



B2N® Back 2 Nature The Science Behind Smarter Plastics

In-Depth Insights on Degradable Plastic Technology & Environmental Impact





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Who We Are

Global Environmental Polymers Inc. (GEPI) is a leader in sustainable plastic solutions, pioneering the use of EPI® TDPA® technology to create highperformance degradable plastics. Since 1998, we have been dedicated to reducing plastic waste by providing alternatives that break down naturally into carbon dioxide, water, and biomass, without leaving harmful microplastics behind.

With a global network of trusted manufacturers, we supply eco-friendly packaging worldwide, helping businesses reduce their environmental impact without sacrificing quality. Our commitment to innovation and sustainability drives us to create products that align with modern environmental standards, paving the way for a cleaner, greener future.

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Vision

Our mission is to lead the global transition to sustainable packaging by providing high-performance degradable plastics that reduce environmental impact without compromising quality. We are committed to innovation, sustainability, and empowering businesses to make eco-friendly choices that benefit both their brand and the planet.

- **Reduce Plastic Waste** Offer degradable solutions that break down naturally.
- **Inspire Sustainability** Encourage brands to lead by example in environmental responsibility.
- **Drive Innovation** Continuously develop cutting-edge, eco-friendly packaging technologies.
- **Promote Global Change** Support worldwide adoption of sustainable plastic alternatives.
- **Protect the Planet** Contribute to a cleaner, greener future for generations to come.



The Problem with Traditional Plastics

Why Traditional Plastics are Harmful

Traditional plastics are highly durable and versatile, making them essential in everyday life. However, this durability also means they take centuries to degrade, leading to widespread pollution. Discarded plastics accumulate in landfills, oceans, and natural habitats, posing serious threats to wildlife and ecosystems. Over time, they break down into microplastics that contaminate soil, water, and the food chain, posing potential health risks to humans and animals.

Environmental Consequences

- → Landfills Traditional plastics clog landfills, preventing natural waste decomposition and contributing to methane emissions, a potent greenhouse gas. This not only impacts landfill capacity but also accelerates climate change.
- → Oceans & Waterways Plastic waste pollutes oceans and rivers, disrupting marine ecosystems and harming wildlife through ingestion and entanglement. This pollution contributes to the growing issue of ocean plastic gyres, affecting marine biodiversity.
- → Agriculture Microplastics from degraded plastic waste contaminate agricultural soils, impacting crop growth and quality. They interfere with soil health and water absorption, posing long-term risks to food security and human health.





What Makes B2N® Different?

An Innovative Approach to Plastic Degradation

B2N[®] Back 2 Nature plastics use EPI[®] TDPA[®] additive technology to maintain the strength and functionality of traditional plastics while breaking down naturally into carbon dioxide, water, and biomass. Unlike conventional plastics that take centuries to degrade, B2N[®] plastics are designed to break down predictably after their useful life, leaving no harmful microplastics behind. This makes them an eco-friendly alternative that doesn't compromise on performance or durability.

Key Advantages Over Conventional Plastics

- → Programmed Degradation B2N[®] products can be designed to degrade within months to a few years, depending on environmental conditions like heat, sunlight, and microbial activity.
- → No Microplastics Unlike conventional plastics, B2N[®] fully integrates into the natural ecosystem without leaving harmful residues.
- → High Performance & Durability Maintains the same strength, appearance, and functionality as conventional plastics until degradation begins.
- → Versatility & Customization Suitable for a wide range of applications including food films, food bags, refuse sacks and industrial wraps.
- → Cost-Effective & Practical Easily integrates into existing manufacturing processes and inventory systems, offering a seamless transition from conventional plastics.



The Science Behind B2N® Technology

How It Works

B2N[®] Back 2 Nature plastics use EPI[®] TDPA[®] additive technology to accelerate the natural degradation process, breaking down into carbon dioxide, water, and biomass. Unlike conventional plastics that persist for centuries, B2N[®] products degrade predictably after use, leaving no harmful microplastics behind.

Oxidative Degradation Process

When exposed to heat, sunlight, and oxygen, the EPI[®] TDPA[®] additives trigger a process that progressively reduces the plastic's molecular structure. Over time, microorganisms consume these ever-decreasing fragments, converting them into natural elements that safely return to the environment.

Biodegradation & The Natural Biocycle

As B2N[®] plastics biodegrade, they become part of the natural biocycle, supporting photosynthesis and biomass creation. This process is 100s to 1000s of times faster than the breakdown of conventional plastics, which can persist for decades.

Smart Additive Technology

EPI® TDPA® additives ensure B2N® products maintain durability during use but begin to degrade once discarded. This controlled degradation allows for programmed lifespans ranging from a few months to a few years, depending on the application and the environmental conditions to which it is exposed.



Advanced Applications & Industry Benefits

B2N[®] Back 2 Nature plastics are versatile and customizable, suitable for a wide variety of industry applications:



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Retail & Grocery – Food Wrap Film, shopping bags, produce rolls, food bags, food display trays.

Food Service & Hospitality – Bread bags, pastry film, food wrap film.

Industrial & Commercial – Pallet stretch wrap, box liners, shrink wrap, bin liners.

Agriculture – Banana sleeves and ties, box liners, pallet stretch wrap.

Landfill Solutions – Enviro™ Wrap & Cover Systems.



Environmental Benefits

B2N[®] products help businesses meet sustainability goals while maintaining product performance and cost-effectiveness. By choosing degradable plastics, companies can:

- Reduce Environmental Impact Break down naturally without harming ecosystems.
- Enhance Brand Image Position themselves as sustainability leaders.
- Comply with Global Regulations Meet environmental standards for plastic use.
- Maintain Cost Efficiency Comparable pricing to conventional plastics.
- Seamless Integration Easily adoptable within existing manufacturing and inventory systems.

Sustainability Leadership

Switching to B2N[®] not only reduces plastic waste but also supports corporate responsibility and brand loyalty. Businesses can lead by example and inspire others to make environmentally conscious choices.

(!) B2N® TDPA® products are not available in or for shipment to the U.S. or EU member states.



Global Food Safety & Environmental Compliance

B2N[®] Back 2 Nature products meet the **highest safety and environmental standards**, ensuring they are **safe for direct food contact** and fully compliant with international regulations:



commercial food applications, ensuring safe use in packaging.

Certified & Safe

- Non-toxic & Non-ecotoxic No harmful residues during or after degradation.
- Microplastic-Free Breaks down into carbon dioxide, water, and biomass.
- → Fully Biodegradable Integrates naturally into the environment, supporting the natural biocycle.

Sustainability Certifications

B2N[®] products meet global standards for biodegradability, ensuring eco-friendly performance:

- ASTM D6954 Verifies the safe and complete breakdown of oxo-biodegradable plastics through a three-tier testing approach for degradation, biodegradation, and ecotoxicity.
- **BS 8472** A British Standard that evaluates the degradation, oxidation, and biodegradability of plastics, including the phyto-toxicity of residues. It relates to oxygen demand and CO₂ evolution to assess biodegradability in soil under controlled conditions.

Commitment to Quality & Real-World Degradability

B2N® TDPA® products are 100% degradable, breaking down naturally without requiring industrial composting. Composting standards like ISO 17088 and EN 13432 don't indicate biodegradability, and bio-based plastics refer to feedstock, not end-of-life degradation. Our focus is on practical, effective waste reduction for real-world sustainability.



Trial Challenges: Explore, Experiment, and Make an Impact

B2N[®] products offer a real-world opportunity to rethink waste management and sustainability. These challenges encourage schools, businesses, and communities to explore the environmental and economic benefits of degradable plastics through hands-on experiments.

Challenge 1: Landfill & Resource Recovery

Bury waste in B2N[®] products in one half of a small trial landfill and conventional plastic in the other. Over two years, compare:

- How much landfill space becomes reusable.
- What organic material can be harvested as fertilizer.
- The potential to replace harmful pesticides and reduce environmental impact.

Challenge 2: Organic Waste Composting

Dispose of food and organic waste in B2N[®] bags and compost the materials in a managed environment. Track:

- Compost quality and quantity.
- The impact of organic vs. chemical fertilizers on plant growth.
- Potential cost savings and health benefits.

Challenge 3: Waste Separation & Economic Opportunity

Explore how separating organic waste in oxo-biodegradable bags could:

- Create new businesses around organic fertilizer production.
- Offer a scalable waste-to-revenue model.
- Reduce landfill waste while fostering environmental responsibility.

Take the Challenge!

These experiments provide a unique way to engage with sustainability while uncovering the practical benefits of degradable plastics. Join the movement—start your trial today!





Ready to Make the Switch?

Join the movement towards sustainable packaging with **B2N**[®] **Back 2 Nature**. Our highperformance degradable plastics offer a smarter, eco-friendly alternative without compromising on quality or functionality. Whether you're looking to reduce plastic waste, enhance your brand image, or meet global sustainability standards, **B2N**[®] has the solution.

Why Choose B2N®?

- **High-Performance & Durable –** Functions like conventional plastics with programmed degradation.
- Versatile & Customizable Suitable for retail, food service, industrial, agriculture, and more.
- **Cost-Effective Integration –** Competitive pricing with seamless adoption into existing systems.
- Certified Safe & Eco-Friendly Meets global safety standards with no harmful residues.
- Secure Global Shipping DHL Global Forwarding ensures reliable delivery worldwide.
- Flexible Payment Options Up to 90 days available for qualified customers.

() B2N° TDPA° products are not available in or for shipment to the U.S. or EU member states.



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Contact Us Today

Let us help you make the switch to sustainable packaging. Our team is ready to provide customized solutions tailored to your needs.



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