

# Polymers and the Environment

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# Euphrates



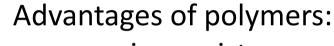
Synthetic polymers release reactants which are hazardous both to humans and the environment. These cannot be degraded into the environment, causing a buildup of chemicals all at once, causing a release of any "excess" chemicals into the environment. The effects is also that when plastics is burnt it creates pollution by the production of carbon dioxide which contributes to global warming.

Number of plastic bags used worldwide each year: 4 trillion to 5 trillion Amount of oil used annually to produce plastic bags: 65 billion to 80 billion liters Amount of plastic used worldwide every year just to bottle water: 1,500,000 to 2,700,000 tons Amount of trash in the Pacific garbage patch: 3,5 million tons





Plastic accounts for approximately 25 percent of all refuse in landfills. This fact alone makes the disposal of plastic a major problem. Combined with the fact that plastic is non-biodegradable, this makes the presence of plastic in landfills a critical issue.



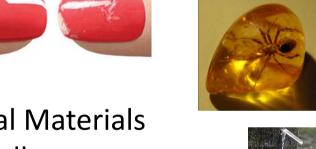
- corrosion resistance
- chemical resistance
- economical
- Aesthetics

Disadvantages of polymers: degrade or denature subject to bacterial infestation (plastics impregnated with organic fillers) low maximum service temperature





- shellac
- amber, natural rubber,
- cellulose







Synthetic Materials

Bakelite,

neoprene,

polystyrene,

polypropylene,

nylon,

PVC,

• synthetic rubber,



What kind of products are being made.

Circle of Polymers

Recycling

How it is recycled.

## Finland

Landfill

- packaging tax,
- return rate of refillable bottles 98%
- automated redemption machines



### Ireland

After use of their plastic items, such as bottles and other packaging each household is asked, although not obligated, to separate this waste from the rest of the household waste.



#### The Netherlands

Service points / Recycling points are often located near a supermarket, a public area or near a school. At these recycling areas you can not only recycle PET bottles but also: cloths, batteries, glass bottles (all colors separated), old mobile phones, light bulbs and fat.

#### Romania

Collection

The collection of the plastic.

In Romania collecting is made selectively. Plastic packages wastes go in the yellow containers, than to salubrity and then the sorting ramp. Before being taken to recycling or transformation, PET goes though the ample process of cleaning then are sent to the recycling companies.



Within one year there is 100 000 tons of plastic bottles going to the landfill. Only 200 tons is recycled. Fortunately this figure has been growing every year. The PET bottles are recycled into fibers, films, fuel and even furniture. The plastics are collected into yellow colour contenairs.

### Plastic bottles

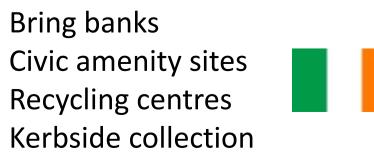
- utilisation of plastic as a raw material for new bottles,
- refilling empty bottles (up to 18 times)

#### Recycling

- flattening,
- grounding,
- 'flakes' are delivered for reuse

The Netherlands' waste management system is highly regarded around the world. However, the country sticks to a simple plan: avoid waste as much as possible, recover valuable raw materials from waste, generate green energy from waste when possible and only discard the waste that is left over.

This isn't necessarily an original waste management plan, but the way the country goes about their plan is original – and it's working. Second only to Germany, the Netherlands leads the world in recycling, with 65 percent of all waste recycled.



Most of the materials recovered nowadays is from the packaging wastes, that are 63% of plastics produced in Poland. After the collection majority is used for energy recovery and recycling.

Romania recycles only 1% of the whole volume of wastes that it produces, the rest is dumped at the landfills. However from 2005 the Romanian state is obligated by the European legislation to recycle a certain percent from the quantities of waste from packaging.







