

Plastics the material for the 21st century

Since the first plastic was invented a century or more ago, plastics have revolutionised the way we live. Whether we're communicating, travelling, playing, caring for each other's health or protecting the environment, there's no sphere of human activity that hasn't been significantly advanced by the use of this remarkable material. And today, scientists and technologists are continuously working at the forefront of knowledge, in fields as diverse as space exploration, nanotechnology and medicine, to find new ways plastics can benefit people. Their research means that many solutions, for most of us as yet unimaginable, will soon enter our everyday lives - all thanks to amazing plastics. No wonder plastics are set to be the material for the 21st century.

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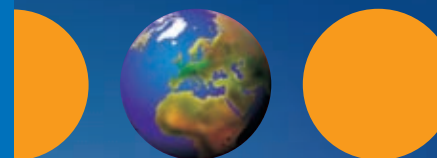
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Packaging



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 **Plastics**
The Material for the 21st Century



Plastics are amazing

Plastics play a vital part in our lives: at home, at work, in schools and hospitals. We play with them, we travel with them, we wear them. And sometimes, if parts of our body don't work, doctors can even replace them with new ones - made of plastic. Plastics keep us safe, they make life more comfortable and fun, and they're surprisingly good for the environment. They come in many different forms: harder than steel, softer than silk, any colour or shape... It's why designers and inventors love them. Plastics are amazing. We often take them for granted, but life wouldn't be the same without them.

Plastics are safety

Plastics enable us to live healthier, safer lives. Why? Because plastic packaging **safeguards foods and drugs** from external contamination and minimises the spread of microbes. For example, the flexibility of plastics enables important food preservation techniques, such as vacuum packing, controlled atmosphere packaging and shrinkable film to protect vegetables and fruit. Plastics also guarantee the hygiene and sterility of medical equipment and containers through plastic **gloves, plasma bags, blister packs** and much more.

Plastics are functional

The increasing use of plastic materials in packaging cannot be explained solely through their cost-effectiveness, **hygienic properties** or even marketing. The primary reason for their success is that plastics are, from a technical point of view, amongst the most useful materials there are. Plastics are **light, durable and flexible**, and can take a variety of shapes. They are also strong and non-perishable, which makes transporting them easy and safe. Could you imagine an ambulance full of breakable bottles speeding to hospital? Or humanitarian aid sent to the most dangerous, remote areas in perishable, heavy packaging?



Plastics are sustainability

Sustainability means conserving natural resources and energy and protecting the environment while allowing economic and social progress. And plastics contribute significantly to sustainability because plastic packaging extends the shelf-life of goods and products - facilitating sustainable consumption. Up to 50% of food resources are wasted in developing countries because plastics are not widely used for food preservation, packaging and protection. In most developed countries, where more plastic packaging is used, this figure drops to as little as 3%.

In general, the average **weight of packaging** has decreased by approximately **28%** in the last 10 years. Moreover, lightweight plastics add only 3.5% in packaging weight, while other materials can add ten times that amount in packaging weight. This means that **plastics can offer strong fuel-efficiency gains**, for example when transporting products such as mineral water. Indeed, if a country such as Germany banned the use of plastic packaging, the weight of packaging would increase by a factor of 4, while costs and waste volumes would increase 90% and 60%. According to recent studies, these factors combined would result in energy consumption rising +50% and CO₂ emissions +100% considering the full life cycle.

