



You will find more information about materials as well as possible applications and processing options for our foams on our website.



Responsibility for our future – in processing too

As a family business, we feel a special responsibility to protect our environment. Commercial business is subject to particular constraints, but they must never be used to justify the destruction of our natural resources. Foam materials are petroleum-based, and their production requires many chemical processes and components. We are aware of this and are working to make them more sustainable. In our processing operations, we are already making a significant contribution to the protection of our environment.



Our photovoltaic system, commissioned in May 2019.

- Power supply using 100 % green electricity, certified with the Grüner Strom label
- 1,800 m² photovoltaic system, calculated to cover 100 % of our annual energy requirements
- Gas heating systems using highly efficient gas condensing technology
- Comprehensive hall insulation
- Energy-efficient LED lighting in all halls
- Production processes that minimise waste
- Extensive collection and recycling of residues

We are always looking for opportunities to further reduce the environmental impact of our activities. Pahlke Schaumstoffe is one of the approximately 5,000 companies that have now signed the statement drawn up by Entrepreneurs for Future. This business initiative is composed of dedicated company leaders from a wide range of sectors who are committed to protecting the climate.



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Sustainable foam materials – the alternative

Producing individual solutions made of foams for over 65 years. And now: development and marketing of sustainable foam materials.



- Foam materials based on renewable raw materials
- Chemical recycling of production residues
- Mass-balanced foam materials

We're developing the future together with you. Contact us!



FOAM MATERIALS
PRODUCED &
PROCESSED
SUSTAINABLY





Processes for producing sustainable foam materials

Contact us: +49 2645 9523-0

Conventional polyurethane (PUR) foam materials are primarily produced from petroleum-based raw materials. Alternative processes reduce the proportion of fossil components, cutting greenhouse gases promotes climate protection, and various recycling processes pave the way for a resource-efficient circular economy. It is for these reasons that we work together with our suppliers and project partners to develop processes and approaches that have the potential to deliver a steadily increasing sustainable proportion.

Process 1: RENEWABLE RAW MATERIALS

In the production of polyols, one of the main components of PUR foam materials, crude oil (petroleum) is partially replaced by vegetable oils. In principle, various vegetable oils can be used – e.g. rapeseed, soya, palm, or castor oil. Castor oil has the advantage that it is obtained from the seeds of the tropical castor oil plant, which, unlike other oil plants, is not used as food or animal feed. By using castor oil in polyols, a sustainable proportion of up to 26 % can be achieved in the foam material.

- Partial replacement of crude oil with castor oil
- Sustainable proportion: up to 26 %

Process 2: CHEMICAL RECYCLING

The production of semi-finished and finished products made of PUR foam results in material residues. These residues are recycled by turning them into new polyols through the chemical process of solvolysis. These recycled polyols are incorporated into the production of foam materials. Their addition makes it possible to achieve a sustainable proportion of up to 14 % in the foam.

- Proportionate use of recycled polyols
- Circular economy through recycling of material residues
- Sustainable proportion: up to 14 %



Process 3: MASS BALANCING

In the production of mass-balanced foam materials, the two main petroleum-based components of PUR foam material—polyols and isocyanates—are made using chemical components derived wholly or partially from non-fossil raw materials. Raw materials can include both industrial and agricultural waste, such as used tyres and used cooking oil. By means of chemical recycling, these waste materials are broken down into their basic chemical components, from which new polyols and isocyanates can be produced. In this way, the sustainable proportion can be gradually increased – while maintaining the same product quality and properties and without having to adjust production processes during the foaming process. The term “mass balancing” simply refers to the method used to calculate the sustainable proportion of the end product.

- The quality of mass-balanced foam materials does not differ from that of conventional foam materials
- Crude oil is partially replaced with mass-balanced biowaste (circular waste) materials
- Recycled industrial and agricultural waste that would generally be disposed of or incinerated, is utilized
- Production does not compete with the food or animal feed industries for resources

MARKETS AND APPLICATIONS

Foam materials with a sustainable component can replace conventional products in many different markets. Talk to us about your areas of use and application. We will be happy to advise you on the properties and possibilities that sustainable foam materials can offer you now and in the future.

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