

POLYONE CO.

The Company

- More than 60 manufacturing and distribution facilities in 20 countries
- Operations in North America, South America, Europe and Asia
- Joint ventures in North America
- Corporate headquarters in northeast Ohio (U.S.A.)
- More than 35,000 products

Turnover

- 2.1 billion \$ (2009)

Employees

- More than 10,000 employees globally

Branches

- Global leader offering a comprehensive array of specialized polymer materials
- Tailored services
- End-to-end solutions

Key bio-based products

- OnCap™ BIO Impact T additives - additive concentrates for biodegradable polymers



OnCap™ BIO Impact T

Transparent impact modifier for polylactic acid

Challenge Polylactic acid (PLA), although a relatively new polymer, has been specified for a broad and growing range of applications. It is embraced because it is based on renewable resources and appreciated for its extreme transparency and rigidity. However, for many applications, it is desirable to have improved impact properties.

Solution Typically, impact modifiers are used to enhance impact resistance. While a range of impact resistant polymers are available for polylactic acid systems, the options are limited by the demand for retention of transparency. PolyOne has discovered a combination of additives and molecules used at the nano-scale that results in the desired increase in impact resistance while maintaining good transparency.

Value Provided The use of OnCap™ BIO Impact T increases STET impact resistance of PLA while maintaining its transparency.

- The increased toughness improves tear resistance. This makes the sheet easier to cut during fabrication and simplifies handling and safety by reducing rough edges and uneven cuts. This also makes the sheet fit for final end use, helping improve consumer acceptance.
- Improved ductility also allows for holes to be punched in trays without tearing or shattering the tray itself. This results in increased production with less product failure as well as increased food safety.
- Reduced brittleness decreases the shattering of cups and trays during handling and packing, which lowers scrap rates and increases safety.
- Attractive, clear parts stand out on the shelf, helping improve consumer acceptance thereby increasing sales revenues and profits.



Looking for a Bio-Solution? Let PolyOne be your guide...

PolyOne's cutting-edge portfolio of sustainable solutions can help you meet today's challenges with renewable, recyclable, reusable, resource efficient, eco-friendly materials.





Link to Agrobiobase



Implementation OnCap BIO Impact T is available as a compound, or in a solid or liquid concentrate, for use in PLA resin. Usage rates vary based on the effect desired. OnCap BIO Impact T can be used with other processing additives and can be combined with colorants into a single Smartbatch™ BIO concentrate.

Applications OnCap BIO Impact T can be used in a variety of plastics processing equipment, including extrusion, injection molding, blow molding and film processing. Typical applications include food and beverage packaging, shopping and refuse bags, and consumer goods such as toys.



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