

INDUSTRIAL USE OF METALS, RISK ASSESSMENT AND PREVENTION OF HEALTH EFFECTS.

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Metals are widely used in many industries. The chemical industry is based on catalysts and these are often metals or metal compounds. New applications in the electronic industry and in nanotechnology are expanding. In combination with classical large uses the total worldwide use of metals is expanding.

Human exposure as a result of industrial uses occur in the working environment, general environment in the vicinity of industries and sometimes due to the use of metal containing industrial products.

It is important to carry out risk assessments, including assessment of human exposures from various exposure media, hazard identification, i. e. to determine what potential health effects that can be caused by exposure to a particular metal or its compounds, dose-response analysis, i e to relate exposure levels to the occurrence of health effects and finally risk characterization, i e to combine the exposure assessment with dose-response analysis in order to derive the number of persons that are at risk of developing adverse health effects.

Based on risk assessments, preventive measures are recommended. They may include control of the working environment, emissions to the general environment and sometimes, limiting the use of specific metals or metal compounds. In the Handbook on the Toxicology of Metals (3rd Ed 2007) these considerations are dealt with for 31 metals and their compounds.