

# PUR Gel Foam

## Technical Specialist Group PUR Flexible Foam

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### Introductory remarks

Within the foam families, there is a wide range of variants of PUR flexible foams, which can be optimally used for certain functions and applications with regard to their respective properties. PUR gel foam has developed as a further quality term for high-quality comfort applications.

The following description is intended to define the term gel foam more precisely by distinguishing it from standard PUR flexible foam in terms of both the raw materials used and the properties that characterise it.

The information in the product description PUR flexible foam as well as the material data sheet of the Technical Specialist Group PUR Flexible Foam also apply in full to different forms and manufacturing methods of PUR gel foam.

### The term gel foam

The term gel foam is derived from the name of the various raw materials used in manufacturing, which are referred to as gels due to their physicochemical structure, among other things. These raw materials are incorporated into the polyurethane matrix and contribute significantly to the foam characteristics. The term gel foam thus includes a connection of the final foam character resulting from the raw materials used.

Gel components can also be used separately for mattresses. However, the foams used in these mattresses are not called gel foams.

### Chemical characterisation

The raw materials for PUR based on mineral oil are reacted with the use of certain additives. This produces the gas carbon dioxide, which causes the mixture to foam. The individual formulation and its components determine the properties of the finished foam – each quality has its own composition.

Since gel foam is a subgroup of PUR foams, PUR gel foam, like any other PUR flexible foam, is made from diisocyanate and polyalcohols in an exothermic polyaddition reaction using catalysts, stabilizers and auxiliaries.

For the production of gel foam, special materials and raw materials are also used, which can be described as gels or gel particles due to their characteristic properties. The gels used are particularly compatible with the polyurethane system and do not release any harmful emissions or pollutants due to their composition.

## Characteristic properties

The use of the different gel variants can to some extent influence the mechanical physical properties (e.g. gel touch, pressure relief, and thermal conductivity).

## Fields of application

Due to its good properties, PUR gel foam is particularly suitable for the production of mattress cores and toppers.

This DOCUMENT was developed in the Specialist Association Foamed Plastics and Polyurethanes by the Technical Specialist Group PUR Flexible Foam.



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