



Bio Solutions at PolyOne

Concentrates and Compounds for
the Biopolymer Industry



These products are designed to enhance the performance and applicability of bio-derived or biodegradable polymers and are certified as a PolyOne Sustainable Solution[®]

To learn more go to www.polyone.com/sustain

[®]The PolyOne Sustainable Solution certification is awarded to those products or services that meet defined criteria for sustainability in areas such as renew-ability, recycle-ability, reusability, eco-friendly composition, or resource efficiency.

PolyOne's Capabilities

PolyOne provides global polymer solutions with the ability to meet local regulatory and product specifications while offering the widest range of polymer-specific specialty colorant and additive systems and compounds. PolyOne has broad experience in color and additive concentrates, flame-retardant compounds, cross-linked systems, thermoplastic elastomer compounds, specialty compounds and compounding services. This expertise has been used to develop to a complete range of solutions for the biopolymer industry.

Biodegradable and Bio-Based Polymers

The use of biopolymers is increasing rapidly. These new materials have unique functional capabilities and limitations that must be clearly understood in order to properly meet the needs of end-use applications. PolyOne understands these dynamics and comes prepared to solve a range of processing problems and application performance issues with a complete toolbox of OnColor™ BIO biopolymer color concentrates and OnCap™ BIO biopolymer additives. From raw material processing to application aesthetics and performance, PolyOne can help you improve productivity and enhance the marketability of the final applications.

Product Description

PolyOne has developed a range of color and additive concentrates based on sustainable raw materials for the biopolymer market that meets the requirements and standards for compostable and biodegradable applications. PolyOne's products for biopolymers have been developed to improve the processing, performance and appearance of biopolymers, while preserving the "green" character of the end product. All ingredients are evaluated against the relevant standards.

PolyOne solutions include:

- **OnColor™ BIO** – Color Concentrates
- **OnColor™ BIO L** – Liquid Color Concentrates
- **OnCap™ BIO** – Additive Concentrates
- **SmartBatch™ BIO** – Combination of Color and Additive Concentrates
- **Bio-Compounds** – Tailor-made compounds based on biopolymers

OnColor BIO

These color concentrates are based on carriers of currently commercially available biopolymers such as modified starch compounds, biodegradable copolyesters, polyhydroxyalkanoates (PHA) and polylactic acid (PLA). The pigments in OnColor BIO color concentrates have been carefully selected to be in compliance with the standard for compostable packaging EN 13432 and ASTM D6400, while offering desirable coloration properties. Colors for modified starch blends, biodegradable polyesters and PHA are opaque, while colors for PLA are available in opaque or transparent shades.

OnColor BIO-L

PolyOne's liquid colorants can be used in a variety of biopolymers such as PLA or starch-based blends. OnColor BIO L liquid colorants can be processed with conventional equipment for liquid concentrates, and their viscosity range allows the use of standard dosing equipment. Benefits include excellent color distribution, quick color changeovers, low usage rates, and minimal inventory requirements.

OnCap BIO

PolyOne's OnCap BIO additive concentrates offer unique solutions specifically developed for the biopolymer market. These additive concentrates are available for each commercially available biopolymer such as modified starch compounds, biodegradable copolyesters, PHA and PLA.

OnCap BIO additive concentrates offer the following processing efficiency improvements :

- **Anti-block**
- **Anti-static**
- **Mold release**
- **De-nesting**
- **Laser marking**

Specific additive concentrates have been developed to enhance the functional performance of biopolymers:

- **Impact improvement**
- **Transparent impact modifier**
- **Plasticizing**
- **Foaming agent**
- **Anti-fog**
- **Optical brightness**
- **UV barrier**

SmartBatch BIO

A combination of color and additive concentrates are available in a single product formulation to simplify operations and logistics.

Bio Compounds

In response to the increasing demand for biopolymers, PolyOne has developed a series of biopolymer-based custom compounds for the packaging and consumer goods markets.

Processing

PolyOne's products for biopolymers can be used with conventional equipment for a wide range of conversion techniques and applications. PolyOne's products can be used in the following polymer processing areas:

- **Extrusion/Thermoforming**
- **Blown & Cast Film**
- **Injection Molding**
- **Injection Stretch Blow Molding & Extrusion Blow Molding**
- **Extrusion Coating**
- **Biaxial Oriented Film**

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