RADIONUCLIDE DATA SHEET
Calcium – 47

Ca – 47 20 protons 27 neutrons

Radiation: **Decay mode:** Beta

Major Betas:

Max E (MeV)	Avg E (MeV)	# per 100 dis
0.690	0.241	82
1.988	0.817	18

Max. Beta Range in air 841 cm or 27.59 ft
Max. Beta Range in water 0.97 cm

Major Gammas:

E (MeV)	# per 100 dis
0.489	7
0.808	7
1.297	75

Avg. gamma E = 1.20 MeV

Half – life: 4.5 days

Gamma constant: 6.5 mR/hr per 1 mCi at 30 cm

Radiological data:

Min. Ingestion ALI: 800 μCi equals 5 rem TEDE (Whole Body)
Min. Inhalation ALI: 900 μCi equals 5 rem TEDE (Whole Body)

Doses:

Skin Dose: Reported for 1 μCi over 10 cm^2 of skin
17.7 mrad/hr (gamma dose)
Point Source: 570 mrad/hr (beta dose)
Disk Source: 572 mrad/hr (beta dose)

Shielding data:

Max. range for beta:	Plastic	=	0.97 cm
	Aluminum	=	0.45 cm
Tenth Value Thickness for	Concrete	=	17 cm
average gamma:	Lead	=	3.2 cm

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

Ludlum 3 with pancake probe at 1 cm:	9 %	**Liq. Scint. Counter:**	80 %
Ludlum 3 with NaI probe near surface:	1 %	**Gamma Counter:**	8 %

Action Quantities:

Bench top quantity must be less than	8000 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	4000 μCi

Updated – 08/02/2005