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THE DEVIL IS IN THE DETAIL

Klaus Reinhold discusses the resulting problems, possible consequences and ways forward. The sales manager construction chemicals at Worlée-Chemie GmbH also expands on the problems and chances of adapting REACH in the construction chemicals sector.

What problems do adduct hardeners pose with regard to REACH legislation? *To produce epoxy resin hardeners with specific properties, the amines used need to form adducts. This involves adding compounds containing epoxy groups such as bisphenol A diglycidyl ether to one or more amines. Using the current technique in accordance with REACH, this produces new non-polymeric substances that need to be registered accordingly. To keep the registration work and the associated costs in check, the industry and the ECHA agreed to no longer use mixed adducts but to work with in situ adducts (model substances). These are then registered via REACH.*

What is the situation with registrations, is it feasible to streamline products? *At present, the industry has three "model substances" in the registration process: the adducts IPDA with bisphenol A diglycidyl ether, MXDA with bisphenol A diglycidyl ether, and a polyaminoamide with o-cresyl glycidyl ether.*

Do you see the possibility that products will have to be cut from the portfolio? *The three substances in the registration process are important adducts when manufacturing epoxy resin hardeners, however, they only cover part of the present commercialised product portfolio in this field. In future, specialised solutions not based on the abovementioned adducts will disappear, unless the customer is prepared to take on the registration costs for these specialised solutions.*

What does Deutsche Bauchemie, the German Construction Chemicals Industry Association, suggest as the way forward? *Deutsche Bauchemie takes the view that the aim of adding epoxides to the hardener formulation is to adust the physicochemical properties of the hardener for the intended use and to stabilise the product. It is assumed that there is no intention to produce epoxy amine adducts. Annex V of the REACH regulation stipulates that these substances do not need to be registered. However, to be on the safe side, Deutsche Bauchemie has advised its members to pre-register or register the adducts. The association therefore refers to adduct hardeners as "epoxy resin-stabilised amines". However, it is not clear whether this reasoning is shared by the ECHA.*

Your company works with adducts that come under the ECHA definition of a polymer. What does this mean in terms of REACH registrations? *Worlée wanted a way of ensuring it could continue to pursue new joint developments with its customers using the entire range of available amines and epoxy compounds. The only economically sensible option uses the ECHA polymer and monomer definition. The crucial point is that we can offer highly functioning epoxy resin hardeners from polymeric components for virtually all the applications covered by these products today. Using this technology, which does not require REACH registration, means that even in the future, customers can continue to successfully manage development in this product field. There will not be*

CURRENT MODEL SUBSTANCES

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- MXDA with bisphenol A diglycidyl ether
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"Proven products either cease to exist or their properties are modified. One consequence of this is that entire process chains when using, for example a floor covering, need to be adapted."

Klaus Reinhold, Worlée-Chemie GmbH

any delay caused by the registration process. There will be significantly less work involved with new developments using this technology than for a substance that requires registration, and importantly we can also offer our customers specific solutions in future that enable them to maintain their entire product range.

Are there other substances with similar issues? *Yes, Prepolymers with low viscosity could face similar issues.*

The REACH regulation has recently had its ten year anniversary: How would you summarise this period? In your view, what are the opportunities and issues for the construction chemical sector? *In the past ten years, construction chemistry has progressed a long way in terms of REACH. Many of the key substances are registered or at least pre-registered. For this reason, at first glance the key application fields are covered for the future. As always, the devil is in the detail: specialised solutions or products with highly specific properties frequently need a combination of many different raw materials that only provide the desired and required performance profile in this combination. Often, only small quantities of the individual raw material are involved. And that is precisely the problem. The solutions do not just need to work technically, they also need to remain affordable. The registration process makes these products disproportionately more expensive, which is why proven products either cease to exist or their properties are modified. One consequence of this is that entire process chains when using, for example a floor covering, need to be adapted. There may then be an associated investment in additional safety equipment. However, we also see REACH as a opportunity. Of course, a new product category such as polymer hardeners first needs investment in research and development, application technology and the technical documentation. We strongly believe that it is worthwhile to explore new avenues that would have previously been unimaginable and believe that this will help customers have the certainty of maintaining your product portfolio and continuing as usual to develop it creatively.*

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