RADIONUCLIDE SAFETY DATA SHEET

NUCLIDE: As-73 **FORMS: SOLUBLE**

PHYSICAL CHARACTERISTICS:

HALF-LIFE: 80 days TYPE DECAY: e^- capture

maximum energies: e^- 0.01 MeV (160%)
0.04 MeV (77%)
0.05 MeV (10%)
gammas: 0.053 MeV (10%)
X-rays: 0.001 MeV (104%)

Hazard category: C- level (low hazard) : .100 to 10 mCi
B - level (Moderate hazard) : > 10 mCi to 1.0 Ci
A - level (High hazard) : greater than 1.0 Ci

EXTERNAL RADIATION HAZARDS AND SHIELDING:

The 53 KeV gamma exposure constant is 0.037 R-cm^2/mCi-hr. The amount of lead necessary to reduce the exposure rate by a factor of ten is 0.2 cm. The maximum ranges of the various conversion electrons in various materials is as follows:

Air	0.076 inches
Water	0.0001 inches

Shielding for the gamma rays will stop the beta particles.

HAZARDS IF INTERNALLY DEPOSITED:

The campus annual limit of intake (oral) the amount which would give a dose of 500 mrem is 810 uCi.

DOSIMETRY AND BIOASSAY REQUIREMENTS:

Film badges and finger dosimeters are of very marginal value for handling mCi amounts of As^{73}.

Urine assays may be required after spills or contamination incidents.

SPECIAL PROBLEMS AND PRECAUTIONS:

1. Always wear protective gloves to keep contamination from skin. Change gloves often.
2. Survey work areas at conclusion of work. Smear surveys are required.
3. Segregate wastes to those with half-lives of from 65 to 90 days.
4. Limit of soluble waste to sewer to 100 microcuries/ day per lab.

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