

Potassium-40 and Salt Substitute Facts & Figures

- 0.01% of all potassium is radioactive potassium-40 (K-40)
- Specific activity of potassium is 818 pCi/g
- Typical potassium-40 activity of soil is 20 pCi/g
- Radiation dose from K-40 in soil is 10 mrem/year

- Soil cleanup standards for K-40 are,
 - 28 pCi/g for a dose limit of 15 mrem/y
 - 0.013 pCi/g for a risk limit of 10^{-6} (EPA data)

- K-40 in human body is 100,000 pCi = 1.5 pCi/g
 - Dose is 40 mrem/year
 - The AMA "recommended daily intake" of potassium is 3.5 g per day
 - Equivalent to 2,900 pCi per day or 1,000,000 pCi per year of K-40

- "Salt Substitute" is potassium chloride (KCl) and is used as an alternative to regular salt (sodium chloride) by people on low sodium diets. It is freely available in markets
 - Specific activity of potassium chloride (KCl) is 433 pCi/g
 - 90 g "salt shaker" contains 39,000 pCi of K-40
 - Salt Substitute is 16 times the 15 mrem/y dose standard for K-40 in soil
 - Salt Substitute is 22 times the natural background soil levels
 - Salt Substitute is 33,000 times the EPA 10^{-6} risk standard for K-40 in soil