

RADIONUCLIDE SAFETY DATA SHEET

NUCLIDE: Cr-51

FORMS: ALL SOLUBLE

PHYSICAL CHARACTERISTICS:

HALF-LIFE: 27.7 days

TYPE DECAY: e^- capture
gamma: 0.320 MeV (9%)
X-rays: 0.005 - 0.026 MeV
auger e^- : 0.005 MeV (76 %)

Hazard category: C- level (low hazard) : 1 to 200 millicuries
B - level (Moderate hazard) : > 200 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 180 mR/hr. The exposure rate varies directly with activity and inversely with the square of the distance. The tenth value of lead for this radiation energy is 0.7 cm.

HAZARDS IF INTERNALLY DEPOSITED:

The annual limit on oral intake (ALI) of Cr51 corresponding to a whole-body guideline gamma exposure rate of 500 mrem/year is 4000 μ Ci.

DOSIMETRY AND BIOASSAY REQUIREMENTS:

Film badges and dosimeter rings are usually 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. When millicuries levels are used or stored, use lead shielding. Survey frequently. Handle stock solution vials in shields or use tongs or forceps.
2. Survey frequently with a GM monitor. Change gloves often.
3. Segregate wastes to those with half-lives \geq from 19 days to less than 65 days.
4. Dilute aqueous wastes may be disposed to the sewer system in amounts of up to 1 mCi daily per lab.