OccupationalExposureLimits Values for PAHsattheWorkplaces : Rational andApplicability. Proposal for a NormIntegrating TEF

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The approach of industrial hygienist to assess exposure of workers to PAHs is determining the air concentration levels by personal or area sampling in the workplace and comparing with the permissible exposure limit. The only epidemiologically based standard (health based so far) is that of the benzene soluble organic matter (BSM), now replaced by cyclohexane due to leukemic properties of the former, uniquely applicable to coal tar picth volatiles. The occupational exposure limits (OEL) for PAHs from all other sources in many countries refer to one compound Benzo [a]pyrene (BaP) considered as an indicator of this whole category.

Other national OELs refer to “the sum of analyzed PAHs”. Revisiting the various occupational limit values in connection with industrial processes shows inconsistencies that deserve to be better understood.

On the other hand, the capability and performance of gas chromatography enable the separation of numerous PAHs and their isomers with different carcinogenic potential. The analysis of high molecular weigh PAHs up to MW 302 associated with the development of toxic equivalency factors (TEF) open the road for the adoption of OEL integrating all carcinogenic PAHs encountered in the workplaces.

This presentation discusses the various occupational limit values associated with PAHs and PAH generating processes and shows examples of the application of TEF for PAHs to better prevent carcinogenic risk for the workers.