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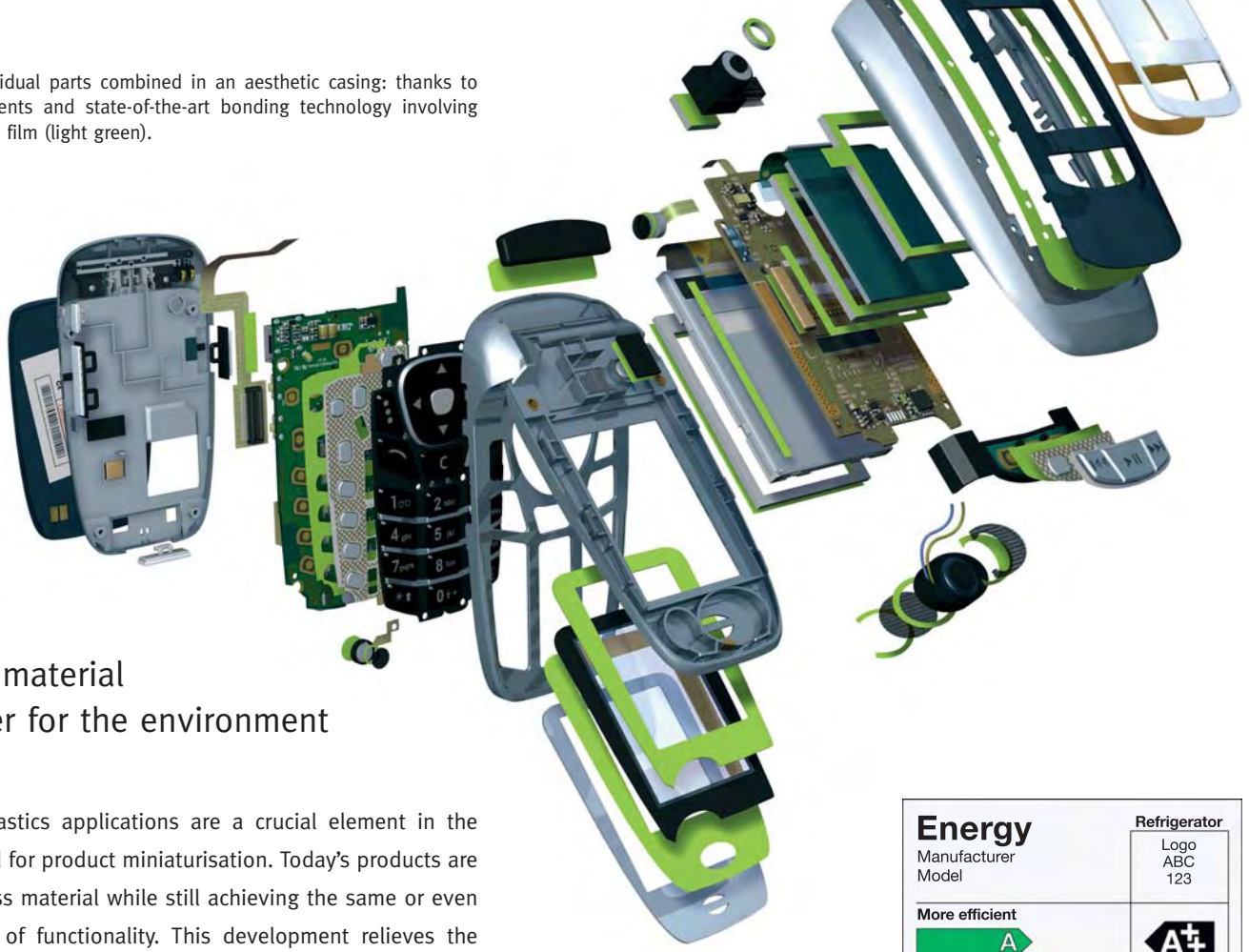
10/2007 Design: Lüling Marketing Communication

PlasticsEurope
Association of Plastics Manufacturers

At Home – making people's lives easier. And Nature's, too.

Plastics
The Material for the 21st Century

Numerous individual parts combined in an aesthetic casing: thanks to plastic components and state-of-the-art bonding technology involving adhesive plastic film (light green).

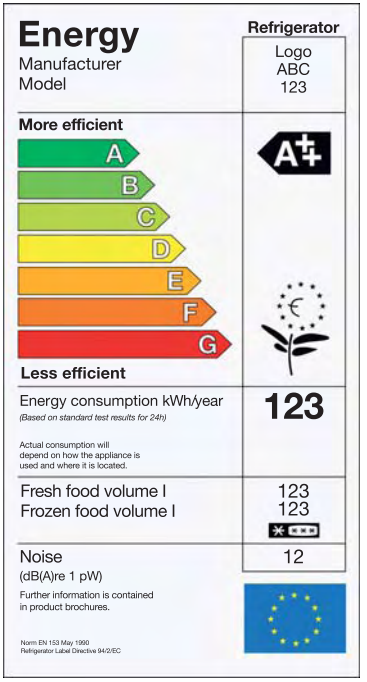


Source: Tesa

The less material the better for the environment

Innovative plastics applications are a crucial element in the ongoing trend for product miniaturisation. Today's products are made with less material while still achieving the same or even higher levels of functionality. This development relieves the burden on the environment and often even provides a better performance.

Flexible printed boards are currently revolutionising the electronics industry. With a thickness of less than one millimetre they comprise several layers of flexible plastic carrier film with printed circuits. Their production protects resources, they are extremely lightweight, do not take up much room and can be adapted freely to suit any required design. Their thermal, electric and chemical properties are superior to those of separate functional layers used in applications such as mobile phones. The individual plastic parts are frequently reinforced or bonded by plastic adhesive tape.



Tailor-made plastics for insulating, conducting, sound-proofing …

Plastics have excellent insulating properties, they also conduct electricity and are ideal for making rooms and houses sound-proof. Thanks to plastics, both mechanical and electrical functions can be combined in confined spaces. Tailored to suit a multitude of applications, they are a perfect partner both at home and at work.

More than seventy different types of plastic are used for optimising many modern applications such as electric household appliances. Polymer materials are used for manufacturing refrigerators, kettles and washing machines as well as televisions, mobile phones, MP3 players, fever thermometers and blood-pressure meters.

… and they help reduce, for instance,

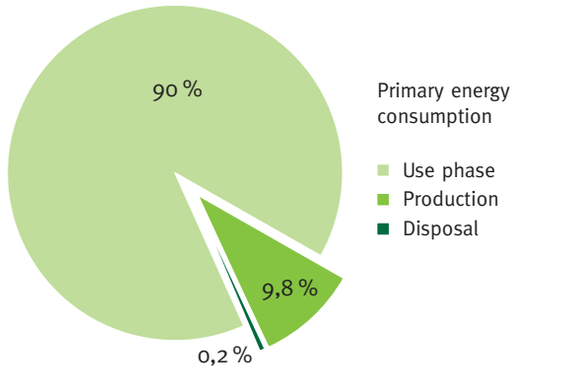
- the water consumption of every wash by 50 % compared to the water consumption of washing machines built in earlier years (1985 – 1990). Modern tubs enclosing the drum are made from plastic and fit accurately, thus minimising the occurrence of so called dead spots, where unused water can gather.

- the electricity consumption of refrigerators with high-grade plastic insulating foam and state-of-the-art technology of efficiency class A++ (devices built after 2005) by more than 60 % compared with average-efficiency refrigerators built in 1993.

Less energy used for the operation of devices

Thanks to polymer materials, the energy consumption of products can be significantly reduced not only during their production but also when they are in operation. That is a real benefit considering that 90 % of all energy needed during the lifecycle of electric devices such as dishwashers is consumed during the use phase, while its production uses 9.8 % and its disposal consumes only 0.2 %.

The less power a television or a refrigerator consumes, the less water a dishwasher or a washing machine uses, the less substantial the burden on the environment.



The use phase is the dominant aspect in the overall consumption of resources of electric products.

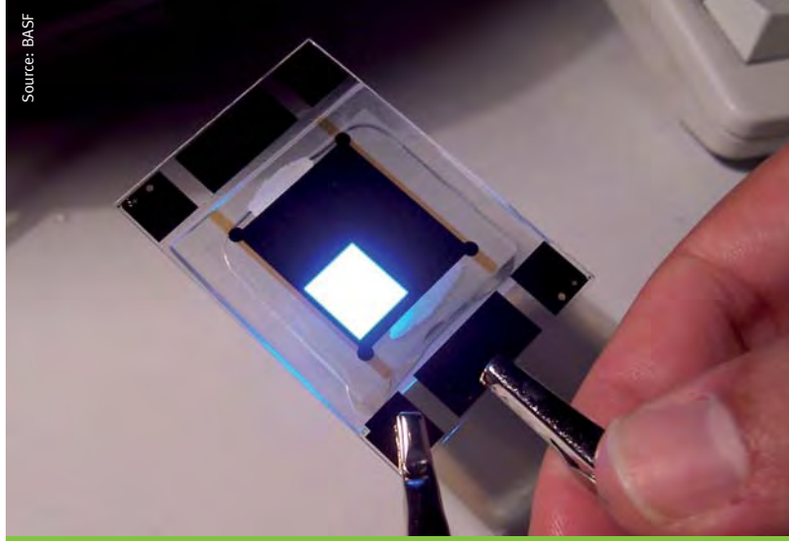

Source: BASF

Photo of an OLED in a research laboratory

Plastics for a better future

Used for construction, in flexible boards, LCD displays, OLEDs or in fuel cells: all over the world, polymer materials make an important contribution to the protection of global resources.

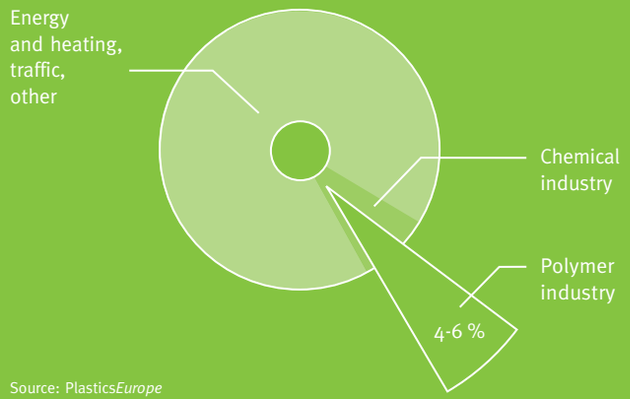
OLEDs,

short for Organic Light Emitting Diodes, are semi-conducting polymers which light up in different colours after the application of electric voltage. This technology makes the burden that electricity generation places on the environment lighter as many small OLEDs can be used for television screens, PC monitors, car radio, navigation system or mobile phone displays.

Plastics save energy.
Plastics protect the climate!

- Plastics production consumes only a small amount of raw material. As they use up only between 4 % and 6 % of the total amount of crude oil and natural gas consumed, plastics have a relatively low demand.
- Plastic products have a long service life, high wear resistance and the energy consumed for their development is fairly low.
- The production of plastics is straightforward and cost-efficient.
- Plastics are lightweight: compared with many other materials such as glass, metal or ceramics, they save a significant amount of weight.
- Plastics are stored energy. The energy used for heating, for example, is irretrievably lost: the energy stored in the plastic product can be re-used for generating heat power in combined heat and power stations as well as for many other industrial processes.
- In many applications, plastics contribute to saving energy.

Crude oil and natural gas consumption in Western Europe



Source: Plastics*Europe*

Use little energy for the production of plastics.
Save a lot of energy by using them!

Today's household appliances often must be multi-functional and are expected to meet a number of product specifications all at once. The user expects a high performance rate, easy operation and compatibility – all that together with a low energy consumption. Our heightened concerns about our resources and climate should not exclude our domestic environment or our workplace, as these are the very areas with a high saving potential.

High-performance materials such as plastics that combine mechanical and electric functions in confined spaces and allow the production of tailored shapes for an accurate fit are major contributors to the protection of resources thanks to

- allowing the miniaturisation of individual components. The smaller the product, the less material and energy it consumes during the production process,

- providing the semi-conducting material needed for OLEDs. Monitors that do not require background lighting save a lot of electricity.

As plastics help reduce the power consumed during a product's use phase, they make an important contribution to protecting our climate. Only about 4 % to 6 % of Europe's total consumption of crude oil and natural gas is used for the production of plastics. These plastics, however, help us save energy and significantly reduce the amount used for every day applications.

Use a little energy for the production of plastics.
Save a lot of energy by using them.

Plastics – think differently about energy

Saving energy, protecting resources, securing the future

The leaflet *At Home – making people's lives easier. And Nature's, too.* is part of a series of information brochures and leaflets on energy published by Plastics*Europe*.

Also available:

Brochure
Plastics – think differently about energy
Leaflet
Construction and Housing– perfect climate protection for houses and apartments
Renewable Energy – the power of the elements
Packaging – the best protection with less and less material
Renewable Energy – the power of the elements