EPSbranchen

98% clean air

100% recyclable

100% pure packaging

February 2020

EPS packaging

– a sustainable choice

Our ambition:

100%

of all EPS is **recycled**

EPS – expanded polystyrene – is a lightweight and environmentally friendly material consisting of 98% air and 2% polystyrene (plastic). In Denmark, it is known under the brand name Flamingo.

When goods are packaged in packaging, it basically serves one or more of the following purposes:

1. The packaging can protect the packaged item.
2. The packaging can group several goods together for easier transport.
3. The packaging can ensure that important information about the product is easily accessible.
4. The packaging can be used to increase sales.

The main reason for using EPS packaging is that you want to protect the product. Either because of the shock-absorbing properties, like when using a bicycle helmet to protect the head (which, incidentally, is also made of EPS). Or because the transported item needs the insulating properties of EPS, which is particularly relevant in, for example, fish or food boxes.

Naturally, EPS packaging can also be designed so that it can be used to keep multiple units of the product together – and by putting a label on the packaging, EPS can communicate important information. By contrast, the purpose of EPS as packaging is to a very limited extent to strengthen sales.

Thus, the choice of EPS as packaging is measured based on functionality and sustainability. Two parameters on which the material stands strong. Whether EPS is functionally the best solution depends on the specific needs. However, comparing all relevant parameters is always key. If the product to be protected releases condensation or is moist, one should take into account that an alternative packaging of e.g. cardboard must be given a protective plastic surface.

EPS packaging, foodstuffs and sustainability:

• In general, when it comes to "environmental impact in relation to food production, about 80 percent comes from food production, about 15 percent from transport and distribution, while only about 5 percent comes directly from the packaging. Food waste is thus a far greater climate sinner than packaging."(1)

• The UN estimates that approx. 33% of all food ends up as food waste. The carbon footprint of this food waste corresponds to approx. 50% of the total climate footprint of the US.(2) A report from the UK authorities has shown that up to 50% of all food is wasted before reaching stores in developing countries. In England, the figure is 3%. The reason may be attributed to adequate and proper use of packaging.(3)

• Studies have shown that EPS boxes are best at keeping fish cool. Other studies have shown that EPS packaging is the most effective material for storing and transporting fruits and vegetables.(4)

EPS packaging and sustainability:

• Studies have shown that a switch from plastic to the best available alternative will double the energy consumption for packaging production and there will be a tripling of CO_2 emissions.(5)

• EPS is 100% recyclable. Members of EPS-branchen have been working on recycling the material since 1995. Depending on the design and purpose, up to 20% of EPS in new products is recycled scraps and off-cuts from production or collected and recycled EPS, which is granulated. Thus, there is virtually no waste from the production of EPS.

• If EPS raw materials are used based on recycled EPS, the carbon footprint from raw material production of polystyrene pellets can be reduced by more than 70%. (6) If recycled EPS is compared to the best available alternatives, the alternative to EPS will emit over 8 times as much CO_2.(7)

• EPS consists of 98% air and only 2% of raw material and therefore weighs considerably less than alternative packaging. Thus, a shift to alternative materials will entail higher transport costs and greater climate impacts. For example, fish boxes weighing 3.5 times EPS boxes require more than 3 times as much fuel and emit more than 3 times as much CO_2. This corresponds to more than 3% of the total freight.(8)

Correct packaging reduces the world's total resource consumption because packaging prevents the product from breaking and then having a need to replace it. A number of life cycle analyses (LCAs) have shown that EPS has a better environmental and climate profile than alternative packaging solutions.(9)

EPS offers extra good protection because it is 98% air. This makes the material a bit like an airbag, effectively absorbing shock impacts. At the same time, the air acts as insulation for items that need to be kept warm or cold.

Also, when properly collected, EPS is a clean waste fraction that is easily recyclable. Alternative packaging, which consists of several types of materials, must first be separated before they can be recycled.
EPS packaging, if requested by the customer, can meet all the criteria for sustainable packaging, as outlined by the American organisation Sustainable Packaging Coalition.(10)

This is also one of the reasons why EPS packaging is a sustainable choice.

Kilder: *(1) https://www.teknologisk.dk/ydelser/skal-vi-pakke-vores-foedevarer-ind-i-bananblade/41161 (2) http://www.fao.org/3/a-bb144e.pdf (3) https://www.bbc.com/news/business-47161379 (4) For more, see https://eps-airpop.dk/fiskekasser-af-eps/ (5) https://www.hw.ac.uk/news/articles/2018/a-plastic-ban-could-increase-damage-to.htm (6) https://www2.mst.dk/Udgiv/publikationer/2019/08/978-87-7038-094-2.pdf (7) Own estimates based on https://www.hw.ac.uk/news/articles/2018/a-plastic-ban-could-increase-damage-to.htm and https://www2.mst.dk/Udgiv/publikationer/2019/08/978-87-7038-094-2.pdf (8) Calculated through http://gronberegner.teknologisk.dk/ (9) Find examples here https://eps-airpop.dk/publikationer/ (10) https://sustainablepackaging.org/wp-content/uploads/2017/09/Definition-of-Sustainable-Packaging.pdf*

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About EPS - intelligent use of air

EPS is an abbreviation of the term Expanded Polystyrene. In Denmark, it is popularly known as "Flamingo".

EPS is both a thermoplastic and a cellular plastic that consists of 98% air. The rest is polystyrene, which encapsulates the air in a cellular structure. This allows the properties of the air to be utilised intelligently.

The cellular structure and high air content make EPS a lightweight material with exceptional insulation and shock absorbing properties. It has a high compressive strength, repels humidity and is easy to handle.

EPS plays an important role in our daily lives; as a protective packaging for fragile articles and food during transport; as insulating material in buildings; and in protective equipment such as bicycle helmets.

After use, EPS is 100% recyclable. It reduces CO2 emissions in production of raw materials by 1.8 kg per every new kg of EPS raw material. In addition, incineration, which emits over 3.3 kg of CO2 per kg of EPS is avoided.

EPS is a valuable resource with unique properties. When EPS is used properly, it provides a significant contribution to addressing current and future challenges of society.

According to the Ministry of Environment and Food of Denmark, **there are no "environmentally better alternatives" available** for all the uses of EPS.

See more at www.eps-airpop.dk

100% recyclable

Low weight

Durable

Resists mould and vapour

High insulationvalue

Shock absorbant

Versatile. Can be moulded in almost any shape

Cost effective

No additives

About EPS-branchen - the Danish EPS Association. EPS-branchen is part of the Danish Plastics Federation. The organisation represents the EPS manufacturing companies and the rest of the value chain, including recycling companies, machine manufacturers, educational institutions, consultancies, construction companies, manufacturers of EPS concrete and local tradesmen.

The organisation's 15 factories are spread throughout Denmark and have approx. 500 employees and over 100 local tradesmen, e.g. blacksmiths, electricians and toolmakers. Other companies in the organisation have over 500 employees. The Danish production of EPS supports over 1,000 jobs in e-commerce, e.g. food boxes. It is used as packaging for a large number of export companies and as insulation in construction. In addition, EPS boxes are among the preferred solutions when exporting Danish fish globally. Thus, the industry supports an export exceeding DKK 26 billion and approx. 16,000 jobs.

Overall, Danish production of EPS supports over 30,000 jobs with a turnover of well over DKK 50 billion.

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EPSbranchen
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