

### **Sustainable, high performing systems and additives for the polyurethane industry**

- **LANXESS at the UTECH Europe 2024 in Maastricht, MECC, booth F22**
- **More sustainable polyurethane systems enable reduced CO<sub>2</sub> footprint**
- **Broad product range for demanding applications**
- **PU prepolymers for adhesives, sealants and OCF applications**
- **Flame retardants for foams**
- **Plasticizers for flexible PU applications**
- **Technical presentations on new modifiers and flame retardants**

**Cologne, March 28, 2024** – Specialty chemicals company LANXESS is presenting its extensive product portfolio for the polyurethane industry at UTECH Europe 2024. This includes novel, more sustainable and high performing polyurethane solutions and polyurethane additives such as flame retardants, modifiers, crosslinkers, plasticizers, catalysts and hydrolysis stabilizers. The trade fair will take place from April 23 to 25 in Maastricht, Netherlands, at the MECC congress and event center.

#### **Adiprene Green: focus on sustainability**

With the Adiprene Green product line, LANXESS offers polyether-based polyurethane systems that contain renewable raw materials and can replace fossil-based products. Within its sustainability targets to become climate-neutral by 2040, the company has introduced new Adiprene Green products for polyurethane cast elastomer and adhesive applications.

In the area of cast elastomers, the Adiprene Green MDI and pPDI polyether prepolymers work as drop-in substitutes for conventional Adiprene products. Processed identically as other hot cast polyurethane elastomers, Adiprene Green's reactivity profile, demolding times and final properties are similar to fossil based

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polyether prepolymers. When cured with 1,4-butanediol, Adiprene Green MDI polyether prepolymers offer an excellent performance profile and a broad range of hardness from 80 Shore A to 60 Shore D. For outstanding performance conditions, Adiprene Green pPDI based systems are the ideal solution.

In addition, LANXESS is expanding its Adiprene Green brand to include adhesives, sealant and OCF (one component foam) applications. The new Adiprene Green prepolymers are suitable for hot melt applications. Their low free monomeric MDI (< 0.1 wt.%) content allows for safe working conditions and compliance with EU regulations, while decreasing CO<sub>2</sub> footprint and maintaining high performance.

### **Hot cast/cold cure systems enable energy savings**

A further solution for sustainable PU production is offered by LANXESS' hot cast/cold cure systems, which are available in both polyether and polyester versions.

Energy costs associated with typical cast PU processing operations are a significant expense within the overall cost of manufacturing polyurethane components. The new hot cast/cold cure system developed by LANXESS Urethane Systems is a recent initiative that enables PU processors to save energy and costs. This is possible due to the elimination of heat curing and post-curing steps needed in traditional polyurethane processing, thus contributing to production optimization and a lower carbon footprint.

Furthermore, the three component systems (ether and ester versions) have been chemically designed to give the PU processor full flexibility in the manufacture of a wide range of elastomers, delivering:

- a full hardness range from 60A to 55D (an external catalyst injection can be utilized if required),
- a practical pot life for each hardness, thus allowing adequate time to fill the mold,

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- and an efficient demolding time to achieve good productivity.

### **Combining high performance and accessible cost**

A high performing MDI-based polyurethane elastomer system was developed to address the technical requirements of demanding dynamic applications such as wheels and rollers. The target of this system is to offer a suitable and cost effective alternative to other more costly polyurethane systems, based on more expensive isocyanate grades. The MDI-based prepolymer counts upon two different curative options to reach elastomers with 75A and 94A hardness.

### **New prepolymer grades for adhesives, sealants and OCF applications**

Moreover, LANXESS Urethane Systems have developed prepolymer grades with high NCO level and low viscosity for adhesives, sealants and OCF applications. These grades include low free MDI prepolymers with below 0.1 wt.% free monomer.

### **Flame retardants for foams**

LANXESS offers a wide range of products for the polyurethane industry, including flame retardants such as the phosphorus-based brands Levagard and Disflamoll as well as the reactive, bromine-containing product PHT4 diol.

The Levagard brand products are particularly suitable for use in rigid and flexible polyurethane foams. New, innovative solutions for rigid foams can replace previous application configurations.

Phosphates from the Disflamoll product range can be used in many polyurethane applications. In the CASE (Coatings, Adhesives, Sealants, Elastomers) segment, they offer an excellent combination of flame retardancy and plasticizing properties.

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### **Resistant to hydrolysis**

PUR elastomers and thermoplastic polyurethanes (TPU) are established as high-quality materials in the footwear industry. The stabilizers in the Stabaxol range protect effectively against hydrolysis and extend the service life of the end products under moist or wet conditions. This opens up decisive competitive advantages and also enables new applications in higher quality segments. Good hydrolysis resistance is particularly important for everyday footwear and safety shoes, as well as ski and snowboard boots.

Due to their vibration-damping properties, polyester-based cellular PUR elastomers are used as additional spring-damper elements in almost all classes of motor vehicles. Stabaxol is used to prevent premature failure of these components due to ageing, which increases the service life of the entire suspension element.

### **Technically better and yet more cost-effective**

The high-end modifiers in the Modulast range offer outstanding technical advantages in both thermoplastic polyurethanes (TPU) and CASE applications. But it is not only the physical properties of these materials that can be optimized. Their production is also more cost-effective, as the proportion of polyols and isocyanates in the formulations can be significantly reduced. This substantially reduces the overall raw material costs.

Modulast PUR is a high-purity dibenzoate with a low hydroxyl content and therefore meets the market requirements of the PU industry. The modifier ensures exceptional coloration of the end product, low odor and improved elasticity properties. Modulast PUR can be used as a partial substitute for polyols in formulations.

The high-performance modifier Modulast ACE is characterized by its consistently low hydroxyl content. It is used in high-performance applications where low odor, extremely low exudation and low compression set are required.

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### **Plasticizers for flexible polyurethane applications**

LANXESS has a wide range of plasticizers that can be used in plastics, but also in polyurethane applications. As a phthalate-free plasticizer, Mesamoll is particularly suitable for flexible polyurethane sealants and adhesives that are expected to have a long service life, especially when in contact with concrete and moisture. Thanks to its high resistance to saponification, Mesamoll makes it possible to produce 1K and 2K polyurethane-based sealants and adhesives with a long service life.

### **Technical presentations by LANXESS experts**

During the event, two application development experts from LANXESS will provide detailed information on new additives for the polyurethane sector. Dr. Gizem Cinar will present “New dibenzoate-based modifiers for polyurethane systems” (April 23, 2:15 pm, Auditorium 2) and Dr. Heiko Tebbe will explain the use of “Reactive phosphorus based flame retardants for rigid polyurethane foams” (April 24, 11:00 am, Auditorium 2).

More information on the products from the LANXESS' Urethane Systems and Polymer Additives business units is available at <https://lanxess.com/en/Company/Corporate-Structure/Business-Units/Urethane-Systems> and <https://lanxess.com/en/Company/Corporate-Structure/Business-Units/Polymer-Additives>.

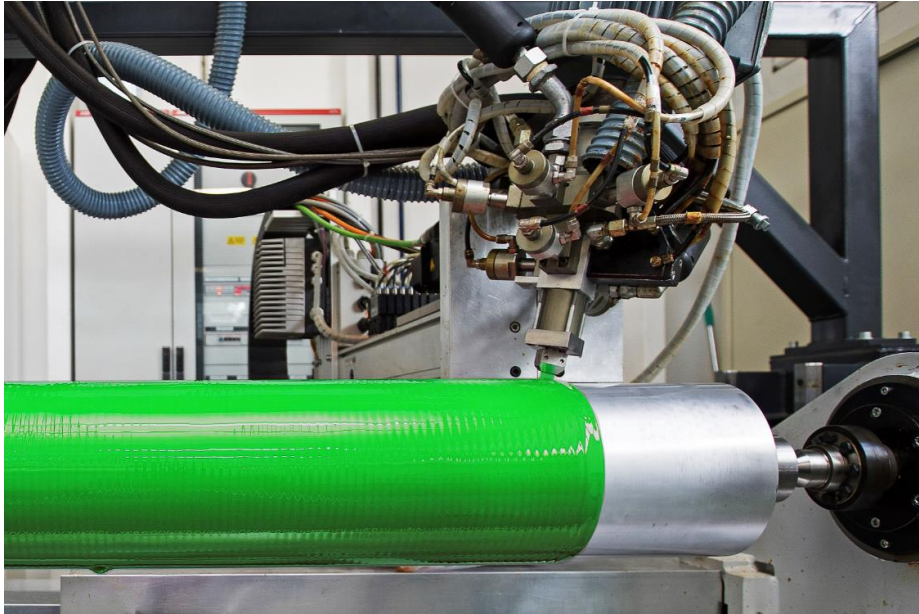
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### Image



Focus on sustainability: With the Adiprene Green product line, LANXESS offers polyether-based polyurethane systems that contain renewable raw materials and can replace fossil-based products.  
Photo: LANXESS

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LANXESS is a leading specialty chemicals company with sales of EUR 6.7 billion in 2023. The company currently has about 12,800 employees in 32 countries. The core business of LANXESS is the development, manufacturing and marketing of chemical intermediates, additives and consumer protection products. LANXESS is listed in the leading sustainability indices of the Dow Jones Sustainability Index (DJSI World and Europe).

### Forward-Looking Statements

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You can find further information concerning LANXESS chemistry at <http://lanxess.com/en/Media/Stories>.

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