

## RADIONUCLIDE SAFETY DATA SHEET

NUCLIDE: TI-201

FORMS: ALL SOLUBLE

### PHYSICAL CHARACTERISTICS:

HALF-LIFE: 3.04 days

TYPE DECAY:  $e^-$  capture

gammas: 0.031 MeV (0.2%)  
0.032 MeV (0.2 %)  
0.135 MeV (2.7 %)  
0.166 MeV (0.2 %)  
0.167 MeV (10.0 %)  
X-rays 0.069 - 0.080 MeV (94.4 %)

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 Ci

### EXTERNAL RADIATION HAZARDS AND SHIELDING:

The exposure rate at 1 cm from 1 mCi is 407 mR/hr. The exposure rate varies directly with activity and inversely as the square of the distance. The tenth value of lead for this energy of radiation is 0.09 cm.

### HAZARDS IF INTERNALLY DEPOSITED:

The annual limit on oral intake (ALI) of TI-201 corresponding to a whole-body guideline gamma exposure rate of 500 mrem/year is 800 uCi.

### DOSIMETRY AND BIOASSAY REQUIREMENTS:

Film badges and dosimeter rings are required if 10 millicuries are handled at any one time or 5 millicurie levels are handled on a frequent (daily) basis.

Urine assays may be required after spills or contamination incidents.

### SPECIAL PROBLEMS AND PRECAUTIONS:

1. When 5 millicuries are used, work behind lead shielding. Surveys frequently. Handle stock solution vials in shields or use tongs or forceps. Change gloves often.
2. Segregate wastes to those with half-lives less than 4 days.
3. Dilute aqueous wastes may be disposed to the sewer system in amounts of up to 100 uCi daily per lab.

