RADIONUCLIDE DATA SHEET
Lutetium

Lu-177 71 protons 106 neutrons

Radiation: **Decay mode:** Beta

Major Betas:

Max E (MeV)	Avg E (MeV)	# per 100 dis
0.498	0.149	78.6
0.385	0.112	9.1
0.176	0.048	12.2

Major Gammas:

E (MeV)	# per 100 dis
0.321	0.219
0.208	11.0
0.113	6.4

Max. Beta Range in air 126.65 cm or 4.16 ft

Max. Beta Range in water 0.16cm

Avg. gamma E = 0.175 MeV

Half – life: 6.73 days

Gamma constant: 0.1 mR/hr per mCi at 30 cm

Radiological data:

Min. Ingestion ALI: 3000μCi equals rem TEDE (Whole Body)
2000μCi equals rem CEDE (LLI wall)

Min. Inhalation ALI: 2000μCi equals rem TEDE (Whole Body)

Doses:

Skin Dose: Reported for 1 μCi over 10 cm^2 of skin
1.82 mrad/hr (gamma dose)

Point Source: 483 mrad/hr (beta dose)

Disk Source: 483 mrad/hr (beta dose)

Shielding data:

Max. range for beta:	Plastic	=	0.14 cm
	Aluminum	=	0.06 cm
Tenth Value Thickness for average gamma:	Concrete	=	cm
	Lead	=	cm

Detection Information: Usable Detectors listed with estimated efficiencies
(Use efficiencies listed on instrument when available)

Ludlum 3 with pancake probe at 1 cm: % **Liq. Scint. Counter:** %

Ludlum 3 with NaI probe near surface: % **Gamma Counter:** %

Action Quantities:

Bench top quantity must be less than	20000 μCi
Containers require labeling when greater than	100 μCi
Rooms require posting when there is greater than	1000 μCi
Contamination lasting more than 24 hrs require NRC notification when greater than	10000 μCi