



# Environmental Impacts of Technology **Plastics**



## **A Brief Overview**

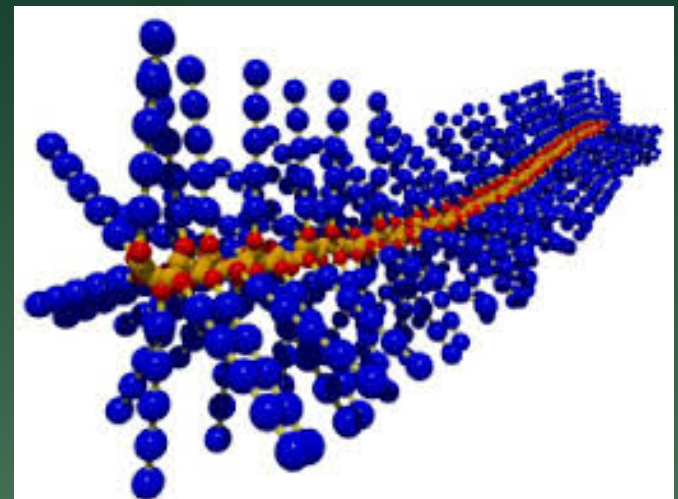
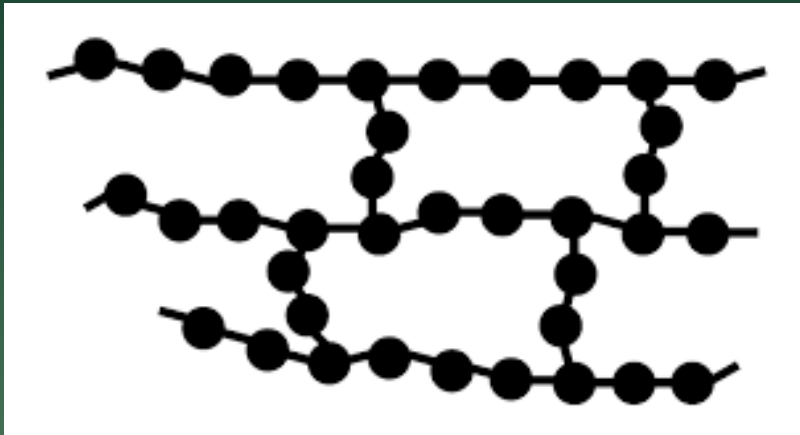
# Plastic

## *What is it?*



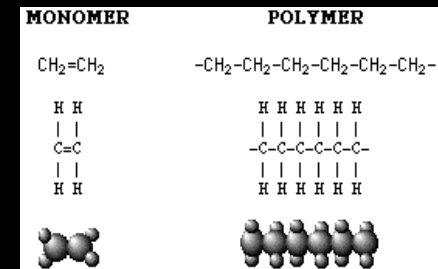
A synthetic or semi-synthetic material made of organic polymers. A polymer is a molecule of many monomers bonded together.

- Organic means containing carbon.
- Monomer means likes to bond with others like it.
- Polymer means a chain of monomers.
- Plastic becomes many chains together, some linked together and some not linked together.

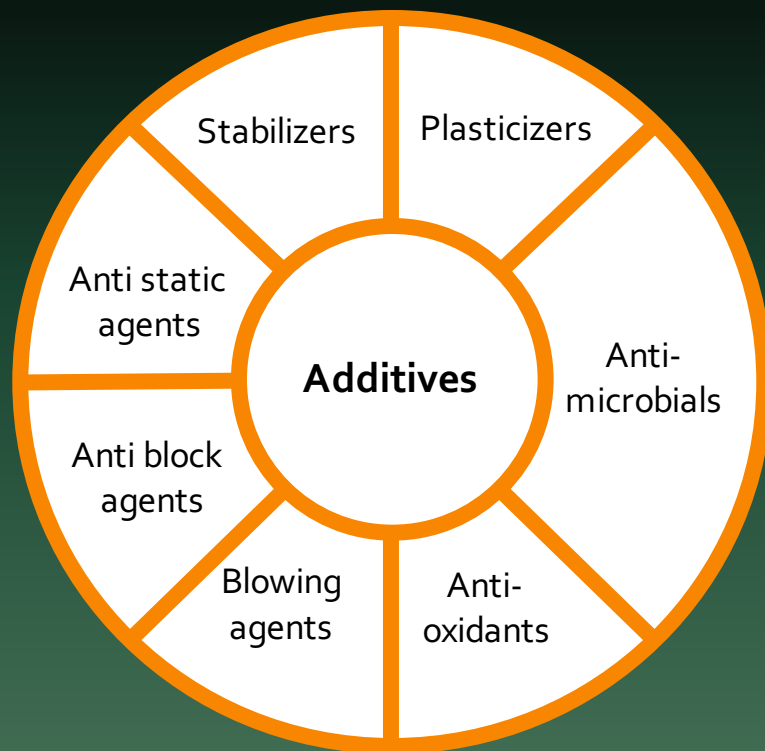


# Plastic

## *What is it?*



In Reality, there is more to plastic than just plastic....  
A Plastic Product = Plastic + Additives



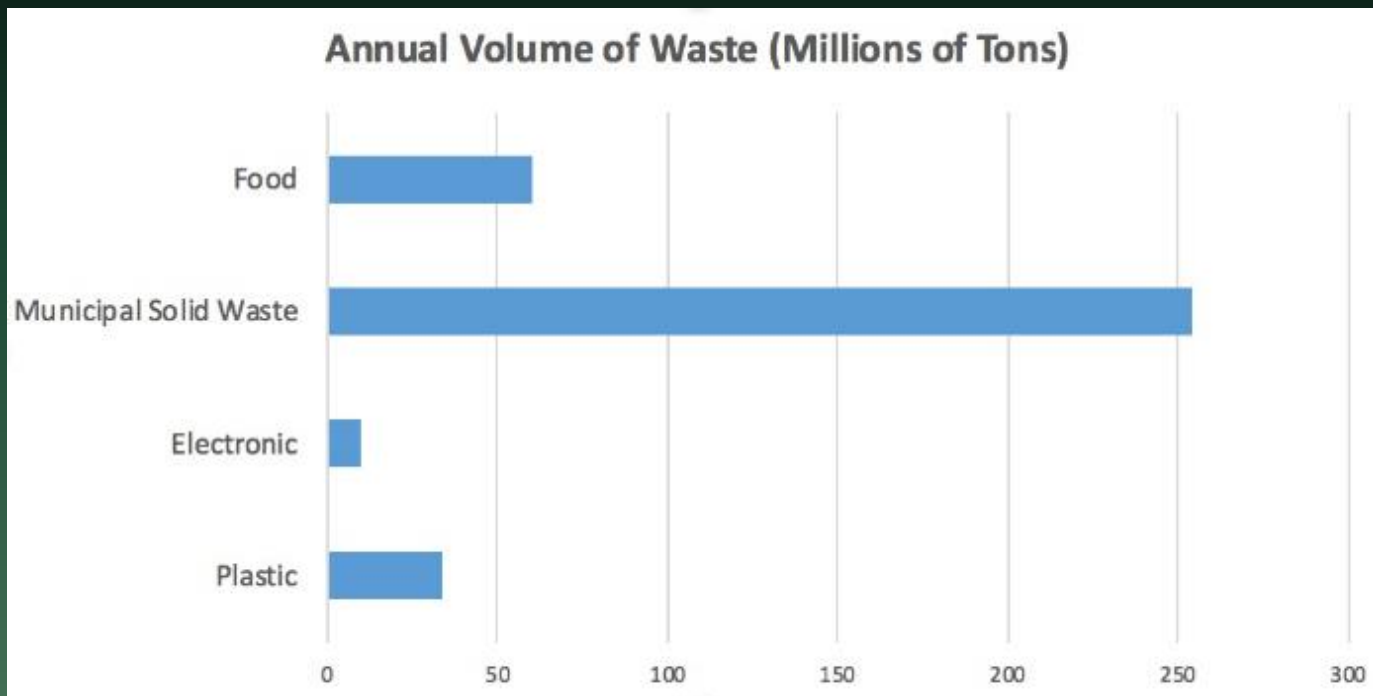
The wide variety of additives  
are one major reason why  
many plastics can't be  
recycled!

# Plastic

## *How much is there?*



Every year, in the United States:  
Over 250 million tons of waste (MSW) are generated. Plastics are a major part of the waste stream, at over 33 million tons in the U.S. and over 110 million tons worldwide.



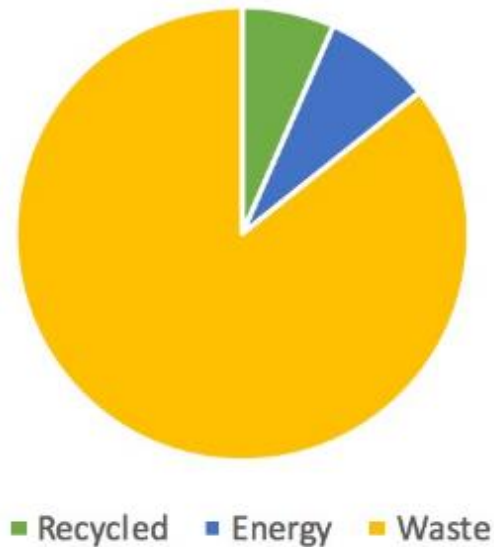
# Plastic

## *How much is there?*



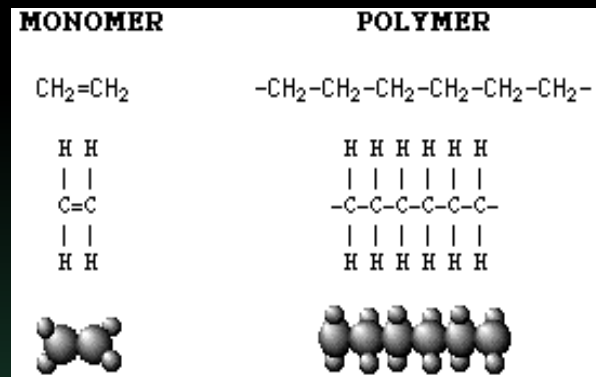
Every year, in the United States:  
About 6.5% of plastic is recycled and another 7.7% is burned to use as energy (in waste-to-energy facilities).

Plastic Waste in the United States

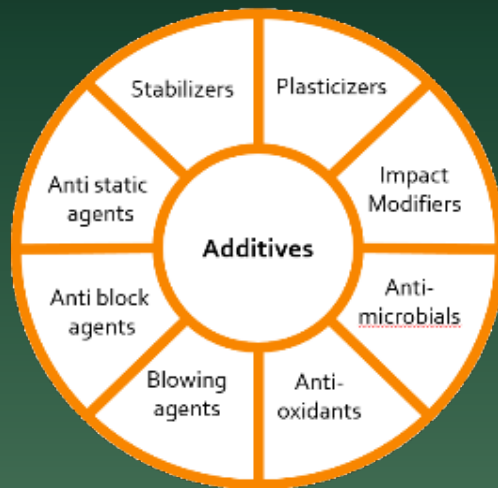


# Plastic

*How much Harm does it do?*



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Manufacture



Use



Disposal



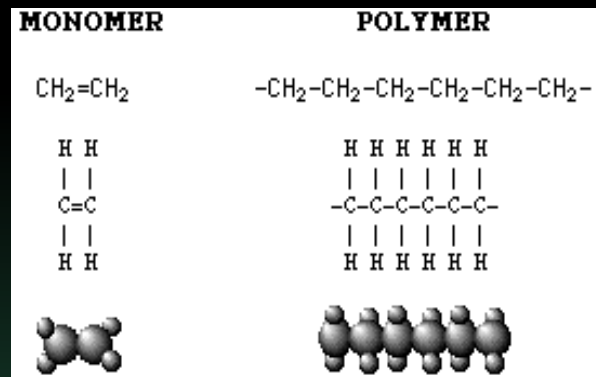
Degradation



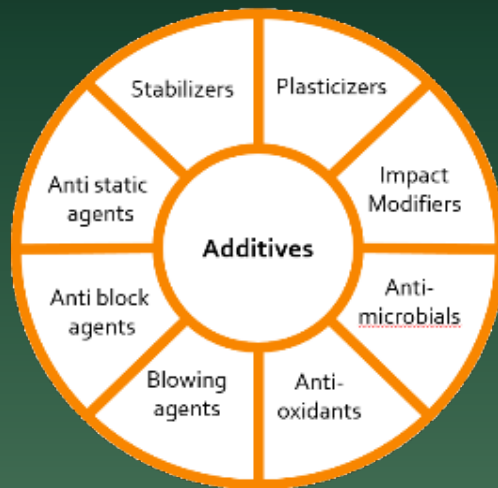
Migration

# Plastic

*How much Harm does it do?*



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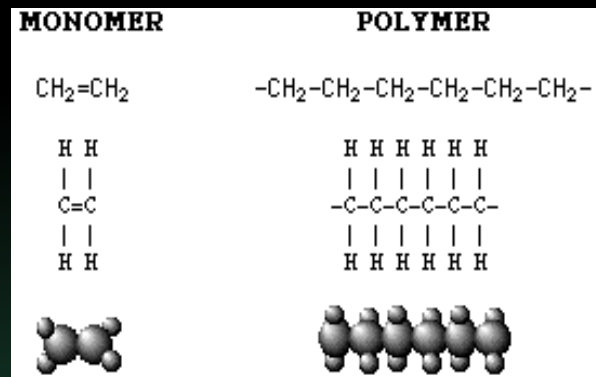
## Manufacture

*Did you know?*

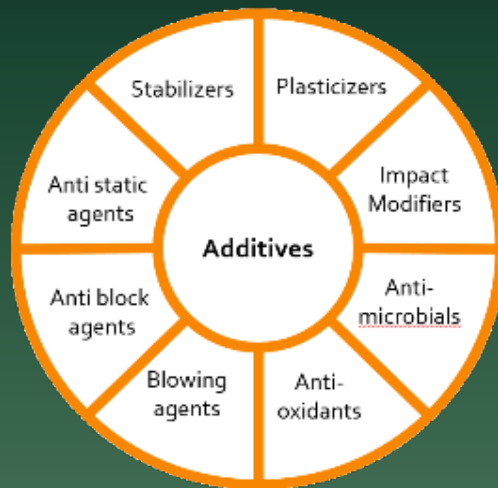
Plastics companies and manufacturers are responsible for 14% of the known toxic releases in the United States.

# Plastic

*How much Harm does it do?*



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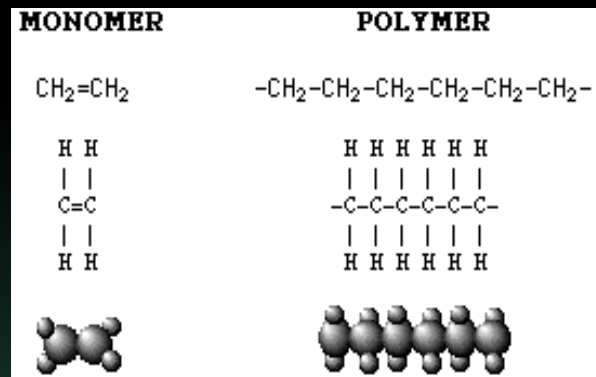
## Use

*Did you know?*

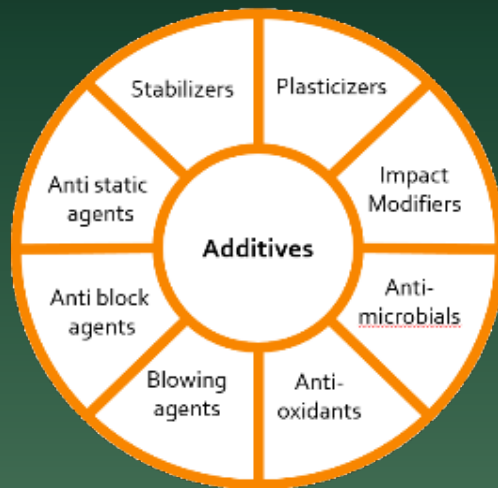
Bisphenol, Phthalates, Styrenes, and many other ingredients in plastics and plastic additives cause cancer, disrupt hormones, and cause other serious harm to human health.

# Plastic

## *How much Harm does it do?*



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*Did you know?*

Plastics disposed of:

- In landfills – can take a thousand years or more to decompose.
- By informal burning – release many toxic gases.
- By littering – pass into oceans and other ecosystems where they degrade and migrate all over the world, causing multiple harms to plants, animals, and ecosystems.

# Disposal

# Plastic

## *Who is Involved?*



Environmental  
Impact  
of  
Plastics and  
Plastics  
Technology



# Plastic

## *Who is Involved?*

Those who manufacture and profit from the sales of plastic (e.g. Dow, Exxon-Mobil, BASF, etc.)



Environmental  
Impact  
of  
Plastics and  
Plastics  
Technology

**Risk  
Perpetrators**  
Those who  
create the  
impact

# Plastic

## *Who is Involved?*

**Risk Gainers**  
Those who are  
favorably  
affected

Environmental  
Impact  
of  
Plastics and  
Plastics  
Technology

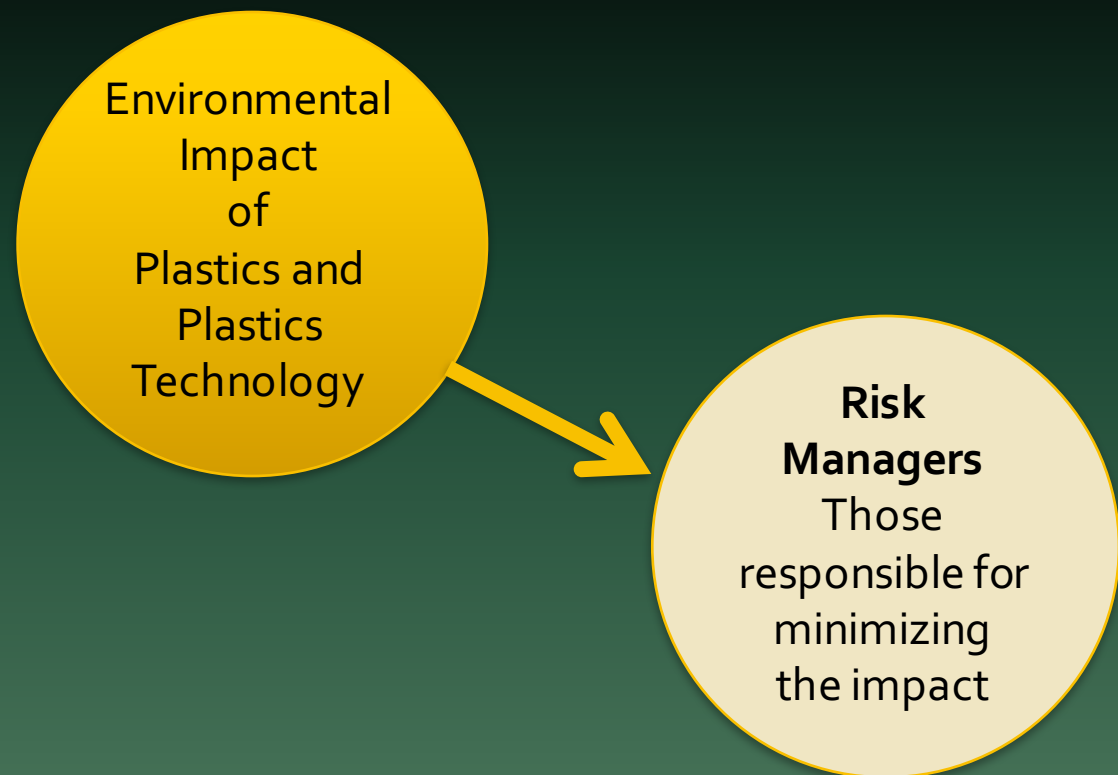


Consumers around the World

# Plastic

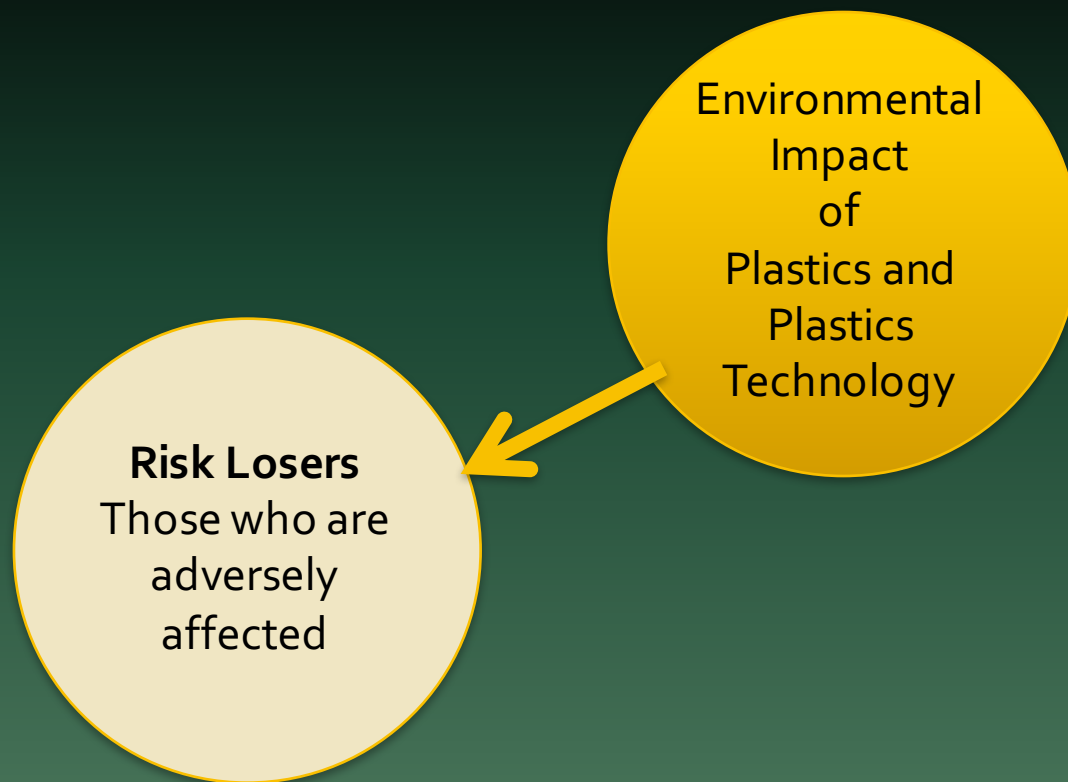
## *Who is Involved?*

International, National, State, and Local Agencies as well as Non-Government Organizations involved in mitigation environmental impact and protecting public health.



# Plastic

## *Who is Involved?*



The ecosystems, plants, animals, and biodiversity hurt by plastics disposal and the human beings hurt by the manufacture and use of plastics



# Plastic

## *A Summary*

Since mass production of plastics began in the mid-20<sup>th</sup> century, plastics have had a profound environmental impact, much of which is not yet fully understood, but impacts living creatures, including human beings, around the world.



Every Year:

- \$600 billion dollars of revenue are generated.
- 300 million tons are produced.
- 10% of plastic is recycled.
- 7 million tons fall into the ocean.

Every Year:

- Plants, animals, people are hurt.
- Air quality is damaged.
- Clean water is compromised.
- Stockpiles of waste plastic rise.