

RADIONUCLIDE SAFETY DATA SHEET

NUCLIDE: Sr82/Rb82 GENERATOR

FORMS: ALL SOLUBLE

PHYSICAL CHARACTERISTICS:

HALF-LIFE: (SR-82) : 25 days

TYPE DECAY: E.C.
daughter radiations from RB-82

HALF-LIFE: (RB-82) : 1.25 min

TYPE DECAY: e⁺ EC

gammas: 0.511 MeV (192 %)
 0.777 MeV (9 %)
beta + : 3.18 MeV maximum

Hazard category: C- level (low hazard) : .100 uCi

B - level (Moderate hazard) : > 100 uCi to 10 mCi

A - level (High hazard) : > 10 mCi

EXTERNAL RADIATION HAZARDS AND SHIELDING:

The gamma exposure rate at 1 cm from 30 mCi Rb-82 is 170 R/hr. The exposure rate varies directly with activity and inversely as the square of the distance. The 1/10 value layer in lead for Rb-82 is 2 cm. The beta absorbed dose rate at 1 cm from 30 mCi Rb-82 is 9000 R/hr. The range of 3.18 MeV beta is 0.6 inches in lucite and 0.3 inches in glass.

HAZARDS IF INTERNALLY DEPOSITED:

The annual limit on oral intake (ALI) of RB-82 corresponding to a whole body guideline gamma exposure rate of 500 mrem/year is 28 mCi.

DOSIMETRY AND BIOASSAY REQUIREMENTS:

Film badges and dosimeter rings are required for all usage of Sr-82/Rb-82.

SPECIAL PROBLEMS AND PRECAUTIONS:

1. Because the specific gamma-ray constant for Rb-82 is high exposure reduction can best be achieved through avoiding unnecessary holding of the i.v. tube leading to the patient from the generator. Store the generator behind lead. Unnecessary exposure to personnel and other patients should be minimized by increasing distance from the patient. The gamma exposure rate at 1 meter from a patient containing 30 mCi of Rb-82 will be approximately 15 mR/hr.
2. Rb-82 wastes may be disposed of to regular trash after 30 minutes provided there is no breakthrough of the parent Sr-82.

