

# Sustainable innovation through materials in the medical device market

## Eastman™ medical polymers

- Bisphenol A (BPA) free
- Halogen-free
- Not manufactured with ortho-phthalates
- Chemical resistant and tough—long life in medical applications that require repeated exposure to harsh disinfectants
- Absent of chlorine—reduced potential to generate polychlorinated pollutants during incineration of medical waste
- Decreased secondary packaging/associated costs, transport, and warehouse expenses (switching from glass to lighter-weight but durable plastic)
- Energy-saving over polycarbonate—separate annealing step sometimes used with PC is eliminated

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### *Did you know . . . ?*

Eastman medical polymers are shatter resistant and can withstand the rigor of hospital or patient recovery environments, thereby reducing replacements required with some other materials.

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For more information, visit [www.eastman.com/medical](http://www.eastman.com/medical).



The results of **insight™**

# Eastman™ polymers for medical device market

## Carbon and energy profiles

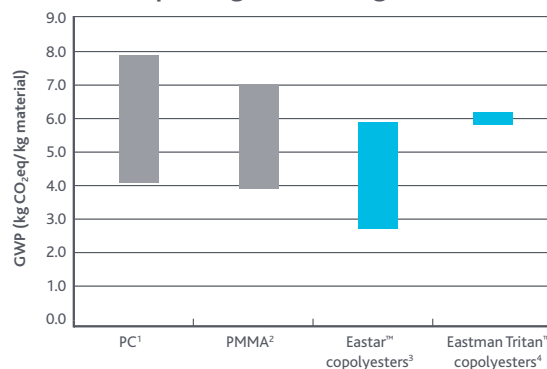
Cradle-to-gate life cycle assessment (LCA)<sup>a</sup> studies for Eastman™ copolyesters have been conducted internally to evaluate their environmental profiles and to inform decision making within Eastman. The scope of the LCA studies included all major process steps in the manufacture of Eastman copolyesters from cradle to Eastman's exit gate, including raw material extraction, supply chain, transportation, utility generation, and all intermediate processing steps. Conversion, use, and end-of-life treatment of the copolyesters beyond Eastman's exit gate were not considered in the analyses. Likewise, infrastructure and corporate overhead were excluded.

## Benefits

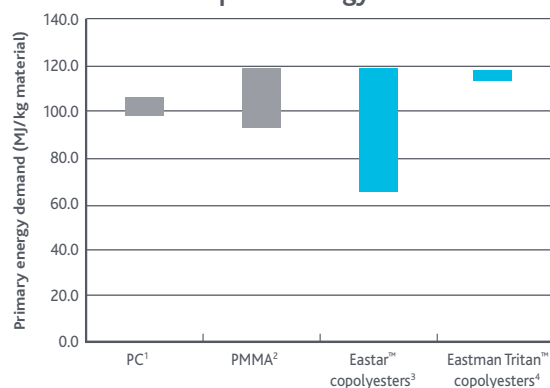
Enjoy the benefits of Eastar and Tritan which have a carbon and energy footprint comparable to competitive materials.

<sup>a</sup>LCA study methodology is explained in Eastman document "Executive summary of Eastman methodology for life cycle assessment."

## Cradle-to-pellet greenhouse gas emissions



## Cradle-to-pellet energy demand



<sup>1</sup>PlasticsEurope 2011 EPD; GaBi 5 PE (2010), PlasticsEurope (2011), and ecoinvent (2001) databases

<sup>2</sup>PlasticsEurope 2005 EPD; GaBi 5 PE (2010) database

<sup>3</sup>EMN LCA TR-2011-09644

<sup>4</sup>EMN LCA TR-2011-09958

These charts are pending a third party review.

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