

# 3 methods to deal with plastics waste

This is the last part of a series about plastics and their effect on our environment.

There are three ways of dealing with the plastics waste problem. They are recycling, incineration and source reduction.

## RECYCLING

First, not all plastics can be recycled into new products. Some resins will not tolerate the reheating the rest degrade (breakdown) with repeated heatings.

This is due to the unique properties of each plastic resin. Each resin has different physical and chemical characteristics and, therefore, react differently to reheating and have varying melting points. As a result, most plastic recycling is limited to single resin containers, such as milk jugs and soda pop bottles.

However, a new process, called ET/1, now allows the reprocessing of previously chemically-incompatible plastics, including bottles, multi-layer containers, film. The recycled material is molded into an assortment of lumberlike products. There are currently two companies in Michigan that produce this plastic lumber product.

Recycled plastic applications are further limited by the FDA. Their regulations require that any recycled material that is to be used to package food must be guaranteed by

the manufacturer to be free of any contaminants. Because recycled plastics cannot be reheated to a high enough temperature to insure this, plastics are not currently reused to make food packaging.

## INCINERATION

While recycling and reduction are slowly gaining support, incineration is accelerating as a disposal alternative. There are 111 municipal incinerators currently operating in the U.S. According to the EPA, 210 additional ones are planned or under construction. The plastics industry is a strong supporter of incineration of plastics citing that plastics release more energy (because it's made from petrochemicals) when burned and helps to burn the whole waste stream more efficiently.

There are several major concerns with burning plastics. One, many of the additives used to process or color plastic products contain toxic heavy metals, including cadmium, nickel and lead. These metals do not combust, but have been found in air emissions and ash from municipal incinerators.

Second, hydrochloric acids (HCL) are released when PVCs are burned. In low concentrations, HCL does not affect humans, but it can result in significant damage to plants, buildings and the incinerator itself.

The main controversy in the incin-

eration of plastics centers on dioxins. Dioxins are formed when certain products of incomplete combustion combine with chlorine. Studies have been inconclusive as to the extent of emissions at this point.

## SOURCE REDUCTION

Source reduction simply means that consumers must reduce the amount of plastic they use and, ultimately, discard. This can be done in a number of ways. Omit single use, disposal products, such as lighters and razors, from your purchases.

Ask for paper instead of plastic when possible. Find new uses for plastic products that would normally be thrown away. Recycle plastic jugs and containers at nearby recycling centers that accept plastics.

Another way to reduce solid waste in landfills is through the use of degradable plastic products.

Plastics will not normally break down unless exposed to high temperature or intense ultraviolet light. However, by altering the chemical makeup, plastics can be made susceptible to decomposition.

There are two processes used to make plastics degradable: PHOTODEGRADATION or degradation in the presence of sunlight is achieved by mixing light sensitive additives into the normal plastic resin or in the structure of the polymer itself. Several American and Canadian

companies manufacture products, such as six-pack rings and trash and grocery bags, currently in use.

BIODEGRADATION or degradation through microorganisms is achieved by mixing the resin with an additive, usually starch, that can be eaten away in a landfill or other microbial active environment. Biodegradation does not require sunlight in the process.

While both of the degradable plastic processes will reduce the amount of solid waste and litter, some safety

concern have been expressed in their use.

Packagers, environmentalists and health officials feel that degradable plastics may leave unwanted or toxic residues in package contents or in landfills.

Clearly, the many benefits in using plastics are counter balanced by the pollution and disposal problems they create. Each consumer must decide how to balance convenience with human and environmental health and economic costs.



**Terry Gibb**

The Consumer Mailbag answers your questions. Address mail to The Consumer Mailbag, Concern Detroit, One Kennedy Square, 4th Floor, Detroit, 48226.

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