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Safe use of anhydrides in the production of electricity transmission & distribution equipment

T&D Europe supports the overall strategy of the REACH Regulation EG 1907/2006 in ensuring a high level of protection of human health and environment and in avoiding substances of high concern as much as possible.

Background

Hexahydrophthalic Anhydride (HHPA) and Methylhexahydrophthalic Anhydride (MHHPA) have been included in the draft prioritisation for authorisation by ECHA for their respiratory sensitising properties and are regarded by the agency as constituting an equivalent level of concern to CMR substances. AJIT, the Anhydrides Joint Industry Taskforce, is an initiative of the entire anhydrides value chain (producers, formulators, downstream users) to gather information on the current exposure, risks and socio-economic impact associated with the use of HHPA and MHHPA. T&D Europe companies are downstream users. Meanwhile several surveys and studies were performed under the umbrella of AJIT resulting among others in a report on the socio-economic impact¹, an exposure and medical inventory report² and a worker training program³.

Findings

After more than 16 years of epoxy production using anhydrides, there is no evidence of occupational asthma amongst the workers examined in AJIT plants operated by T&D Europe companies. T&D Europe cannot support the claim in the draft prioritisation that the anhydrides have an equivalent concern as other hazardous substances classified under CMR⁴.

The anhydrides have only industrial and no professional or consumer use. The synthesis of the final polymer to insulate winding coils of High Voltage Rotating Devices (HVRD) e.g. motors and to create solid epoxy components for insulation in electrical Switchgear (SG) occurs in a closed mould and under controlled and confined conditions. The anhydride monomer polymerizes the epoxy molecules until all of the free anhydride is consumed and the final article can be demoulded. From this perspective, the anhydrides fulfil all criteria laid down in REACH article 3(15) for the definition of an “intermediate”. Final curing of the article then either occurs during the normal cooling of the article or accelerated cooling in a heated curing oven so that finally a very low content of free anhydrides remains (below 0.1%).

The recent European Court of Justice case C-650/15 P⁵ dated 25 October 2017 clarifies in which circumstances a use should be considered as intermediate use. Substantiated by a legal opinion formulated by Noerr LLP⁶, the uses of HHPA and MHHPA as curing agents for epoxy resins in HVRD

¹ AJIT Public Consultation Report 16-2-2016 <http://anhydrides.eu/report-5592-lobortis-neque-rhoncus-eget/>

² AJIT Exposure and Medical Inventory Report 26-8-2016 <http://anhydrides.eu/eamir/>

³ AJIT Training program, available upon request

⁴ CMR : carcinogenic, mutagenic or toxic for reproduction

⁵ Court case C-650/ 15 P

⁶ Legal opinion from Noerr LLP, available upon request

by Vacuum Pressure Impregnation and in SG by Automatic Pressure Gelation and Vacuum Casting should be considered as intermediates. Under these premises, anhydrides are in T&D Europe's opinion exempted from authorization and obligations according to Article 56 REACH as stipulated in Article 2(8) b) REACH.

Outlook and conclusion

Through a voluntary commitment⁷ of all AJIT members, the industry members of T&D Europe are further intensifying their risk management measures in handling chemical substances and protecting workers. AJIT is surveying the implementation of the voluntary commitment in particular, AJIT is working with academic partners to establish reliable measurement methods for air-borne anhydrides and residual concentrations in cured parts.

T&D Europe firmly believes that the best tool to address risks related to the use of HHPA and MHPA remains AJIT's Voluntary Commitment and T&D Europe companies will continue its implementation.

ABOUT T&D EUROPE

T&D Europe is the european association of the electricity transmission & distribution equipment and services industry. Our scope includes the complete range of products and services necessary to transmit and distribute electricity in high and medium voltages, between the producers and the end users. T&D Europe members provide all types of smart grid technologies, including advanced, smart systems suitable for interaction with renewable energies and ICT. The companies represented by T&D Europe account for a production worth over € 25 billion EUR, and employ over 200,000 people in Europe. Further information on T&D Europe can be found here: www.tdeurope.eu

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⁷ AJIT Voluntary Commitment Progress Report 30-10-2017 <http://anhydrides.eu/voluntary-commitment-report-2017/>