

The Glass Polymer™ family of cosmetic materials

Cosmetics and personal care packaging

Working with our customers to enable sustainable packaging

The Glass Polymer™ family of cosmetic materials

- Are bisphenol A (BPA) free and *ortho*-phthalate free
- Do not contain halogens, sulfur, nitrogen, lead, mercury, cadmium, or hexavalent chromium
- Weigh 50% less than glass, reducing transportation costs and greenhouse gas emissions¹
- Reduce waste (vs. glass) caused by breakage from manufacturing, retail, and consumer use (~2%)
- Reduce the amount of secondary packaging required to safely package glass products
- Can be compatible with the PET post-consumer recycle stream²



Did you know . . .

The Glass Polymer™ family of cosmetic materials now include Tenite™ cellulosics, a clear, cellulose-based plastic for cosmetics packaging made from 45% renewable organic material?³ They also dry 25% faster than traditional copolyesters and process at 20% lower temperatures, resulting in less energy usage and faster production times.

¹Based on soda-lime (for containers) density of 2.52 g/cm³ and an average density for The Glass Polymer of 1.24 g/cm³

²When respecting the market conditions highlighted in Eastman's recycling white papers

³Tenite™ cellulosics for cosmetics packaging are made from softwood trees, harvested under a program of sustainable yield that represents environmentally responsible management of our natural resources.

Less is more when it comes to sustainable materials

For every 500 MT (1.1Mlb) of The Glass Polymer™ family of copolyesters used over acrylic (PMMA), the energy saved could power over 545 homes and take almost 100 cars off the road every year.

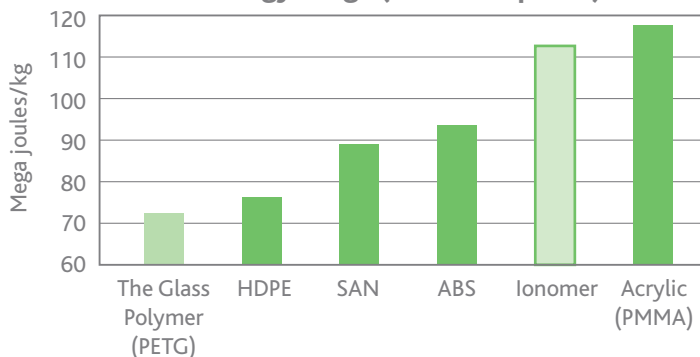
Ecodesign freedom

Thanks to multiple intrinsic material benefits like mechanical resistance, barrier properties, and chemical compatibility, The Glass Polymer™ family of copolyesters enable lightweighting by reducing thickness and by minimizing parts number while keeping the same functionality. Thanks to the performance durability of The Glass Polymer, product parts produced with these materials can be reused multiple times. This reduces overall environmental impacts like the consumption of valuable resources and harmful emissions. Using The Glass Polymer is a perfect solution for innovative and functional ecodesign.

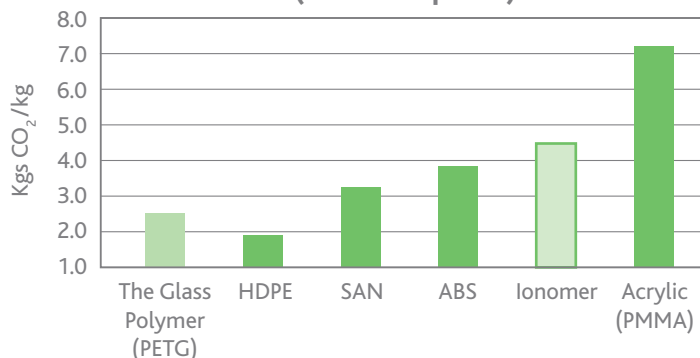
Energy valorization

The Glass Polymer™ family of copolyesters are made up of straight chain and ring compounds of carbon, hydrogen, and oxygen. These polymers contain no halogens, chlorides, styrenes, or nitriles. A polyester material burned in excess air at the appropriate combustion temperature and throughput yields products of water vapor and carbon dioxide.

Energy usage (cradle-to-pellet)



Greenhouse gas emissions (cradle-to-pellet)



- Comprehensive LCI, conducted by Franklin Associates, Ltd.
- Plastics Europe LCA
- Software and database for Life Cycle Engineering, PE International GmbH, 2009

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Material Safety Data Sheets providing safety precautions that should be observed when handling and storing Eastman products are available online or by request. You should obtain and review the available material safety information before handling any of these products. If any materials mentioned are not Eastman products, appropriate industrial hygiene and other safety precautions recommended by their manufacturers should be observed.

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Ultraviolet light can cause color shift of plastic materials. Eastman has formulated ultraviolet stabilizer concentrates that protect the natural color of the resin when exposed to sunlight. Please discuss your packaging needs with an Eastman representative.

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