

## RADIONUCLIDE SAFETY DATA SHEET

**NUCLIDE: I-123**

**FORMS: INORGANIC OR FREE IODINE**

### PHYSICAL CHARACTERISTICS:

HALF-LIFE: 13.13 hours

TYPE DECAY:  $e^-$  capture  
Gamma rays 0.159 MeV (83.4 %)  
Xrays 0.027 MeV (71 %)  
0.031 MeV (16 %)

Hazard category: C- level (low hazard) : 100 uCi to 10 mCi  
B - level (Moderate hazard) : > 10 mCi to 1 Ci  
A - level (High hazard) : > 1 Curies

### EXTERNAL RADIATION HAZARDS AND SHIELDING:

Exposure rate at 1 cm from 1 mCi is 1.8 R/hr. (Exposure is directly proportional to activity and inversely to square of distance from materials.)

Amount of lead required to reduce the exposure rate by 10 (1 TVL) is approximately 0.2 centimeter.

### HAZARDS IF INTERNALLY DEPOSITED:

Deposition on the skin from contamination or inhalation from air containing iodine vapors will result in internal deposition. Iodide solutions are easily oxidized and the elemental iodine will become airborne. About 70% of activity inhaled is deposited in the body and about 30% of that is deposited in the thyroid.

Blocking the uptake of radioiodine is not permitted. Work in proper fume hoods. (See Radiation Protection Manual, page 63).

The Annual Limit of Intake (ALI) is 270 uCi.

### DOSIMETRY AND BIOASSAY REQUIREMENTS:

Film badges and dosimeter rings are required if 5 millicuries are handled at any one time or millicurie levels are handled on a frequent (daily) basis.

### SPECIAL PROBLEMS AND PRECAUTIONS:

1. Segregate wastes to those with half-lives less than 4 days. Wrap all waste items in plastic bags prior to placing them in waste.
2. Limit of soluble waste to sewer to 100 microcuries/ day per lab.
3. Wear double gloves.