

Reclassification of Ceramic Fibres in Prospect

Since 1997, ceramic fibres have been classified in Category 2 (i.e. carcinogenic in animal tests) on the basis of an animal experiment. In the meantime, the correctness of this experiment has been called into question. Recent studies have shown that the animal experiment that led to the classification was incorrect owing to an "overload effect". On the basis of toxicological findings available today, ceramic fibres would no longer be classified in Category 2. With the scientifically founded facts now known and findings of relevant studies, the overload effect has been proven and the incorrect classification scientifically revealed. No single case is known of persons, specifically workers, who handle such products everyday contracting lung disease as a consequence of their exposure to mineral or ceramic fibres. All scientific facts therefore indicate that the current classification of ceramic fibres in Category 2 is incorrect!

However, no changes to policy have yet been implemented to reflect these more recent findings. The discussion concerning a reclassification of ceramic fibres is in progress in the technical committees of the European Commission, and a reclassification of ceramic fibres into Category 3 on the basis of the scientific facts is feasible in the foreseeable future.

A commonly applied and improperly drawn parallel between ceramic fibres and asbestos, especially with regard to a comparable carcinogenic effect, is not scientifically founded (both on mineralogical and toxicological grounds) and equally incorrect.

In his new publication (Extrapolation of Carcinogenic Potency of Fibres from Rats to Humans; *Inh. Toxicology*, 16: 810-807, 2004), Dr Klaus Rödelsperger, an internationally acknowledged expert in the field of fibrous materials, has compared the risks of asbestos and ceramic fibres and comes to the conclusion that ceramic fibres have a 4 500 times lower potency than asbestos. With his conclusion, he confirms an assessment made by the IARC/WHO in 2002 (Monograph 81 (2002) Man-Made Vitreous Fibres).

The risk of ceramic fibres is more comparable to that of other glass and mineral fibres, which is also shown by widely known studies on biosolubility published by the Fraunhofer Institute in Hanover in 2001. (Bellmann et al.: Effects of Non-Fibrous Particles on Ceramic Fibre (RCF1) Toxicity in Rats; *Inh. Toxicology*, 13: 101-125, 2001).

Providing ceramic fibre products are handled properly, e.g. in compliance with Germany's Technical Regulations on Hazardous Materials concerning "fibrous dust" (TRGS521), the health risk is minimal. With regard to long-term exposure, the hazard risk posed by ceramic fibres is, according to an assessment by the Harvard Risk Centre (USA 2003), approximately comparable with the risk of being struck by lightning.

The extraordinary advantages of the products derived from high-temperature wool (in particular ceramic fibre products) in applications such as industrial furnace construction, fire protection, automotive construction and heating engineering are undisputed among professionals in these fields.

The use of the products enables predominantly industrial users to efficiently operate thermal treatment plants at temperatures between 800 and 1400°C. In these high-temperature applications, the consumption of primary energy and the associated CO₂ emissions can be reduced by up to 50 % in many industrial installations. The application of products made of high-temperature wool is becoming increasingly important against the background of the currently rising cost of energy.

An increase in productivity and the safeguarding of jobs, e.g. in the ceramic and steel industry, are welcome business and economic side-effects.

Particularly in the context of the current discussion on safeguarding Germany's future as an industrial centre, as well as with regard to emission trading, for many applications there are no economic and ecological alternatives to the products made of high-temperature wool. (A paper on this topic is currently in preparation for publication in *cfi/Ber.DKG 82* (2005) 5).

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