

# How Does Plastic Benefit Society

## The recycling journey

How your plastic bottle is reborn

### 1 Collection

Your empty plastic bottle is collected and taken to a recycling facility for sorting. If you have already separated the plastic bottles from the rest of your recycling they can be sent straight to a recycling plant.

### 2 Separating

The recycling is hand-checked to remove any non-recyclable material. It is then loaded into a 'trommel', a large perforated spinning drum. Plastic bottles and cans are separated through the perforations, and then steel and aluminium cans are removed using magnets and electromagnetic technology.

### 3 Sorting

The bottles are then cleaned and sorted by type and colour using infrared beams. The infrared light is reflected off of the plastics in different ways, allowing a sensor to detect which is which. Precision jets of air then separate the different types.

### 4 Shredding and melting

Next the bottles are shredded by a machine and the shreds washed again to remove any impurities, including remnants of paper labels or the bottle's original contents. They may also be decontaminated further using a chemical solution. The shreds of plastic are then dried and melted down.

### 5 Flaking

The melted plastic is reformed into flakes or pellets as it cools. These can then be melted down again and used to make new products. For example, the melted plastic can be reshaped into new plastic bottles, ready to be filled with a product.

**275,000 TONS**  
Amount of plastic used in the UK per year

**500+ YEARS**  
How long plastic can take to decompose

**40KG**  
How much plastic the average UK family throws out each year that could otherwise be recycled

**4%**  
The use of plastic in Western Europe grows by this much each year

**How does plastic benefit society?** The widespread use of plastic in modern life often garners criticism for its environmental impacts. However, it is essential to recognize the multifaceted benefits that plastic brings to society. From healthcare innovations to enhancing our daily lives, plastic materials have transformed various sectors. This article will explore the numerous advantages of plastic, its applications, and the ongoing efforts to mitigate its environmental challenges.

## 1. The Versatility of Plastic

Plastic is one of the most versatile materials available today. Its ability to be molded into various shapes and forms makes it an ideal choice for countless applications. Plastics can be engineered to meet specific requirements, such as flexibility, strength, and resistance to chemicals. This adaptability is reflected in a wide range of industries:

- **Construction:** Plastics are used in pipes, insulation, and windows, contributing to energy efficiency and durability.
- **Automotive:** Lightweight plastics help reduce vehicle weight, improving fuel efficiency and lowering emissions.
- **Consumer Goods:** From packaging to household items, plastics are integral to everyday products.

## **2. Advancements in Healthcare**

One of the most significant contributions of plastic to society is in the healthcare sector. The use of plastic has revolutionized medical technology and patient care in various ways:

### **2.1 Medical Devices and Equipment**

Many medical devices are made from plastic due to its lightweight, durable, and sterilizable properties. Examples include:

- Syringes and IV bags
- Prosthetics and implants
- Diagnostic tools like blood collection tubes

These devices not only enhance the quality of care but also help in reducing the risk of contamination and infection.

### **2.2 Packaging and Sterilization**

Plastic packaging plays a crucial role in maintaining the sterility of medical supplies. Utilizing plastic ensures that instruments remain uncontaminated until use, thus safeguarding patient health.

## **3. Food Safety and Preservation**

Plastics have transformed the food industry by improving food safety and extending shelf life. Key benefits include:

### **3.1 Packaging Innovation**

Innovative plastic packaging solutions have been developed to protect food items from spoilage and contamination. The use of plastics allows for:

- Barrier properties that prevent moisture and oxygen from entering.
- Lightweight and flexible designs that reduce transportation costs.
- Convenient resealable options that enhance consumer usability.

## **3.2 Preservation Techniques**

The ability to create vacuum-sealed and modified atmosphere packaging has significantly increased the shelf life of perishable goods. This helps reduce food waste and ensures that consumers have access to fresh products.

# **4. Environmental Considerations and Recycling**

While the benefits of plastic are numerous, it is crucial to address the environmental challenges associated with its use. Plastic pollution is a pressing issue; however, advancements in recycling and sustainability efforts are underway.

## **4.1 Recycling Initiatives**

Recycling programs have become more prevalent, with many communities and companies actively promoting plastic recycling. The benefits of recycling include:

1. Conservation of natural resources by reusing materials.
2. Reduction of landfill waste and environmental impact.
3. Lower energy consumption compared to producing new plastic from raw materials.

Innovative technologies are also being developed to improve recycling processes, allowing for better recovery of plastics.

## **4.2 Biodegradable Alternatives**

Research into biodegradable plastics is gaining momentum. These alternatives offer the same benefits as traditional plastics while decomposing more

quickly in the environment. This could significantly reduce plastic pollution and its harmful effects on ecosystems.

## **5. Economic Impact**

The plastic industry contributes significantly to the global economy. Its impact can be observed in various ways:

### **5.1 Job Creation**

The production, processing, and recycling of plastics create millions of jobs worldwide. The sector employs individuals in manufacturing, engineering, research and development, and waste management, supporting local economies.

### **5.2 Cost-Effectiveness**

Plastic materials are often more affordable than their alternatives. This cost-effectiveness benefits both consumers and businesses, enabling the production of a wider range of products at lower prices. The reduced packaging costs, for example, can lead to lower prices for consumers.

## **6. Enhancing Daily Life**

Plastics play a crucial role in enhancing the quality of life for individuals and communities. The applications of plastic in everyday products make life more convenient and efficient.

### **6.1 Home and Leisure**

From kitchen containers to outdoor furniture, plastic products are ubiquitous in our homes. Their lightweight nature and resilience make them ideal for various uses:

- Durable outdoor equipment and furniture that withstand the elements.
- Storage solutions that help organize living spaces.
- Insulation materials that contribute to energy savings.

## 6.2 Technology and Innovation

The electronics industry relies heavily on plastic for components and housings. The lightweight and durable nature of plastics ensures that devices are both portable and robust. Innovations in plastic technology have led to:

- Smartphones that are lighter and more durable.
- Advanced consumer electronics with enhanced functionality.
- Efficient energy storage systems, such as batteries with plastic casings.

## Conclusion

In summary, the question of **how does plastic benefit society** reveals a complex narrative. While the environmental impacts of plastic cannot be ignored, the advantages it provides in various sectors are undeniable. From enhancing healthcare and food safety to contributing to economic growth and improving our daily lives, plastics have become an integral part of modern society. By continuing to innovate in recycling and developing sustainable alternatives, we can harness the benefits of plastic while addressing its challenges, ultimately leading to a more sustainable future.

## Frequently Asked Questions

### What are the primary benefits of plastic in the medical field?

Plastic is essential in the medical field for creating sterile, single-use products such as syringes, IV bags, and surgical instruments, reducing the risk of infections and improving patient safety.

### How does plastic contribute to food safety and preservation?

Plastic packaging helps to extend the shelf life of food by protecting it from contaminants and reducing spoilage, which is crucial for food safety and reducing waste.

## **In what ways does plastic enhance transportation and logistics?**

Plastic is lightweight and durable, which helps reduce fuel consumption in transportation. Additionally, it is used in packaging that protects products, ensuring safe delivery to consumers.

## **How does plastic play a role in technological advancements?**

Plastics are used in various electronic devices due to their insulating properties and lightweight nature, contributing to the development of more efficient and portable technology.

## **What environmental benefits can plastic provide when recycled?**

Recycling plastic reduces the need for new raw materials, conserves energy, and decreases greenhouse gas emissions. It also helps divert waste from landfills and encourages a circular economy.

## **How does plastic improve safety in everyday products?**

Many consumer products use plastic for its impact resistance, flexibility, and lightweight characteristics, enhancing safety in items like car bumpers, helmets, and children's toys.

## **What role does plastic play in the construction industry?**

Plastic materials are used in construction for insulation, plumbing, and roofing, providing durability, weather resistance, and energy efficiency, which contribute to sustainable building practices.

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