

Title	Po-210 and other radionuclides in terrestrial and freshwater environments
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ISBN	978-87-7893-247-1
Date	January 2009
Project	NKS-B / GAPRAD
No. of pages	38
No. of tables	20
No. of illustrations	14
No. of references	52
Abstract	<p>This report provides new information on Po-210 (and where appropriate its grandparent Pb-210) behaviour in environmental systems including humans. This has primarily been achieved through measurements of Po-210 in aquatic and terrestrial environments that has led to the derivation of information on the levels of this radioisotope in plants, animals and the biotic components of their habitat (i.e. water, soil) providing basic information on transfer where practicable. For freshwater environments, Po-210 concentration ratios derived for freshwater benthic fish and bivalve mollusc were substantially different to values collated from earlier review work. For terrestrial environments, activity concentrations of Po-210 in small mammals (although of a preliminary nature because no correction was made for ingrowth from Pb-210) were considerably higher than values derived from earlier data compilations. It was envisaged that data on levels of naturally occurring radionuclides would render underpinning data sets more comprehensive and would thus allow more robust background dose calculations to be performed subsequently. By way of example, unweighted background dose-rates arising from internal distributions of Po-210 were calculated for small mammals in the terrestrial study. The biokinetics of polonium in humans has been studied following chronic and acute oral intakes of selected Po radioisotopes. This work has provided information on gastrointestinal absorption factors and biological retention times thus improving the database upon which committed effective doses to humans are derived. The information generated in the report, in its entirety, should be of direct relevance for both human and non-human impact assessments.</p>
Key words	Po-210, environmental impact assessment, levels, transfer, concentration ratios, human biokinetics