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BROMINATED FLAME RETARDANTS – OCCURENCE AND HEALTH RELEVANCE

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Brominated flame retardants (BFRs) are a large group of different substances used in numerous products to prevent fire hazards. Some of them are persistent in the environment, accumulate in the food chain and are of toxicological concern, while for others current data are limited. Meanwhile, BFRs have been found in many environmental media, foods, and biota including humans.

We will present recent findings obtained from monitoring data in different environmental media like indoor air and dust as well as dietary exposure. Furthermore, we give an overview of human biomonitoring data on BFR levels in blood and breast milk. Current estimates of the overall exposure of the general population using different relevant subsets are also addressed. All of these data are discussed in relation to currently available toxicological reference values used for risk assessment purposes.

Obviously, the exposure of the general population varies considerably in different parts of the world and even within countries. Polybrominated diphenyl ethers (PBDEs) and hexabromocyclododecane (HBCD) show very often the highest exposure levels. Nevertheless, other "emerging" BFRs like tetrabromobisphenol A (TBBPA) and bis(2-ethyl-1-hexyl) tetrabromophthalate (TBPH) have to be considered in future. For most of the substances dietary intake was the major source. Additionally, non-dietary human exposure via inhalation and oral ingestion of house dust can make a significant contribution to the total intake under some circumstances, particularly for toddlers.

Biography

Hermann Fromme has completed his MD at the Ludwig-Maximilians-University, Munich, Germany. He is the head of the Department of Chemical Safety and Toxicology of the Bavarian Health and Food Safety Authority and associate professor at the Ludwig-Maximilians-University, Munich. Central topics of the department are the identification of chemical exposures in environmental media and humans. He published numerous papers, especially in the field of indoor air and dust analysis and human biomonitoring.

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