



ECO SMART®

Earth friendly plastic that returns to nature®

FREQUENTLY ASKED QUESTIONS



**Your Planet.
Your Choice.**

What is Eco Smart®?

Eco Smart® is a biodegradable line of propel/repel containers made by Federal Package. The containers are our same high-quality polypropylene containers but now there is an option to get these with our biodegradable additive. This allows the container to maintain the product's integrity until disposal but then will allow the package to degrade when exposed to biologically active municipal landfill or marine environments.

What specifically is the biodegradable agent?

The agent is an organic additive that enhances the bio-degradation process through a series of chemical and biological processes when disposed in a biologically active environment.

How does the bio-degradation process work?

When placed in a biologically active environment, the ingredients in Eco Smart allow for the formation of a coating (called "bio-film"), on the surface of the plastic. The bio-film is made up of microbes which penetrate the plastic, while other ingredients in Eco Smart work together to expand the molecular structure, in turn making room for microbes. The microbes then send out chemical signals (their way of communicating,) to attract additional microbes to the site. Once all the microbes have been assembled, they collectively feast on the polymer chains, thus breaking down the chemical bonds of the plastic product at an accelerated rate.

Are these products the same as starch or sugar-based plastics (e.g., PLA, PHA, PHB, etc.)?

No. Those plastics require oxygen and UV light or heat to initiate degradation and therefore will not biodegrade. Eco Smart containers do not require either UV light, oxygen or heat to biodegrade.

What testing can be shared with us to this point?

To substantiate our claims of enhanced bio-degradation we have completed multiple studies that include testing from independent third-party laboratories against regulated standards ASTM D5511 and ASTM D6691 protocols for environmentally active municipal landfills and marine environments. Federal Package can share these test results. Please contact us.

Can Eco Smart® containers be recycled?

There is no change in the ability to recycle these containers versus our standard containers and they can be placed into any recycle stream that accepts No. 5 (polypropylene) plastics. Eco Smart containers can still carry plastic identification No. 5, indicating they are perfectly designed for recycling in any polypropylene stream, just as our original containers.

Do your Eco Smart® containers have a limited shelf life?

No, this line of containers has the same long-term shelf life as our standard containers when stored in typical storage conditions. There are no special storage requirements.

Will the Eco Smart® containers biodegrade in the ocean?

Yes. To substantiate this, we have completed independent third-party laboratory testing against the regulated standard ASTM D6691 protocol for marine environments. Federal Package can share these test results. Please contact us.

Are any of the ingredients in the additive harmful to people or to the environment?

No. Our containers are non-toxic, FDA compliant for food and cosmetic applications.

How long does it take for Eco Smart® containers to breakdown in a landfill with this biodegradable agent?

This new biodegradable technology dramatically accelerates the bio-degradation process. According to ASTM D5511 (representative of biologically active municipal landfill) and ASTM D6691 (marine environments) test results to date, our containers may degrade in under 10 years. The testing indicates that once the bio-degradation process is started, it will continue its bio assimilation.

What is the environmental impact of the new biodegradable resin?

As the polymer chains biodegrade, biomass (humus) and bio-gases (methane and carbon dioxide) are left behind. The carbon dioxide produced in the intermediate steps is being consumed in each subsequent step; therefore, not much is left at the end. The methane can then be captured for energy use.

What conditions are needed for the components to biodegrade?

Federal Package's Eco Smart containers require the specific microbes, temperatures, and moisture content found in biologically active municipal landfill and marine environments for bio-degradation to occur.



Build a greener future.

For more information, contact:

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