

LANXESS at the European Coatings Show,
March 19 to 21, 2019, Nuremberg, Hall 7, Stand 7-145

Customized prepolymers for demanding applications

Cologne – Urethane prepolymers with low free isocyanate content from the Adiprene LF and Trixene product lines will play an important role when LANXESS is showcasing its extensive product range for coatings, adhesives and sealants at the European Coatings Show (ECS), to be held from March 19 to 21, 2019 in Nuremberg, Germany.

“Our 'Low Free' products – LF for short – based on aliphatic isocyanates in particular combine an outstanding property profile with the highest ecological and occupational hygiene standards. We offer them tailor-made for a wide range of demanding outdoor applications, such as highly UV-, weather- and temperature-shift-resistant coatings. Rotor blade coatings for wind turbines could soon follow,” explains Michael Timm, Head of Marketing & Development of the Urethane Systems (URE) business unit of specialty chemicals company LANXESS.

For decades, polyurethane systems have been synonymous with top quality and durability not only for coatings, but also for adhesives and sealants. In this tradition, LANXESS has continuously developed novel and improved solutions for a wide range of applications and will continue to do so.

Low Free – a symbiosis of ecology and performance

Thanks to the proven LF technology, various polyols and diisocyanates can be used to produce prepolymers with very low free diisocyanate monomer content. This is achieved via a vacuum distillation process which follows an initial polyaddition, where the residual monomeric diisocyanate is removed from the final

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prepolymer. The result is prepolymers which meet the increasingly stringent regulatory requirements with regard to environmental compatibility and workplace hygiene. With a content of generally less than 0.1 percent by weight of free diisocyanate, they form an attractive building block for formulations offering reduced hazard classifications, also in view of the restrictions that will be imposed by future European isocyanate directives. In this way, costly and time-consuming measures that will apply in future to the handling of systems with a higher content of free diisocyanate could be avoided.

In addition, narrow molecular weight distribution and precisely adjustable prepolymer viscosity are, for example, important keys to optimized properties and improved processability. A better defined segregation of crystalline hard and amorphous soft segments in the coating compared to conventional prepolymers ensures exceptionally high film quality and durability.

Prepolymers from the Adiprene LFH range, based on the aliphatic diisocyanate HDI (hexamethylene diisocyanate) are particularly suitable for long-lasting, high-quality outdoor applications due to the excellent color retention and high clarity of the coating. In addition, LANXESS offers IPDI (isophorone diisocyanate) based Trixene prepolymers used in industrial coating applications that require high resistance to weathering and chemicals.

Quality and competence for new applications

Adiprene LF prepolymers based on aliphatic isocyanates are preferred in applications subjected to continuous exposure to environmental influences with high expectations in terms of durability and longevity; for example, outdoor waterproofing and anticorrosion coatings on metal and concrete for bridges, roofs and balconies.

“We are convinced that our urethane systems and our know-how which has grown over decades can also provide important new impetus in the field of wind turbines. This applies in particular to the

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coating of rotor blades, which are exposed to a variety of stresses, such as UV radiation and erosion. In particular, the offshore sector is challenging because conducting the maintenance of the blades is highly complicated in this environment,” explains Julie Chapelet, Global Strategic Marketing Manager at URE.

The high relative speed at which raindrops or solid particles can hit such rotor blades places extreme demands on the durability of the coatings, which is why polyurethane systems are usually chosen. Relative speeds of 300 km/h are not uncommon for rotor blades whose length can already exceed 100 m today. Especially the leading edge of the rotor blade in the area of the bond between the two half shells requires special protection to prevent serious damage or even material failure. Regular inspection and, if necessary, repair or recoating is therefore essential.

The advantages of improved work hygiene due to the minimized isocyanate content are particularly evident during this overhaul of wind turbines or during repair work on the rotor blades. Complex protective measures could thus be dispensed with, which would lead to greater productivity without compromising on health protection.

“Of course, LANXESS is continuously working on increasing the service life of coatings subjected to extreme conditions to offer new solutions for this industry,” concludes Chapelet.

Further information on LANXESS’s Urethane Systems can be found at <http://ure.lanxess.com>.

LANXESS is a leading specialty chemicals company with sales of EUR 7.2 billion in 2018. The company currently has about 15,400 employees in 33 countries and is represented at 60 production sites worldwide. The core business of LANXESS is the development, manufacturing and marketing of chemical intermediates, additives, specialty chemicals and plastics. LANXESS is listed in the leading sustainability indices Dow Jones Sustainability Index (DJSI World and Europe) and FTSE4Good.

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News Release

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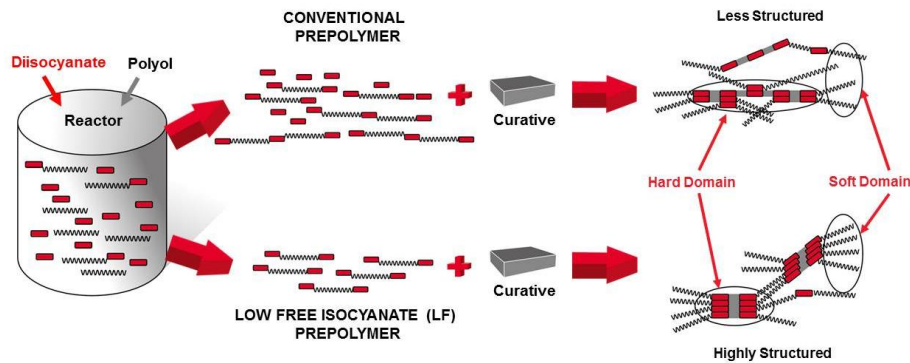
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The low content of monomeric diisocyanates in prepolymers of the product family Adiprene LF reduces health and environmental risks during handling and leads to superior properties of the resulting polyurethanes. Photo: LANXESS AG



Wind turbine rotor blades require particularly good and durable protection. Coatings based on Adiprene LF prepolymers from LANXESS that also meet the highest ecological and occupational hygiene requirements could be ideal for this purpose.

Photo: LANXESS AG