts

Injection molding;

Shatter resistant perfume and lipstick
containers, caps, and thick-walled jars

Injection molding;
[Extrusion blow molding](#);
Injection stretch blow molding

Cosmetics caps and jars; blow molded bottles

Extrusion blow molding

Cosmetics and personal care blow molded
bottles with challenging design and/or thick walls

Technical assistance . . . *clearly valuable!*

Our technical experts can help you transform concepts into containers more effectively. Applying design for manufacture analysis, our specialists team up with design and production to:

- Optimize tooling.
- Enhance part design.
- Conduct mold flow analysis.
- Advise on secondary processes including welding, printing, assembling, coating and more.
- Provide analytical testing including chemical resistance.



Learn more about what *The Glass Polymer* can do for you.

Visit www.theglasspolymer.com and order your free sample today!

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