EPS packaging for consumer goods: Tried and tested, safe, sustainable

When choosing the right packaging, not only the price but the primary packaging properties, the energy balance and possibilities for reuse are important deciding factors.

For decades leading brand manufacturers have put their trust in transport packaging made from expanded polystyrene (EPS). The reasons are clear: EPS has got outstanding product properties and is sustainable during its entire life.

An exact analysis of the life cycle shows the energy balance of a product over the entire course of its life (“cradle to grave”).

The balance of EPS packaging shows that most energy is consumed during production of the raw material and the processing into packaging.

However, the manufacture of expanded polystyrene uses less energy than the production of alternative packaging material. Moreover, studies show that, depending on the application, EPS packaging compares well to other competing products, especially in the areas of air and water emissions, water consumption and resulting residual waste.

Minimal material effort, maximum performance

Already at the beginning of its life it becomes clear: EPS is extremely resource efficient, since it contains 98% air and just 2% of actual polystyrene. During a chemical process, the polystyrene beads are enlarged fortyfold with steam and pressed in a mould.

Due to the high air content within EPS, the packaging is extremely insulating, shock-resistant and very light – and so fulfills all requirements for the packaging of sensitive goods.

Protects the product, saves money

EPS is an exceptionally versatile packaging material. It can be moulded into any shape or size – as intricately delicate or as large and solid – as you require.

Cookers, fridges and dishwashing machines, TVs, computers and other fragile, high value items are cost efficiently protected by clearly-designed, minimal EPS packaging. The result is improved warehouse handling, reduced returns and customer satisfaction when a product arrives at their home in perfect conditions. Varying the density of the bead in the EPS mould gives you a range of different strengths and performances, depending on the fragility of the goods and the levels of stress the package is expected to undergo.

EPS is unaffected by damp, moisture and heat and its soft surface protects against damage and dirt. If further strengthening or resistance is required, EPS can be given abrasion resistant, waterproof coatings.

Being 98 per cent air, EPS is extremely lightweight. The low transport weight of EPS saves petrol and reduces vehicle CO_2 emissions. Transport damage avoided again saves valuable resources, since the disposal of the damaged product, and its replacement, would require a much higher amount of energy. And, last but not least, it saves money.

Made for Recycling

Many consumers don't know that EPS packaging is ideally suited for recycling.

High quality products are manufactured from packaging. 200,000 tons of EPS packaging were collected and recycled in 2009 in Europe. Since many countries avoid landfill sites, the EPS packaging is often reused as insulation material. As insulation material for houses and flats, it lowers heating costs and reduces CO_2 emissions.

Thanks to material recycling, used EPS packaging can also be transformed back into the original material, which can then be processed into new packaging or different consumer goods. This thereby eliminates one of the most energy intensive steps within the life of a packaging: the production of the raw material.

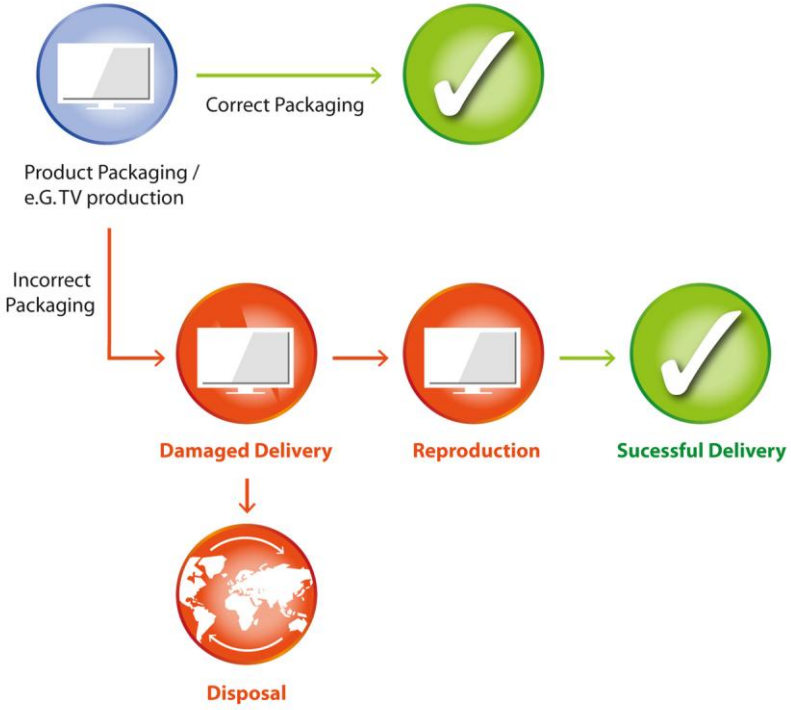
Alternatively, EPS can also produce heat when thermally recycled. One kilogram of EPS replaces around 1.4 liters of heating oil. Again, this saves resources.

These efficient recycling options of have a positive effect on the entire energy balance.

The ideal properties of EPS packaging, the favorable energy balance during the complete life cycle and excellent recyclability convince leading brand producers. For decades, they have trusted in this tried and tested, safe and sustainable packaging concept.

The Value of Packaging – Avoiding Transport Damage

Poor packaging performance resulting in damage to the products will lead to the discard of the product. As a matter of principle, much more energy is saved through the avoidance of transport damage than the energy used for the entire life of a packaging. This is equally true for food packaging as well as consumer goods packaging.



Using Effective Packaging saves Money and Resources

Damages due to inefficiencies of the packaging material are shared across the supply chain. These losses spoil likewise resources and money:

The energy expenditure for providing one TV set is approx. 70 times higher than for the production of an effective packaging system containing EPS parts, LPDE film and cardboard.

The difference is even more pronounced by looking at the EPS parts only: The production of the EPS parts, which fulfill the most important cushioning part, only uses 1/200th of the energy used for the production of a TV set.

Last but not least, the replacement of a damaged product causes significant production costs. Thus, EPS packaging with its perfect packaging properties saves money and resources.

EPS - the facts at a glance: EPS …

… is healthy and safe throughout its life cycle

- Made out of 98% air, and just 2 % out of actual polystyrene. Thanks to its high air content, EPS resists safely protects packaged goods from damage during transport.
- Remains stable even with weight loading and environmental influences, such as impacts, temperature variances or humidity.
- Has been declared safe for food contact by the health authorities

… is flexible and efficient

- Manufacturing processes allow the individual manufacture of transport packaging. Design, development and production are cost efficient.
- Adaptability of EPS packaging guarantees a maximum protection of packaged goods. Whether used as food packaging or transport protection for consumer goods – the extremely light packaging material offers ideal isolation properties and shock resistance.

… is easy to recycle

- EPS packaging can be recycled for a multitude of applications: Recycled EPS is used for example in the production of new packaging materials, or other articles such as cases for CDs or coat hangers. The bulk is used for the processing into isolation material and is used in the areas of construction or renovations making buildings more energy efficient.
- During thermal recycling, EPS is transformed into thermal heat. Here, one kilogram of EPS replaces around 1.4 liters of heating oil.
- In 2009, over 200,000 tons of collected EPS was re-used in Europe. Improving this share is one of the major goals for EUMEPS in the coming years.

… is modern and innovative

- Innovations made in the manufacturing process of EPS packaging have continuously reduced energy consumption over the past years.
- According to the application, less energy is used during EPS production than during the production of alternative materials. Moreover, EPS does well compare to alternative packaging materials in the area of water and air emissions.
- Many of the EPS converters in Europe are ISO certified.

About EUMEPS Packaging

In 1998, the European Manufacturers of Expanded Polystyrene (EUMEPS) have merged into a European association. EUMEPS Packaging represents the European EPS packaging industry and promotes EPS as protective packaging material with economic and environmental strengths. Find more information on EUMEPS Packaging and on EPS packaging material on the organization's website.