

## RADIONUCLIDE SAFETY DATA SHEET

**NUCLIDE: Mn-54**

**FORMS: ALL SOLUBLE**

### PHYSICAL CHARACTERISTICS:

HALF-LIFE: 313 days

TYPE DECAY: e<sup>-</sup> capture  
gamma: 0.835 MeV (100 % )

Hazard category: C- level (low hazard ) : .01 to 1.0 millicuries  
B - level (Moderate hazard) : > 1.0 mCi to 100 mCi  
A - level (High hazard) : > 100 mCi

### EXTERNAL RADIATION HAZARDS AND SHIELDING:

The exposure rate at 1 cm from 1 mCi is 4700 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 4.2 cm.

### HAZARDS IF INTERNALLY DEPOSITED:

The annual limit on oral intake (ALI) of Mn54 corresponding to a whole-body guideline gamma exposure rate of 500 mrem/ year is 190 uCi.

### DOSIMETRY AND BIOASSAY REQUIREMENTS:

Film badges are required when handling mCi amounts of this isotope.

Urine assays may be required after spills or contamination incidents.

### SPECIAL PROBLEMS AND PRECAUTIONS:

1. When .01 millicuries are used, 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 (but not with H3 and/or C14).
3. Dilute aqueous wastes may be disposed to the sewer system in amounts of up to 10 uCi daily per lab.