

## RADIONUCLIDE SAFETY DATA SHEET

**NUCLIDE: Am-241**

**FORMS: SOLUBLE**

### PHYSICAL CHARACTERISTICS:

HALF-LIFE: 432.2 years

TYPE DECAY: alpha, gamma

Energies: alpha 5.49 MeV (85%), gamma 0.059 MeV (36%)

Hazard category: C- level (low hazard) : .0001 to 0.01 mCi

B - level (Moderate hazard) : > 0.01 mCi to 1.0 mCi

A - level (High hazard) : greater than 1.0 mCi

### EXTERNAL RADIATION HAZARDS AND SHIELDING:

The gamma exposure constant is approximately 1.3 R-cm<sup>2</sup>/mCi-hr. The amount of lead necessary to reduce the exposure by a factor of ten is 0.03mm.

### HAZARDS IF INTERNALLY DEPOSITED:

This is a highly radiotoxic material. The principal hazard from Am-241 occurs if the material is allowed into one's body. The Campus Annual Limit of Intake (oral), based upon 10% of maximum permissible, is 0.035 uCi. The campus ALI for inhalation is 0.00054 microcuries also based upon 10% dose of the maximum permissible.

### DOSIMETRY AND BIOASSAY REQUIREMENTS:

Urine assays will be required after spills or contamination incidents involving more than 0.1 microcuries.

### SPECIAL PROBLEMS AND PRECAUTIONS:

1. Work in a fume hood to capture any dusts.
2. Always wear protective gloves to keep contamination from skin. Change gloves often.
3. Always survey work areas at conclusion of work. Perform documented surveys monthly. Smear surveys are required, though the NaI scintillation probe can detect gross contamination.
4. Segregate wastes to those with half-lives of greater than 90 days (but not with H3 and/or C14). Wrap dry wastes to minimize dust information.
5. Limit soluble waste to sewer to 0.01 microcuries/ day per lab. Generally, solidify liquid wastes in cement kits.