RADIONUCLIDE SAFETY DATA SHEET

NUCLIDE: Ge-68 **FORMS: ALL SOLUBLE**

PHYSICAL CHARACTERISTICS:

HALF-LIFE: 288 days TYPE DECAY: EC

GA X-rays: 9.22 keV (13.1%)
9.25 keV (25.6%)
10.3 keV (5.46%)

GAMMAS: from daughter GA-68

Hazard category: C- level (low hazard) : to 10 uCi
B - level (Moderate hazard) : > 10 uCi to 1 mCi
A - level (High hazard) : > 1 mCi

EXTERNAL RADIATION HAZARDS AND SHIELDING:

The exposure rate at 1 cm from 1 mCi if 5375 mR/hr (from the daughter Ga-68 at equilibrium). The exposure rate varies directly with activity and inversely as the square of the distance. A 10 mCi generator should be shielded with 1.5 cm thickness of lead (minimum) in order to reduce the exposure to 5 mR/hr at 1'. 3 cm of lead will reduce the exposure to 0.5 mR/hr at 1' .

HAZARDS IF INTERNALLY DEPOSITED:

The annual limit of oral intake (ALI) of Ge68 corresponding to a whole-body guideline gamma exposure rate of 500 mrem/year is 540 uCi.

DOSIMETRY AND BIOASSAY REQUIREMENTS:

Film badges and dosimeter rings are required if 100 microcuries or more are handled.

Urine assays may be required after spills or contamination incidents.

SPECIAL PROBLEMS AND PRECAUTIONS:

1. Work behind lead shielding. Survey frequently. Handle stock solution vials in shields or use tongs or forceps. Change gloves often.

2. Segregate wastes to those with half-lives greater than 90 days.