RADIONUCLIDE DATA SHEET
Copper – 64

Cu – 64 29 protons 35 neutrons

Radiation: **Decay mode:** E.C. (61%); Beta (39%)

Major Betas:

Max E (MeV)	Avg E (MeV)	# per 100 dis
0.578	0.19	37
Major Positrons:		
0.653	0.278	18

Max. Beta Range in air 240 cm or 7.87 ft
Max. Beta Range in water 0.25 cm

Major Gammas:

E (MeV)	# per 100 dis
1.346	0.5

Avg. gamma E = 1.346 MeV

Half – life: 12.701 hours or 5.29E-01 days

Gamma constant: 1.47 mR/hr per 1 mCi at 30 cm

Radiological data:

Min. Ingestion ALI: 10000 μCi equals 5 rem TEDE (Whole Body)
Min. Inhalation ALI: 20000 μCi equals 5 rem TEDE (Whole Body)

Doses:

Skin Dose: Reported for 1 μCi over 10 cm^2 of skin
13.3 mrad/hr (gamma dose)
Point Source: 320 mrad/hr (beta dose)
Disk Source: 321 mrad/hr (beta dose)

Shielding data:

Max. range for beta:	Plastic	=	0.25 cm
	Aluminum	=	0.1 cm
Tenth Value Thickness for average gamma:	Concrete	=	18 cm
	Lead	=	3.5 cm

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

Ludlum 3 with pancake probe at 1 cm:	6 %	**Liq. Scint. Counter:**	60 %
Ludlum 3 with NaI probe near surface:	<1 %	**Gamma Counter:**	<1 %

Action Quantities:

Bench top quantity must be less than	100000 μCi
Containers require labeling when greater than	1000 μCi
Rooms require posting when there is greater than	10000 μCi
Contamination lasting more than 24 hrs require NRC notification when greater than	50000 μCi

Updated – 08/02/2005