Stanford | Environmental Health & Safety

RADIONUCLIDE SAFETY DATA SHEET

RADIONUCLIDE: Fe-55 | **FORMS: Soluble**

PHYSICAL CHARACTERISTICS

HALF-LIFE: 2.737 years

DECAY EMISSIONS

Gammas / X-rays		Betas / Positrons (+) / Electrons*		Alphas	
E (keV)	%	E (keV, Ave)	%	E (keV)	%
6	25	1*	143		
		5*	50		
		6*	13		

- Only 4 most probable emissions per decay type included. Emissions below 1% excluded.

STANFORD HAZARD CATEGORY

C – level (low hazard): **≤ 20 mCi**
B – level (moderate hazard): **> 20 mCi, ≤ 1 Ci**
A – level (high hazard): **> 1 Ci**

EXTERNAL RADIATION HAZARDS

Gamma dose rate, point source at 1 ft, 1 mCi:
0 mrem/h

Beta dose rate to skin, point source at 1 ft, 1 mCi:
0 mrem/h

Contamination skin dose, uniform deposit of 1 µCi per cm^2:
60 mrem/h

INTERNAL RADIATION HAZARDS

Annual Limit on Intake: **9000 µCi** (Ingestion)
2000 µCi (Inhalation)

The values above indicate the activity taken into the body that would result in either 5 rem to the whole body (CEDE) or 50 rem to an organ or tissue (CDE).

SHIELDING

Gammas/X-rays:
N/A

Betas/electrons:
N/A

DOSIMETRY AND BIOASSAY REQS

Urine assays may be required after large spills or contaminations.

SPECIAL PROBLEMS AND PRECAUTIONS:

1. Recommended survey probe: **Thin-window NaI (low efficiency).**
2. Always wear protective gloves, a lab coat, and safety eyewear to protect the skin and eyes from contamination. Change gloves often.
3. Survey work areas before, during, and after work. Smear surveys are required.
4. Segregate waste to those with half-lives greater than **120 days (excluding H3 and C14)**.
5. Limit soluble waste to the sewer to less than **100** µCi/day per lab.

References:

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