

Welcome to the Risk Assessment Information System

The RAIS contains Risk Assessment Tools and Information. The Risk Assessment Tools include: Risk-Based Preliminary Remediation Goal (PRG) calculations, a Toxicity data base, Risk Calculations, and Ecological Benchmarks. The Tools are designed for use at all DOE sites and can be customized for site-specific conditions. The RAIS also includes information, guidance, and risk results applicable to the Oak Ridge Reservation.

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Strontium-90 is one of 11 radioisotopes of strontium that are produced in nuclear fission. Strontium-90 is a low-energy beta emitter that decays to its radioactive daughter, yttrium-90, with a relatively long physical half-life of approximately 28 years. Because of radioactive decay, yttrium-90 is always present in the environment with strontium-90. Strontium-90 may be released to the environment from normal operation of nuclear power plants and reactors, nuclear plant accidents, past nuclear weapons testing, and leakage from radioactive waste sites. Strontium is an alkaline earth metal belonging to Group IIA of the periodic table. No information on the physical and chemical properties of strontium-90 was located, but the chemical behavior of a radionuclide is essentially the same as that of the stable element (stable strontium or strontium-88) and is similar to that of other elements in the same chemical group, such as calcium. Radionuclide uptake is expressed in units of activity [Curies (Ci) or Becquerels (Bq)] rather than mass. Absorbed dose is expressed in terms of rads or Grays (Gy); dose equivalent (the relative biological effectiveness of the type of radiation) is expressed in terms of rems or Sieverts (Sv). Many of the studies discussed in this profile were reviewed and summarized with activity units converted from Ci to Bq by the National Council on Radiation Protection and Measurements.

http://risk.lsd.ornl.gov/tox/profiles/strontium_90_ragsa.shtml