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Chemical compliance and hydrophobation of cellulosic textiles

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Sustainability is driving the development of textile industry, and several novel technologies for textile recycling and textile fibre production are in commercialization phase. Chemical compliance is an underrated but an essential part of sustainability. Any chemistry that is developed for textile industry needs to be more sustainable than the existing solutions. The chemistries need to meet the regulations and laws set for chemical industry and for textile products. Furthermore, the big brand owners and voluntary initiatives have strict requirements on the safety and sustainability on any chemistries that are applied in the fibre products. This sets high demand on the communication and transparency of chemistries throughout the textile value chains.

This presentation will give an overview on chemical compliance in cellulosic textiles. The regulations and voluntary initiatives are described and examples of the requirements set by brand owners and voluntary certificates will be presented. This insight highlights the importance of chemical compliance during technology development phase. The presentation will also demonstrate a case example of a biobased water repellency agent, alkyl ketene dimer (AKD), as a water repellent agent for cellulosic textiles. According to the laboratory trials, AKD can produce even superhydrophobic cellulose surfaces and reduce water absorption of the textile fibres. As a conclusion, AKD is considered as a potential hydrophobation agent for sustainable cellulosic fibres and textiles.

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