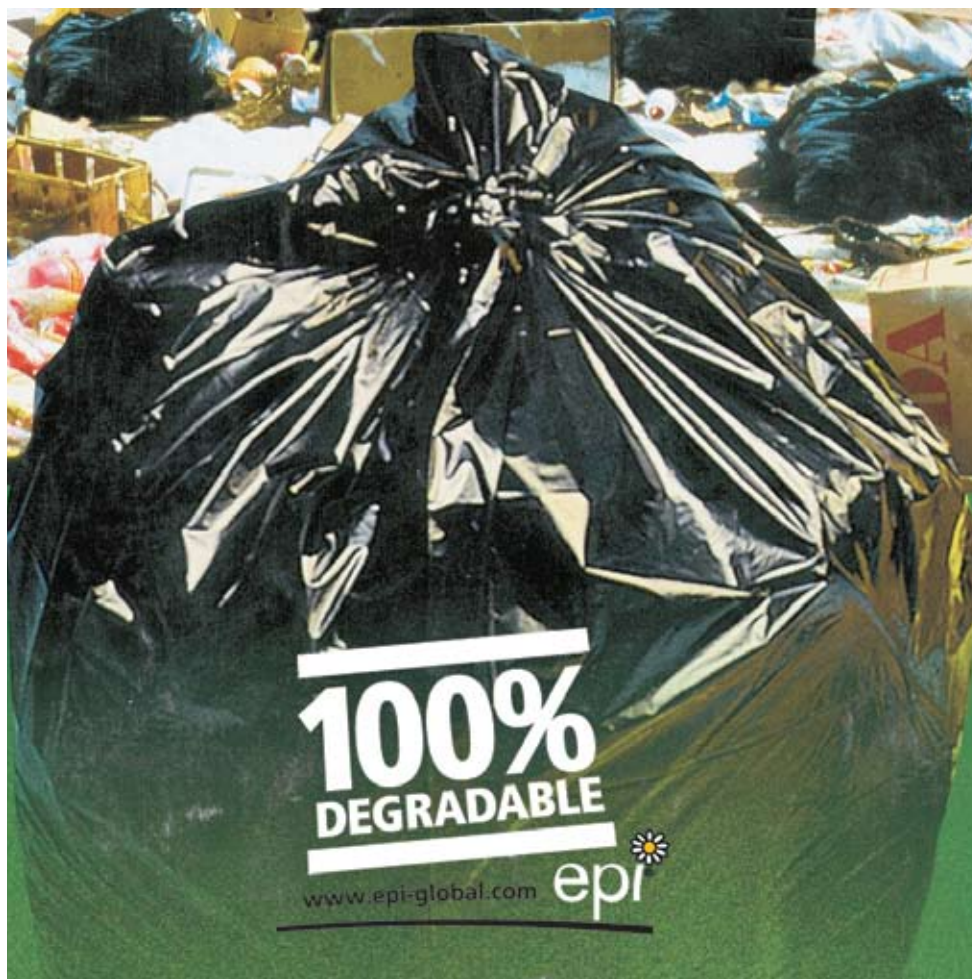


# Bio<sup>1</sup>Degradable<sup>2</sup> Garbage Bags

**100% Degradable Plastic Garbage Bags** produced from commodity **PE** resins and incorporating EPI's **TDPA®** (Totally Degradable Plastic Additives).



0 Days      After 30 Days      After 55 Days



*Illustration of photo and thermal degradation of a carrier bag incorporating EPI's TDPA® additive (top row) vs. a bag without EPI's TDPA® additive (bottom row). Test procedures follow ASTM D5272 "Outdoor Exposure Testing of Photo Degradable Plastics" Guidelines.*

This product is made possible by EPI's pioneering OXO-BIODEGRADABLE additive technology that has been recognized under the ASTM 6954-04 guide. Exposure to sunlight or heat triggers a two-step process, wherein the plastic breaks down through oxidation into small fragments, which then decompose into the natural elements of carbon dioxide, water, biomass, and minerals.

Today's consumers want a responsible and sustainable approach to protecting our environment when using low-cost, convenient, and disposable products. These bags are just as strong as ever, they are not affected by moisture and can be used again and again until the breakdown process begins.

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<sup>1</sup> This product, when discarded in soil in the presence of microorganisms, moisture and oxygen, will BIODEGRADE decomposing into simple materials found in nature, as described in ASTM D 6954 - 04. <sup>2</sup> This product is DEGRADABLE when discarded in landfill within 12 to 24 months.

The environmental claims statements represented above are provided to EPI's licensees merely as representative examples, and therefore EPI disclaims any and all liability in connection with its use by licensees. Licensees shall perform their own due diligence and obtain their own independent advice relating to any and all environmental claims statements made or declared by the licensee with respect to products incorporating EPI's TDPA® additives. However, EPI's legal counsel, Keller and Heckman LLP, have provided legal opinions to EPI stating that the above claims are appropriately qualified to meet the relevant legal and regulatory requirements for environmental claims both in the United States and the European Union, including but not limited to requirements under the Federal Trade Commission Guides. Nevertheless, for environmental claims statements made or declared in the state of California, licensees are referred to the California Public Resources Code, Division 30, Part 3, Chapter 5.7, Sections 42355 - 42357, for guidance.

# 100% Degradable Plastic Garbage Bags



**IMAGINE** the benefits of totally degradable plastic garbage bags that:

- when disposed of in landfill sites or when inadvertently littered, will degrade and ultimately biodegrade into carbon dioxide, water and biomass
- help reduce the build up of dangerous methane gas in landfill sites
- save valuable landfill space and extend landfill life
- keep you ahead of both environmental legislation and public opinion

In today's "disposable" oriented society, thousands of tons of garbage are disposed of in landfill sites daily. A vast amount of today's plastic waste ends its life-cycle in a modern sanitary landfill where it stays for decades to come, leaving our children with an ever increasing mountain of plastic waste. Even worse, plastic disposed of as litter represents an eyesore and may cause sanitation and health problems in the environment.

Today's plastic does not have to last for many decades or longer. The life cycle of many plastic products, including plastic garbage bags, only require the products to have relatively short life spans. These products are not effectively recycled. However, a serious problem associated with non-degradable garbage bags disposed of in landfills is the creation of semi-permanent "tombs" preventing degradation of the contents within. Incorporating EPI's TDPA® (Totally Degradable Plastic Additives) into the regular production of plastic garbage bags will cause the bags to degrade when subjected to sunlight, heat and/or mechanical stress over a pre-determined period of time. This degradation of the garbage bag will then allow further degradation of the contents within.

## EPI's Totally Degradable Plastic Additives (TDPA®) differ substantially from existing starch based technologies

EPI's TDPA®:

- are incorporated with **commodity polyolefin (PO) resins** and processed on **standard plastic processing machines** to produce plastic end products with **controlled life cycles**
- produce uniform, quality end products which are 3 – 4 times more economical than existing starch based technologies
- can produce degradable plastic products in numerous colors and transparencies

Degradable plastic products incorporating EPI's TDPA® additives:

- retain the characteristics of regular plastics (strong, tough, and flexible) during use
- will degrade and ultimately biodegrade into carbon dioxide, water and biomass with no harmful residues
- will start degrading when subjected to sunlight, heat and/or mechanical stress
- will degrade in landfills, when buried in soil, when inadvertently disposed of as litter, or in compost facilities



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