



EcoPure®

What is EcoPure®

EcoPure® is an organic additive that causes plastic to biodegrade through a series of chemical and biological processes when disposed of in a microbe-rich environment, such as a biologically active landfill. Microbes send out chemical signals attracting other microbes. Collectively, they feast on the polymer chains breaking down the chemical bonds.

EcoPure® requires the action of certain enzymes for the biodegradation process to begin, so plastics containing EcoPure® will never begin to biodegrade during normal use. The by-products of the biodegradation process depend on the disposal environment, but are non-toxic and some are even economically valuable for energy, such as Methane. Other by-products include humus (which can be used to make soil richer) and carbon dioxide.



How EcoPure® Works

Plastics (or polymers) are made of long molecular chains of organic molecules called monomers. Polymers do not exist naturally and most are designed to be incredibly stable. The common perception is that these materials do not easily biodegrade and may last in the environment for centuries and possibly forever. Many plastic products, such as bottles and food containers, are air-tight and water-tight.

EcoPure® Applications

EcoPure® helps reduce the waste from the hundreds of plastic products used everyday, by rendering them biodegradable in a microbial rich environment. The following plastic goods are just a few examples of products EcoPure® can be used in!



EcoPure® is an extremely versatile additive that can be used in a wide variety of applications, from bulk trash bags to custom engineered durable goods. Manufacturers have used EcoPure® with both thermoplastics and thermosetting polymers in many different resin types.

For processing ease EcoPure® is available in forms specific for use in EVA, EVOH, HDPE, LDPE, LLDPE, Nylons, PET, PETG, Poly Carbonate, PP, and various grades of Polystyrene.

This versatility means just about any household or industrial plastic good can benefit from the addition of EcoPure® technology. Plastics treated with EcoPure® can help lessen your impact on the environment.

Are you and your company doing all you can do to convert your plastic goods to make sure you are not contributing to the growing problem of global plastic pollution?

POLYDIME has been associated with the plastics industry since 1998 producing Polythene in roll, bag and pouch form, Alkathene and drip irrigation pipes, multilayer lamination films and pouches. We take pride in being one of the sought after names in the plastics packaging industry in Sri Lanka & Internationally.

Bio Degradable Additive

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ISO/IEC: 17021
QMS-001-01

EcoPure® Testing

95% of all plastics end up in landfills. EcoPure® treated biodegradable plastics are a real world solution to a real world problem of growing plastic waste.

EcoPure® additives are tested and validated to show accelerated rates of biodegradation. The test method used to determine the degree and rate of biodegradation of plastic materials in an oxygen-free (anaerobic) environment is the ASTM D5511 Standard Test Method for Determining Anaerobic Biodegradation of Plastic Materials Under High-Solids Anaerobic-Digestion Conditions. The sample materials are placed in an inoculum derived from anaerobic digesters operating on household waste. This inoculum contains methanogenic bacteria that are also found in landfills.

After the inoculum is prepared, the sample are placed in incubation vessels and kept within strict temperature and moisture tolerances. The vessels are airtight and are not exposed to UV radiation. Gas sampling are taken daily to show the rate of gas Production.

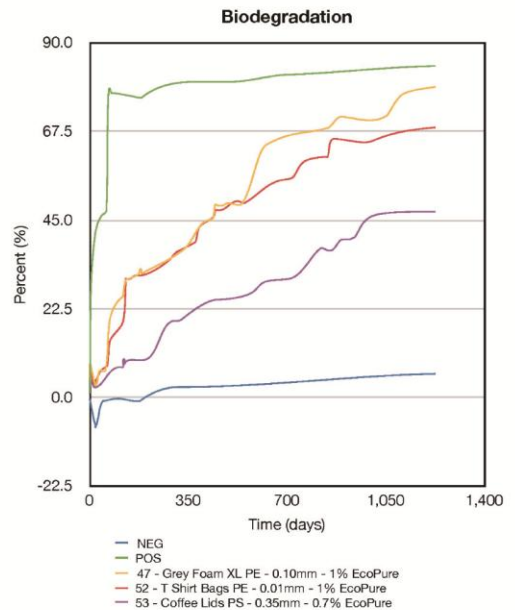
Plastic materials, treated with EcoPure additive, tested under the ASTM D5511 method show highly accelerated rates of biodegradation.



To: BioTec Environmental
Date: July 24, 2013

Test Method: ASTM D5511
Regarding: Various BioTec Environmental Samples (1227 Days)

	Inoculum	Negative	Positive	Gray foam XL PE- 0.10mm -1% EcoPure	T Shirt Bags PE- 0.01mm -1% EcoPure	Coffee Lids PS- 0.35mm - 0.7% EcoPure
Cumulative Gas Volume (mL)	5036.1	5815.0	21541.7	15558.6	17367.8	22407.4
Percent CH ₄ (%)	44.3	50.0	61.5	47.0	53.6	55.4
Volume CH ₄ (mL)	2228.9	2909.0	13247.9	7304.8	9301.9	12416.5
Mass CH ₄ (g)	1.59	2.08	9.46	5.22	6.64	8.87
Percent CO ₂ (%)	25.1	26.8	35.3	24.1	29.7	27.5
Volume CO ₂ (mL)	1266.0	1558.5	7594.2	3756.3	5158.3	6168.2
Mass CO ₂ (g)	2.49	3.06	14.92	7.38	10.13	12.12
Sample Mass (g)	1,000	10	25	6	10	20
Theoretical Sample Mass (g)	0.0	8.6	11.1	5.1	8.6	17.1
Biodegraded Mass (g)	1.87	2.39	11.17	5.93	7.75	9.96
Percent Biodegraded (%)		6.1	84.1	78.8	68.5	47.2
*Adjusted Percent Biodegraded (%)		7.2	100.0	93.7	81.5	56.1



* The adjusted percent is not within the method but is informative and very likely the actual degraded amount when biomass is considered.

Meet Your Sustainability Goals with EcoPure®

Sustainability is defined by the Environmental Protection Agency as "an attempt to provide the best out-comes for the human and natural environments both now and into the indefinite future."

The mission behind EcoPure® additive, is to use our developments in biodegradation technology, to help our clients to be successful in their environmental and sustainable business goals. We believe, through the use of EcoPure, it is possible to achieve this goal without compromising the environment for future generations.

The Problem of global plastic waste and pollution continues to grow as more and more societies around the world are becoming dependent on the convenience, durability, and economy of plastic goods.

EcoPure®, producing landfill biodegradable products, is a real world solution to this global problem.



For More Information Login into:

www.goecopure.com