



What Are Biodegradable Plastics?

Biodegradable plastics have been enhanced with Eco-One that initiates decomposition in a biologically active landfill. Such plastics can be either petroleum-based or completely or partly from renewable sources. Eco-One is designed for plastics in both categories.

How Eco-One Works: Creating a Feast for Bacteria

Microbes are normally not attracted to plastic in landfills, but plastics containing Eco-One get their attention. Microbes begin colonizing on the plastic surface, forming a moist biofilm. Enzymes secreted by these microbes make the plastic hydrophilic or "water-loving" and attract other microorganisms.

Chemistry Behind the Product

Eco-One promotes growth of microorganisms inside the biofilm, and this growing population turns the base plastic into nutrition for the colony. The molecular structure of the plastic expands, creating space for more organisms to penetrate and consume it. By breaking down the chemical bonds, the feast continues the biodegradation process.



Working together to make a difference!

GOEX Goes Biodegradable So You Can, Too

Dealing with Plastic Waste Today

Most people would agree recycling is the preferred way to deal with plastics, but while 62 percent of paperboard is recovered, only 9 percent of plastic is. The vast majority still ends up in landfills and remains there indefinitely. Plastic in municipal solid waste has increased from 1 percent in 1960 to 12 percent in 2009. That 12 percent equals about 30 million tons. At this rate, we run the risk of running out of room and options.

"With limited space for landfills, we need to invest in technologies that enhance the biodegradation of plastics in landfills. Then we reduce the amount of landfill space required for plastic products," said James Rooney, President of EcoLogic LLC.

Now there is a solution, and GOEX is part of it. Through a partnership with EcoLogic, a maker of environmentally responsible solutions for plastics globally, GOEX now offers organic Eco-One™ additives in extruded plastic sheet and roll stock products.

More Life for Landfills

The Eco-One brand of additives from EcoLogic enhances biodegradation of plastic products in biologically active landfills. This increases the life of a landfill by reducing millions of tons of plastic that would otherwise sit for years. "The solution deals with the landscape as it is today, not how we hope it to be in 10 or 15 years," said Bob Waddell, VP Sales & Marketing for GOEX.

You won't know this Sheetline edition was made using Eco-One™ until it gets to the landfill.

Look inside to find out why that matters.

Eco-One™ from GOEX inside --

It's a green thing.

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The Eco-One additive is finding its way into all kinds of things: running shoes and sandals; foodservice products like cups, bowls and cutlery; protective foam packaging; Whole Foods food packaging; plastic shopping bags; film products for packaging medical applications; and apparel.

A Partnership and a Vision

"We have completed an exclusive partnership that no one else in industry can replicate. We have worked with EcoLogic for the past year to launch a line of biodegradable products incorporating Eco-One technology," said Waddell. "This new line of products reinforces our commitment to the environment. It perfectly complements our ongoing plastics recycling initiatives."

EcoLogic and GOEX worked side by side for a year to identify target applications and customers to trial and test the Eco-One line. "To date we have successfully run in a number of resins and have achieved favorable performance testing and biodegradation testing," Rooney said. Eco-One differs from other biodegradability additives because it is backed by scientific evidence and certification of how much degradation occurs.

"GOEX has an excellent reputation in the plastics industry for being on the cutting edge of technology and environmental stewardship," said Rooney. "This partnership illustrates Eco-One's performance characteristics as it relates to a number of plastic resins used in a wide variety of applications."

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GOEX

Personally
from the President

In Step with Change. In Touch with You.

If GOEX were a company intimidated by change, you wouldn't be reading the articles featured in this issue of Sheetline.

Status quo is not in our vocabulary. We see the market and the world going through unprecedented change, and we want to impact that in a positive way.

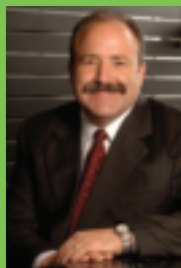
Look at what's happening in our landfills. As the volume of plastic waste expands, GOEX is part of a team committed to making traditional plastic more sustainable. Our belief in environmental business practices takes on a new dimension with Eco-One, as you'll see in the article.

We're also mindful of the environment as we design and build our new facility. For example, with expanded parking and building space, the amount of impermeable ground also increases. In our plan, all storm water will be handled on site using retention ponds with natural filtration. No water is sent to the city wastewater treatment facility, thus reducing the burden on city infrastructure. And that's just one way we're steering change for the good.

Building and relocating to a much larger facility is itself a massive change, but one rich in excitement and possibility. What this means for our customers is a partner fully prepared to help you with your own evolving needs for the long haul. While some companies close plants, GOEX is going in the opposite direction.

Barex resins have been around for a while, but to a new generation of packaging professionals, it represents a fresh alternative for a wide range of applications. And Barex is moving into new packaging lines and embracing more manufacturing processes. This article will change the way you look at this tried and true resin.

In spite of all the change, at our core, we're still the same GOEX, known for our excellent reputation in the plastics industry and our commitment to working with customers and partners on worthwhile goals. Status quo may not be in our vocabulary, but stability always has been.



Regards,

Joshua D. Gray
President & CEO,
GOEX Corporation

Barex Resin: "The Big Neutral"

Barex Extruded Sheet: Take a Fresh Look at This Worthy Resin

If a packaging material came with exceptional oxygen barrier protection and chemical resistance, combined with strength, impact resistance, and processing versatility, wouldn't you want to know more? Then read on.

The more you know about Barex® resin, the better the story gets. One thing to know is that Barex isn't any untried newcomer. The product has been around for many years and with good reason. It's a versatile, affordable polymer with many applications. Introduced commercially in 1975, Barex resins initially found widespread use in making packaging for a diverse mix of products like processed meat, correction fluid, gasoline additives and agrochemicals.

What's the secret of this long career? Products made with Barex resins keep flavors, aromas and essences alive. This secures product integrity and extends shelf life for food, cosmetics, personal care items and fragrances.

Longevity Comes from Versatility

A diverse and unique set of features also keeps Barex viable. No other plastic can match its combination of chemical resistance, flavor retention, oxygen barrier, fragrance retention, inertness to essential oils and solvents, wettability - the list goes on.

"I have a good friend outside the chemical industry who calls Barex 'The Big Neutral,'" remarks Barex CEO David Schmidt, and it's an appropriate title.

"We are used in DNA analysis trays due to our wettability, and in LCD panel packaging for dissipation of static charge. And we are used to make bottles for fuel additives and nail enamel because of our chemical resistance. Those are four diverse examples of completely different markets where we have made our mark. It shows just how diverse and eclectic our features are," explained Schmidt.

GOEX Is Exclusive Barex Extruder in North America

GOEX Corporation (Janesville, Wisconsin) is the exclusive Barex sheet extruder in

North America, and one of only three worldwide. "GOEX can extrude Barex into rolls or sheets in gauges of .010" up to .050". INEOS Barex, based in Switzerland but with its main production facility in Ohio, is the world's largest manufacturer of Barex resins. We have recently made some significant changes to our operation which has opened up quite a bit of additional capacity, so we can grow very quickly," Schmidt said.

Flavors In, Oxygen Out

While other plastics might offer one or two of the Barex features, no other plastic out there offers Barex's chemical resistance, oxygen barrier and chemical inertness without having to be layered with other products. Barex has one of the lowest oxygen permeabilities of any single layer polymer packaging system. Barex offers an oxygen barrier that is 8-10 times better than PET.

The tough barrier keeps aromas, fragrances, natural and volatile components on the right side of the package, with little to no interaction between packaging and content.

Lighter Packaging Pays Off in Savings

"Barex offers our customers many advantages," said Bob Waddell, Vice President - Sales for GOEX. With its exceptional strength, it matches the toughness of other resins, even at reduced thickness, allowing source reduction and lighter packaging. This can mean cost savings to end-users.

Excellent Packaging for Tough Applications

With its chemical resistance, many compounds, chemicals and solvents can be safely packaged with Barex without adverse interaction. Most plastics panels buckle or weaken from contact with acids, bases and other corrosive compounds. Barex maintains chemical integrity long after other plastics fail. Extremely inert, Barex has the chemical resistance to withstand many of the most aggressive chemicals.

In addition to chemicals, other applications include foods; edible oils; cosmetics; and industrial, automotive and household products. Barex is

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New GOEX Facility

Making a Bet on The Future

By this time next year, GOEX will be close to live production in a new, state-of-the-art facility. It's not that the old Janesville, WI plant is outdated or at capacity; it's just out of room. GOEX plans to break ground on a 30-acre industrial site for the 160,000 square foot manufacturing building in August 2013.

"GOEX has grown tremendously, but the space doesn't suit the needs of the business today, not to mention the future," said GOEX President Josh Gray. "We need more room."

The present facility is 75,000 square feet and filled with equipment. "We're cramped, and it restricts our ability to make improvements, from modifying the raw material flow into the building, to arranging product lines, to handling truck traffic," he added.

A State-of-the-Art Facility

The new location, also in Janesville, will be twice the size of the current plant with enough space to double again. The present site is landlocked and can't expand. The plant will have a similar layout and flow from plastic pellet to outbound truck, but the configuration of the manufacturing floor and equipment will be improved.


New extrusion equipment has been purchased, and more is on order, to get business up and running in the larger site, as existing equipment gets refurbished before moving it in. After that, the new equipment will provide additional capacity to extrude a wide variety of resins into quality custom rigid plastic sheet and roll stock products.

Plan Is Already Underway

Transition planning has already started, along with lots of communication to customers. "Some, like print customers, are not concerned. Others in medical and other packaging understand we may have to do retesting and validation," said Bob Waddell, GOEX Vice President of Sales and Marketing.


When the building is complete, the entire current facility will relocate and be fully integrated in Q1 2015. Today's facility will stay in the family; it will be taken over by the sister-company's thermoforming business.

Faith in the Future

"There's always risk in an investment like this, but we believe in ourselves and this industry. We're willing to take a risk," explained Gray. "The new plant signals a strong commitment to the future growth of GOEX, the industry and our customers. From the customer perspective, we are investing in our business, so we can be a stronger partner to theirs." 

Eight Quick Facts About the New GOEX Plant

- Completely air conditioned and environmentally controlled. No open doors or screened entrances inviting airborne dust or insects.
- Redesigned extrusion equipment layout to streamline material flow and plastic processing.
- New rail spur and bulk rail material unloading systems to receive raw materials in all configurations, from bags to railcars.
- Additional silo capacity, bringing onsite external storage volume to over 2 million pounds.
- Additional warehousing footprint for space to best locate ready-made Quick Pak stock materials, slitting, plastic recycling, and heavy gauge material converting.
- Upgrades to closed loop process chilling system using highest energy efficient systems available.
- Plant-wide use of high efficiency lighting including energy-efficient LED lights.

- Enlarged Quality Assurance/Development Lab for product development. 

Out of the Box

Just a humorous distraction to help you think a little differently.

There are good laws, and then there are laws that are just plain... weird. Here's a sampling of some "out of the box" legal thinking.

1. In Quitman, Georgia, US, it is illegal for a chicken to cross the road.
2. In Breton, Alabama, there is a law on the town's books against riding down the street in a motorboat.
3. You can't plow a cotton field with an elephant in North Carolina.

4. It's illegal to drink beer out of a bucket while you're sitting on a curb in St. Louis.
5. A barber is not allowed to advertise prices in the State of Georgia.
6. In Corpus Christie, Texas, it is illegal to raise alligators in your home.
7. In West Virginia, only babies can ride in baby carriages.
8. It's against the law to pawn your dentures in Las Vegas.

But the USA is not the only country with some "out of the box" legal requirements.

1. Moscow weathermen can be fined for inaccurate weather forecasting.
2. Tipping at a restaurant in Iceland is considered an insult.
3. It's illegal to own a red car in Shanghai, China. 

Source <http://www.funfactz.com/weird-laws/>



“GOEX Goes Biodegradable”, continued from page 1

No Change to Product Performance

When GOEX incorporates Eco-One technology into extruded sheet, it enhances the biodegradability of products that ultimately end up in biologically active landfills. The proprietary Eco-One blend of organic materials is incorporated during the sheet extrusion process.

“We supply products for every resin type currently used, and this cost-effective solution incorporates easily into manufacturing processes,” said Rooney. A grade is formulated specifically for each resin type and manufacturing process to ensure the product looks, feels and performs the same as standard products that don’t include Eco-One.

When GOEX customers choose Eco-One enhanced plastic, they can be assured of environmentally attractive products, without compromising product integrity during manufacturing, storage and use. There are no adverse effects to printing, forming, die cutting, sealing or other post-processes. Shelf life and performance remain unaffected. The polymer alteration process only begins when exposed to an environment that is moist and has microorganisms, such as a biologically active landfill.


Sustainability Is Good for Business and Brands

Sustainability is critical to success, say most CEOs today. Unlike other sectors of the packaging industry, sustainable packaging has experienced good growth over the past few years, bucking the economic downturn. Greater environmental awareness, government initiatives, and growing economies have helped propel this growth. Companies see sustainable packaging as a marketing tool to differentiate their products in the eyes of consumers.

“The GOEX team has proven to be knowledgeable in sustainable practices and adept at communicating the value proposition of their sustainable practices to their target markets,” Rooney declared. Customer interest helped drive the decision to incorporate Eco-One into GOEX products. Now Eco-One provides brands with a sustainable plastic solution that meets the growing demands of consumers around the world. Maybe it’s time to look at Eco-One enhanced resins for your brand and your customers.

Learn More About Biodegradable Plastics

Download these free white papers from ecologic-llc.com/resources/

- Plastic Biodegradation 101
- Rate of Biodegradation of Plastics in Landfills
- Methane to Energy Conversion
- Plastic Biodegradation in Landfills 

Eco-One is a trademark of EcoLogic, Inc. All other trademarks are the property of their respective owners.

Barex Resin: “The Big Neutral”, continued from page 2

particularly useful in food and beverage, where it enhances shelf life and improves flavor and aroma retention through reduced oxidation. Resistance to grease, oil, gasoline, aggressive chemicals and solvents ensures a strong demand for agriculture, automotive, and industrial chemicals.

Continuous Improvement Leads to New Directions


Looking ahead, Schmidt talked about near-term applications under development. “We are working with a leading university in Ireland to develop applications for this grade, and we’re in the process of certification as an ISO 10993 Medical Polymer. Medical Grade Barex will be the purest product we offer, with extremely tight quality specifications. In addition, our improved I-Clear will be water-white and haze free. We have enhanced our I-Clear Barex and are in the production stage for this product. Both our Medical Grade Barex and our improved Clear Grade will open markets in medical, pharmaceutical and cosmetic markets.”

Design Flexibility = Consumer Appeal

Consumer appeal is another attractive characteristic. Design flexibility allows specialized packages that attract shoppers’ attention. Along with toughness, Barex offers high clarity, making it a good glass substitute. Barex has several advantages over glass, including light weight, ease of handling, and safety.

Want To Know More?

Catch up with Barex action in November at the 2013 American Association of Pharmaceutical Scientist (AAPS) Annual Meeting and Exposition.
<http://www.aaps.org/annualmeeting/>

But don’t wait until then to start adding Barex to your brands. Contact GOEX Corporation today to learn more. 

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Production Notes
Stock: GOEX CAROM 45 PVC
Press: Heidelberg XL-106 with Full UV Coating

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