



EPP

the *colourful* **black**



EPP



product

Is EPP only an unimpressive black foam bead? No, because if you take a closer look, you discover in EPP a high-performance material that has unimagined possibilities.

When you get to know EPP a little bit better, you quickly notice that it is a real problem-solver for demanding challenges in material properties, shaping and launching ideas.

But what is EPP really?

EPP is a polypropylene-based expanding particulate foam. These EPP foam beads contain neither greenhouse gases nor chemical propellants. They only contain air, which makes EPP environmentally friendly and especially easy to recycle. It is true that a lot of EPP products are black, although this versatile material also comes in a whole series of colours. So, get enthusiastic about EPP's colourful versatility and you will be surprised at all the things you can do with this material.

The EPP bead can do just about anything:

- it has outstanding chemical resistance
- it absorbs little water
- it can be used at different temperatures
- it has a high level of energy absorption even at low thicknesses
- it has high resilience following static and dynamic loading
- it can take multiple loads since it is virtually unbreakable
- it has a very good thermal insulation capacity
- it offers extensive freedom in preform design
- it is suited for food contact
- it is free of heavy metals or other toxic substances
- it can be easily recycled

the white *skills*



product

Polypropylene (PP for short) is a thermoplastic material that forms the basis for EPP. The first step is to produce a microgranulate of PP that is then foamed (expanded) into foam beads in a closed system.

The EPP beads created in this process can be manufactured at whatever densities you want. They are processed into a wide range of products with what is known as the form foaming process.

This starts off by using air to fill each of the EPP beads into an aluminium mould. After filling, steam is fed to the mould that greatly heats up the EPP beads and the air in them and that causes the beads to expand. Adding steam once again makes the surface of the beads so hot that they melt with one another. The mould opens up after a cooling off phase and the finished preform is ejected.

EPP



Products can be manufactured in a very wide range of densities – from 20 kg/m³ to 300 kg/m³ because of the variable initial density of EPP. In packaging where people generally select low densities EPP reliably protects even the most sensitive and highest-quality products from damage even after repeated loading. Medium densities are frequently used for applications where energy absorption is called for.

Great densities are used where there are high demands on stability and strength. Component parts, housings and transport containers can therefore easily be created in EPP.

More and more designers and engineers have noticed the benefits of EPP over other materials and use it for the most demanding applications – and there are new applications every day.

the black *pearl*



EPP



safety

Who protects the motorcyclist when he takes his first spring trip? EPP crash barrier linings in curves – and just in case the EPP intermediate layers in the motorcycle helmet.

Who guarantees optimum protection for pedestrians in road traffic? The EPP impact dampener in the motor vehicle bumper.

And who protects drivers in the passenger compartment? Passive safety elements in the doors, foot compartments and dashboards.

The high level of energy absorption at low weight is just as typical for components made of EPP as its excellent resilience after static and dynamic loading. Even after multiple impact loads, the energy absorption of safety components made of EPP is unchanged.

Safety components made of EPP can be precisely adapted to any kind of requirement. The density can be adjusted to the needed damping. You have a great deal of design flexibility in processing which means that component parts can be designed with optimum safety and protective properties in computer simulations.

You can use EPP to improve the safety of passengers when developing state-of-the-art cars while driving down the vehicle weight.

Recent years have seen a whole series of new applications and that is just the beginning. The triumphal march of safety components made of EPP will continue at great speed in future.

the black *safety*





EPP



lightness

EPP conveys a feeling of lightness. This foamed plastic is a flyweight because 96% of its volume is air. At the same time, this material offers the stability needed no matter what kind of ideas you might like have.

Its cellular structure has another benefit: it can absorb energy that affects the object as a force from outside.

You can work with EPP light-hearted because this material can be easily joined, glued and combined with other materials. Its own slight weight is a plus for handling along the entire supply chain.

Whether in trucks or aircraft, each and every kilogram less spells out profit in transport – for the environment because that drives down fuel consumption – and for competitiveness because it drives down costs.

EPP stays a friendly carefree companion because it does not absorb any moisture and is easy to clean.

EPP is also the right material for the trend to greater freedom of expression in the world of commodities.

It can be flexibly processed into products that only use minimum resources and adapt themselves to the consumer's individuality.

the blue *lightness*

When we are talking about lightness, EPP can easily compete with other raw materials.



EPP



energy efficiency

The fossil energy resources of our planet are finite. If we do not use them efficiently, they will not only go dry at an early stage. They will place a greater burden on our environment with greenhouse gases. This is the reason why our society has to put it high on its agenda to use them sparingly.

Since EPP is a foam, it is lightweight which makes cars lighter. That means that they consume less fuel and release less CO₂.

After all, one litre of EPP only weighs a couple of dozen grams depending upon its type. It is even important for electrically driven cars to save that weight to guarantee sufficient ranges between charging batteries. That means that EPP supports the development of new drive designs poised for the future.

EPP component parts in heaters have excellent insulation effects that make sure that the heat energy stays in the heater and is not lost by uncontrolled radiation.

the grey *efficiency*



Warm water stays hot longer in water heaters and solar systems by using EPP housings. Even cold products can be kept cold longer with transport boxes or refrigerator components made of EPP.

If you are looking for more efficiency for your products, you're looking for EPP.



EPP



Quelle: www.bubastic.de

Eco-friendly

Sustainability means applying environmental issues on the same level as social and economic issues. That is a definition tailor-made for EPP. With its superior insulation properties, EPP component parts noticeably reduce power consumption and therefore CO₂ emission.

Since moulded parts made of EPP can be 100% recycled, there are established collection and recycling systems. That means that waste and old parts can be re-introduced to the raw material cycle via raw material recycling.

What is especially good for the environment is the fact that it takes a very long time for EPP

moulded parts to reach the end of their life cycle. EPP's outstanding mechanical properties mean these parts can be used over and over again for many years even under hard climatic conditions.

EPP products are also popular among consumers. They are light as a feather, feel good and are easy to handle for everybody. With all of its benefits, it is not surprising that EPP is commercially successful among users considering the fact that EPP is constantly being used in new applications ranging from the automobile through heating and air conditioning applications right down to furniture and athletic floor coverings.

the green *sustainability*



EPP



versatility

EPP is a material with virtually unlimited possibilities. It is lightweight, robust and extremely user-friendly. This is the reason why there is a wide range of applications for EPP from simple impact protection right down to complex housings for medical equipment. In-between there is the entire range of applications in industry, athletics or leisure-time – where low weight, energy absorption, thermal insulation and design variability are desired.

When you get to know EPP's qualities better you will realize that it offers a huge space for design ideas and concepts for innovative product solutions.

EPP keeps things in order, protects them, keeps impact away, insulates against heat and cold, reduces noises and vibration, is assembly- and service-friendly and it even looks good while doing it. You can get EPP in a lot of great colours from radiant orange right down to a saturated green.

Creative people can realize dreams with EPP – dreams of sustainable and economic product solutions that combine a lot of important functions in one pioneering idea on track for the future.

the colourful *versatility*





EPP
the *colourful* black



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