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Interviews: K. Junginger, FSK, C. Hauck, Bäumer

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REACH – Restriction of diisocyanates

A practice-oriented implementation by the FSK in cooperation with the industry

Interview with Klaus Junginger, Managing Director of the Specialist Association Foamed Plastics and Polyurethanes e. V. (FSK)

In August 2020, the EU decided to restrict diisocyanates. Accordingly, in the future, all diisocyanate users must be trained in the safe handling of the chemical. In this interview, FSK Managing Director Klaus Junginger explains this new regulation's impact on the industry.

PU Magazine:

What can we expect as a result of the restriction on diisocyanates, and what is your opinion on the new EU restriction?

Klaus Junginger:

We very much welcome the practical restriction of diisocyanates which has now been passed (**fig. 1**). The authorities have designed a new solution that tackles the problem exactly where it exists. The diisocyanate industry, the so-called upstreamers or manufacturers, the processors, the formulators, respectively system houses, and also the machine manufacturers were all involved in the procedure from the very beginning. In collaboration with the authorities the objective was to find practicable and economical handling for all companies, including small and medium-sized enterprises (SMEs). In general, consumer products no longer contain diisocyanates at all. They react with other chemical components, such as polyols, to form the plastic polyurethane in the production process. Thus, banning diisocyanates would only have deprived the market of a large number of valuable, harmless everyday products. Because of the training required under the restriction, diisocyanates remain available for production purposes, and employees receive targeted training on how to handle the chemicals at their workplace.

PU Magazine:

What are the implications and geographical scope of EU regulation?



Source: FSK

„We are convinced that the training courses will significantly improve occupational safety and health and that in the future, they will also serve as a model and influence other countries“, says Klaus Junginger, Managing Director of FSK.

Klaus Junginger:

The Europe-wide restriction on diisocyanates is based on the placing on the market principle, i.e., any company that produces more than one tonne of this substance per year falls within the scope of the regulation. The distribution and further use of products containing diisocyanates are also only permitted after successful training. Industrial or professional users must receive training on occupational safety, handling and control of workplace exposure and personal protective equipment before handling diisocyanate products. According to this procedure, the permitted products can still be sold and

used to implement occupational health and safety, if appropriate measures are taken. After the end of the transitional period, from 24 August 2023, diisocyanates may only be used as a substance, constituent of a substance or in a mixture, if the concentration is less than 0.1 % by weight or if it is ensured that the user has successfully completed training on the use of diisocyanates before application. We are convinced that the training courses will significantly improve occupational safety and health and that in the future, they will also serve as a model and influence other countries, such as Switzerland or Turkey. The obligation to provide training under the REACH Regulation is, of course, a European solution. However, other countries are also regulating their chemicals legislation. One might think of China or the fact that importers of substances into the EU are also subject to the REACH Regulation.

PU Magazine:

How was the training content created?

Klaus Junginger:

The overriding principle was "From practitioners for practitioners". As Specialist Association Foamed Plastics and Polyurethanes e.V., we represent our members along the entire value chain. We, as an association, together with our members, have pursued and lived the highest possible protection for the employees of our industry and a sustainable approach to the environment even before this REACH procedure. For one thing, we, as the FSK, have contributed our expert

▼ **Fig. 1:** Restriction on diisocyanates under the REACH Regulation



Restriction of diisocyanates under the REACH Regulation

1. May not be used after 24 August 2023, either as a substance or as a constituent of other substances or in mixtures, for industrial or commercial purposes, unless,
 - (a) *the concentration of diisocyanates, individually and in combination, is less than 0.1% by weight; or*
 - (b) *the employer or self-employed person ensures that industrial or commercial users have successfully completed training in the safe use of diisocyanates before using the substance(s) or mixture(s).*

2. May not be placed on the market after 24 February 2022, either as a substance or as a constituent of other substances or mixtures, for industrial or professional use, unless ,
 - (a) *the concentration of diisocyanates, individually and in combination, is less than 0.1% by weight; or*
 - the supplier ensures that the recipient of the substance(s) or mixture(s) is aware of the requirements referred to in paragraph 1(b) and that the following declaration is clearly marked on the packaging in such a way that it is clearly distinguishable from the other information on the label: from 24 August 2023, appropriate training must be provided before industrial or commercial use.*

3. For the purposes of this entry, 'industrial or commercial user(s)' means any employee or self-employed person who handles or supervises the handling of diisocyanates as substances or as components of other substances or in mixtures for industrial and commercial use.

knowledge with great commitment. For another, our members have provided insights into the production and occupational health and safety on-site, thus contributing valuable, up-to-date practical relevance.

When developing the learning content that will form the basis for the Europe-wide standardised training courses, we have also been able to draw on recognised experts from the industry. Three men have significantly enhanced the process with their industry knowledge, Wolfram Frank, Jens Hasenjäger and Martin Dietrich.

The jointly developed learning content (**fig. 2**) is aimed at various users, who have been divided into three groups according to practice:

The Level 1 Group. This group stands for all industrial and commercial users.

The Level 2 Group. This group targets the users of diisocyanates in special applications.

For the third group - the Level 3 group, advanced training will be conducted. These are typically users who engage in spraying, foundry and especially hot processing at above 45 °C.

Content development was steered and guided at the PU Exchange Panel level, which was explicitly initiated for this process by the manufacturers' associations Isopa and Alipa. In cooperation with national and international associations such as Feica, PDA Europe, CEPE, Europur/Euro-Moulders, learning content has been developed, which, in our opinion, guarantees the safe handling of diisocyanates and can serve as a model for numerous other industries. One could say that joint expert knowledge from all over Europe was brought together to develop the learning content.

▼ **Fig. 2: Learning content by group**

LEVEL 1 Basics	LEVEL 2 Follow-up training	LEVEL 3 Advanced training – Intense training
<i>How will training be provided?</i> • online or in person <i>Who will be trained?</i> • all industry and commercial users <i>What will be trained?</i> • Chemical properties of diisocyanates • Toxicity (including acute toxicity) • Exposure to diisocyanates • Workplace limit values • Causes of sensitisation • Odour as an indication for danger • Risk relevance of volatility • Viscosity, temperature and molecular weight of diisocyanates • Personal hygiene • Necessary personal protective equipment including practical instructions concerning their proper use and their limitations • Risk of exposure through skin contact and inhalation • Risk regarding application process used • Measures to protect the skin and respiratory protection • Ventilation • Cleaning, leakage, maintenance • Disposal of empty packaging • Protection of bystanders • Identification of key handling stages • Specific national code systems (where available) • Behaviour conducive to safety <i>What is necessary?</i> • Successful participation • Certificate, documented proof (certificates)	<i>How will training be provided?</i> • online or in person <i>Who will be trained?</i> Persons using diisocyanates in the following applications: • Handling of open mixtures at room temperature (including in foam tunnels) • Spraying in a ventilated spray booth Application with a roller • Application with a brush • Application by dipping and pouring Mechanical post-treatment (e.g. cutting) of not completely dried cooled products • Cleaning and waste disposal • Any other application where a similar exposure by skin contact and/or inhalation exists <i>What will be trained?</i> • All contents of level 1 • Other behaviour-related aspects • Maintenance • Change Management • Evaluation of existing safety instructions • Risk regarding application process used <i>What is necessary?</i> • Successful participation • Certificate, documented proof (certificates)	<i>How will training be provided?</i> • online or in person <i>Who will be trained?</i> Persons using diisocyanates in the following applications: • Handling of not completely dried products (e.g. freshly dried, still warm) • Foundry applications • Maintenance and repair work, for which access to equipment is required • Open handling of warm or hot formulations (> 45 °C) • Spraying in outdoor areas, with limited or exclusively natural ventilation (also in large industrial work halls) and spraying with high energy (e.g. foam, elastomers) • Any other application where a similar exposure by skin contact and/or inhalation exists <i>What will be trained?</i> • All contents of level 1 and 2 • Any other certification required for the specific application • Spraying outside a spray booth • Open handling of warm or hot formulations (> 45 °C) <i>What is necessary?</i> • Successful participation • Certificate, documented proof (certificates)

PU Magazine:

At the beginning of this interview, you said that the FSK had been involved in developing the learning content since the start. What is the FSK's role in the training process?

About the association:

The FSK-Specialist Association Foamed Plastics and Polyurethanes e.V. is one of the most important trade associations in its industry in Europe and is the largest national association of the foamed plastics and polyurethane processing industry with a tradition of more than 55 years. The association represents the plastics processing industry's interests, which has a total volume of around EUR 10 billion in the polyurethane and foamed plastics sector. The FSK is part

Klaus Junginger:

The European preparatory work and development of the uniform learning content provide the basis for successful occupational safety and health. Our job now, and our

of a network of numerous associations, such as the ARGE (specialist associations for chemicals, plastics and textiles). The FSK is also the supporting association of the Gesamtverband Kunststoffverarbeitende Industrie (GKV e. V.). The FSK members include commodity companies, machine manufacturers, system houses/formulators and above all, processing companies from the material sectors polyurethane, polypropylene, polyethylene, rubber foams, and melamine resin foam, PVC foam etc.

self-image as an interest group, is to make the learning content quickly and reliably accessible to our members and all companies in the German-speaking region. For this, we need to design a powerful learning management system that meets market, member and SME requirements. After many preliminary considerations, we have decided on a platform that mainly addresses our member's needs and supports small and medium-sized enterprises in comprehensively complying with the new training obligation. At the same time, we are also focusing on the requirements of the German-speaking region. We are holding talks regarding collaborations with the associations in the neighbouring countries of Austria and Switzerland to push the realisation of training and certifications there. The training situation itself is first presented in traditional face-to-face teaching, allowing for questions

Dr. Wolfram Frank, Dr. rer. nat. (organic chemistry), has been working in the field of polyurethanes since 1982.



He has proven experience in the plastics industry, having held various positions in the research sector and marketing for BASF in the USA and Hungary, as Managing Director for Elastogran in France and as Secretary-General of the European Diisocyanate and Polyol Producers Association (Isopa).

He is a strong business development professional with experience in negotiation, marketing and sales strategy, and management.

Dr. Jens Hasenjäger, Dr. rer. nat. of Technical Chemistry, is Head of Global SHEQ (Safety, Health, Environment, Quality) and authorised signatory at FoamPartner Germany Group.



He looks back on over 14 years of experience in the polyurethane industry as a developer and manager.

perience in the polyurethane industry as a developer and manager.

Dipl.-Ing. Martin Dietrich, Dipl.-Ing. (FH)



is an expert with over 43 years of experience as an R & D consultant for polyurethanes and materials. Dietrich is a former long-term head of materials development and now works as a consultant at Getzner Werkstoffe GmbH.

to be directed to the specialist, second through e-learning, which offers flexibility in terms of time and space, and thirdly in hybrid, a mixture of both forms of training. In offering the training courses, the FSK provides comprehensive support, such as advice on the learning content and the offering of experienced trainers who are familiar with the topic, or the administration of the

entire process – starting with the creation of participant accounts, through administration, to the reminder of the legally required update of the training course in five years. The FSK will also issue a certificate after the exam has been passed. The certificate will then serve as proof of the successfully completed training courses during reviews and audits.

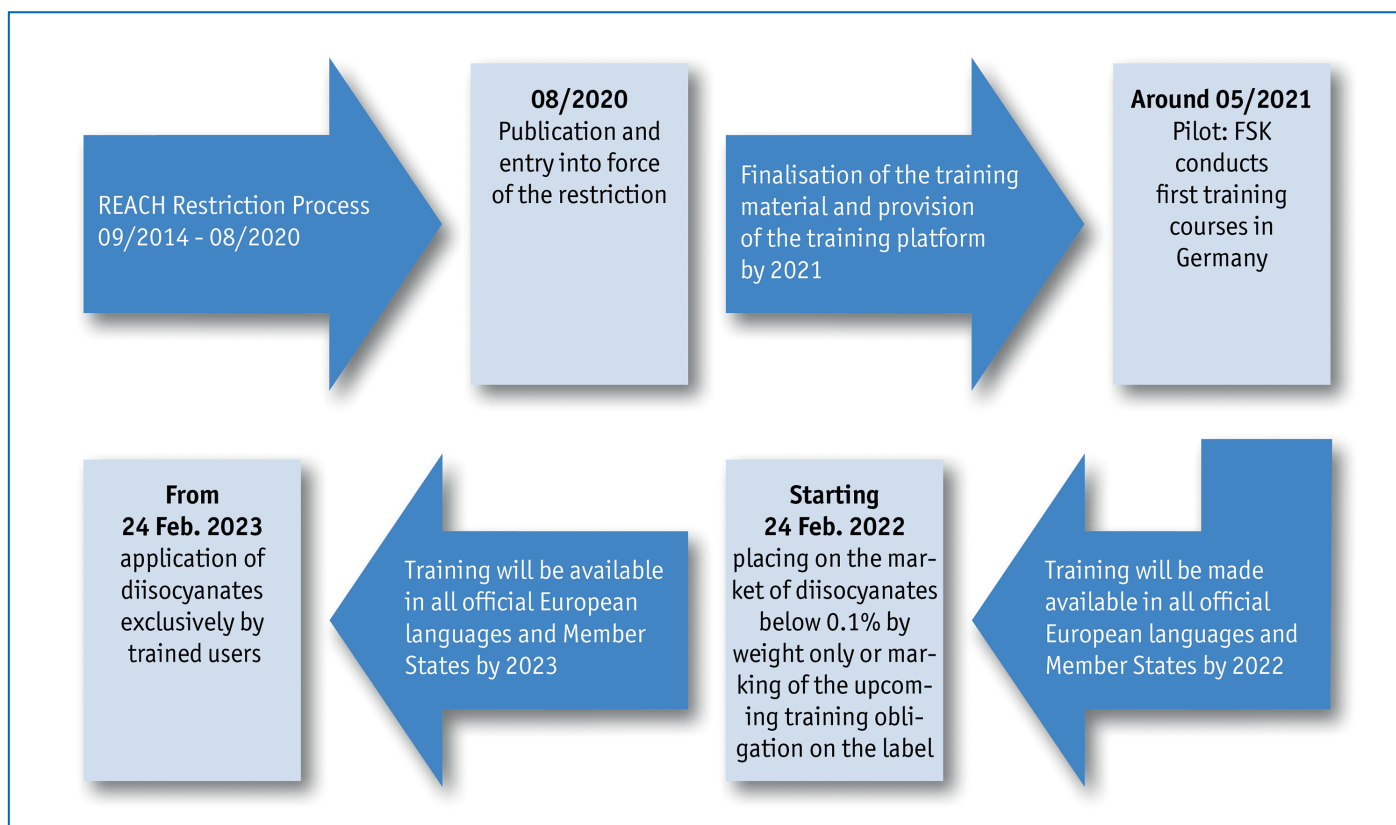
PU Magazine:

When do the training courses start, and are there any legal requirements?

Klaus Junginger:

There is a Europe-wide obligation to train by August 2023. This deadline is why an early start is essential and must be supported safely and reliably (**fig. 3**). The FSK plans a

▼ **Fig. 3:** Timeline REACH



pilot project in May of this year to launch the training via its learning management system with selected companies. Using the Moodle platform, which is used by thousands of students worldwide, we are using a solid learning system that will also last over a longer period. The learning platform also complies with fundamental standards such as SCORM (Sharable Content Object Reference Model) – a reference model for exchangeable electronic learning content – and can be easily integrated into existing corporate learning environments. We paid particular attention to data security and data protection when choosing the platform and ensured that it met Germany's high standards to guarantee the necessary security. For example, hosting, operation and data storage occurs in a German data centre with ISO 27.001 certification.

After successfully implementing the pilot phase, we want to start with the regular training courses in August this year.

You can also access everything you need to know about REACH training conveniently from anywhere using our QR code. Interested parties and future training participants can thus access the FSC learning platform quickly and conveniently.

PU Magazine:

Thank you very much for your time, Mr. Junginger.

Information about REACH training can be conveniently accessed by using the QR code.



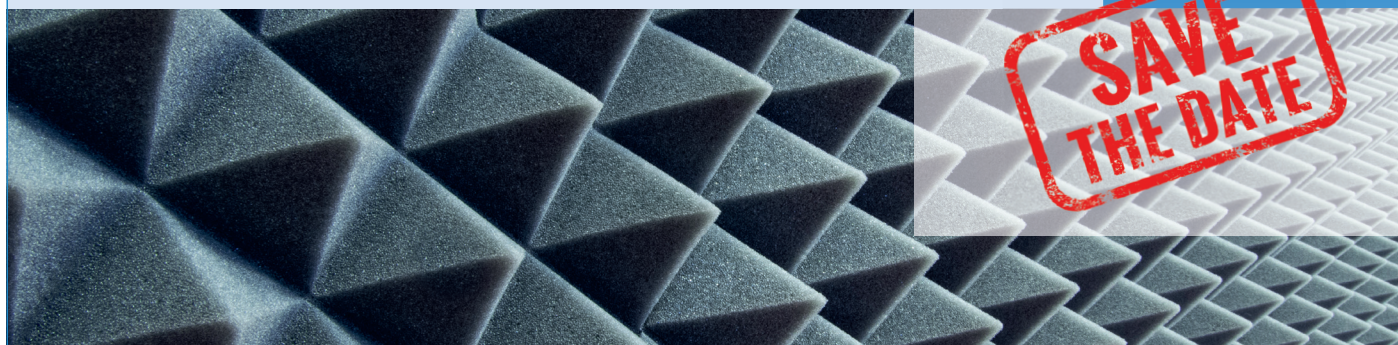
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