NEVEON
The Future of Foam

Milestone in the recycling of end-of-life mattresses as NEVEON converts repolyol from old mattresses to make new, high-quality mattresses

- **NEVEON has succeeded in producing high-quality foam blocks with a recycled polyol content of 80 percent and turning them into fully fledged mattresses.**
- **The raw material in this process is repolyol, which is obtained entirely from old mattresses thanks to a special recycling procedure developed by BASF.**
- **NEVEON has bonded repolyol foam with REDcert^2-certified foam in an adhesive-free process and will be showcasing probably the world's most sustainable PU mattress at this year's interzum.**

Vienna, May 2, 2023. With the shift away from single-use products toward recycling and the conservation of resources, the future is all about the circular economy – and foam specialist NEVEON, which is part of the Greiner Group, has taken this to heart. This is why NEVEON teamed up with BASF back in 2021 with the aim of closing the loop in the lifecycles of mattresses. By chemically recycling old mattresses, BASF is doing its bit to replace fossil-based polyol with high-quality, recycled polyol – or "repolyol," as it's known. NEVEON returns mattresses to the resource cycle by using recycled polyols to produce high-quality mattress foam and, further downstream, mattresses that are indistinguishable from those made of virgin polyol in terms of quality.

Technological breakthrough: 80 percent repolyol foam – 100 percent comfort

This shared journey toward the circular economy involved a major technological breakthrough. Thanks to a special recycling procedure developed by BASF, it is now possible, for the first time ever on an industrial scale, to produce repolyol obtained exclusively from old mattresses. NEVEON turned this repolyol into high-quality foam blocks with a recycled polyol content of 80 percent and then used them to manufacture a high quantity of fully fledged mattresses. The industrial-scale manufacture of foam requires not only lots of know-how and precision but also high-quality raw materials. "The challenge in manufacturing foam blocks with such a high proportion of repolyol obtained from old mattresses lies in optimizing the formulation and production processes such that all the quality characteristics such as high air permeability and the perfect foam cell structure are identical to those found in mattresses made of virgin polyol," says Roland Krämer, Vice-President Group R&D Innovation Excellence at NEVEON. This is the first time that this has been achieved with the use of such a high proportion of polyols obtained entirely from old mattresses.

Use of REDcert²-certified mass-balanced raw materials

In addition to polyols, isocyanates are also needed for manufacturing PU foam. Since these are not yet available in recycled form, and repolyols are still some way off being widely commercially available, NEVEON has converted two of its plants to accommodate the use of sustainable, mass-balanced raw materials. This means that NEVEON now fulfills the requirements of the REDcert² certificate and can use certified isocyanates and polyols for BASF's biomass-balanced (BMB) product line, in which fossil-fuel-based raw materials have been completely replaced by sustainably certified raw materials. As a result, NEVEON can already offer high volumes of foam with a reduced carbon footprint.

NEVEON to showcase probably the world's most sustainable PU foam mattress

To ensure that mattresses are as comfortable as possible to lie on, they consist of different types of foam that are normally bonded together. The problem, however, is that this makes mattresses more difficult to recycle. But NEVEON has a solution to this, too, bonding its repolyol foam with one of its REDcert²-certified foams using an adhesive-free zipper design to create the world's most sustainable PU foam mattress. Dispensing with adhesive means that the bonded foam blocks used in the mattress are not only free of foreign material but also easy to take apart, both features that help to make the recycling process at the end of the product lifecycle as easy and efficient as possible. "Manufacturing first-class mattress foam from repolyol at our site in Kremsmünster in Austria and using REDcert²-certified mass-balanced raw materials represent a huge success for us and an important step toward closing the loop in the lifecycles of mattresses. But our joy at achieving these milestones doesn't mean that we're going to rest on our laurels. On the contrary, we're far from the end of our journey and will continue to focus all our energies on ensuring that the mattresses of the future can be manufactured on an industrial scale entirely within a closed lifecycle," says NEVEON CEO Jürgen Kleinrath.

Visit NEVEON at interzum 2023, stand D030–E031, hall 11.1

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About NEVEON

NEVEON is a leading, global, integrated foam company offering outstanding flexible and composite polyurethane foams for a huge range of applications, from the comfort segment through the transportation sector to a limitless variety of specialty applications. NEVEON is part of Greiner and with its products pursues the goal of contributing to the enhancement of the quality of life worldwide. With 55 locations in 17 countries, the foam specialist guarantees customer proximity, the shortest delivery times and top quality. In the 2021 business year, NEVEON generated sales revenues of EUR 735 million and employed over 3,400 people. www.neveon.com

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Pictures

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NEVEON Vice President Group R&D Innovation Excellence
Credit: NEVEON Holding GmbH

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NEVEON CEO
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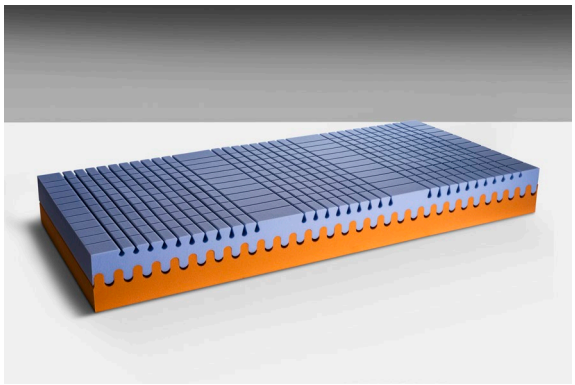
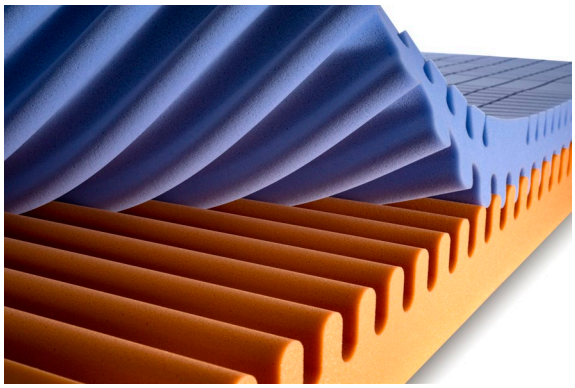


NEVEON combines repolyol foam and REDcert² certified foam adhesive-free to create probably the world's most sustainable PU mattress concept.

Credit: NEVEON Holding GmbH



NEVEON combines repolyol foam and REDcert² certified foam adhesive-free to create probably the world's most sustainable PU mattress concept.

Credit: NEVEON Holding GmbH

NEVEON produces foam blocks with 80 percent recycled content in the polyol component in Kremsmünster / Austria.

Credit: NEVEON Holding GmbH

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