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ENVIRONMENTAL AND ECOTOXICOLOGICAL RISK OF LEAD COMPOUNDS

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Abstract

Persistent bioaccumulative chemicals, as lead and lead compounds, are of concern not only because they are toxic, but also because they remain in the environment for long periods of time, without being destroyed, and build up or accumulate in body tissues. In addition to bioaccumulation in certain plants and aquatic organisms, lead and lead compounds are known to accumulate in human body, generating severe health problems, due to negative effects over the central nervous system and kidney, accumulation in bones, anemia or saturnism.

This paper presents an overview of the major sources of pollution with lead, their effects and risk for the natural environment and living organisms, as well as issues related to the actual stage in research and evaluation of ecotoxicological properties of lead and its compounds. The impact of lead compounds on living organisms is illustrated by the experimental results of a recent study on rats that showed that lead not only affects the viability of the fetus, but its development as well. Developmental consequences of prenatal exposure to lead include reduced birth weight and teratogenic type changes of internal organs. Also, the methodology to approach the evaluation and the remediation of contaminated sites are presented.

Keywords: lead compounds, environmental risk, ecotoxicological risk, risk evaluation methodology

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