

RADIONUCLIDE DATA SHEET

[**CADMIUM**]

Cd-109

48 protons

61 neutrons

Half Life: 462.6 days

Radiation: Decay Mode: Electron Capture

Gamma Constant: 0.198mR/hr per 1 mCi at 30 cm

Major Gammas:

E(MeV)	# per 100 Dis
0.088	3.70
0.0219	28.9
0.0221	54.5

Max. Beta Range in Air : N/A cm

Max. Beta Range in Water : N/A cm

Average gamma E = 0.09 MeV

Intake Data (annual):

Minimum Ingestion: 400 μ Ci equals 5 rem TEDE (WHOLE BODY)

300 μ Ci equals 50 rem CEDE (Kidneys)

Minimum Inhalation: 50 μ Ci equals 5 rem TEDE (WHOLE BODY)

40 μ Ci equals 50 rem CEDE (Kidneys)

Doses:

Skin Dose: Reported for 1 μ Ci over 10 cm² of skin

32.1 mrad/hr (gamma dose)

Point Source: 0 mrad/hr (beta dose)

Disk Source: 0 mrad/hr (beta dose)

Shielding Information:

Maximum Range For Beta	Plastic	N/A cm
	Aluminum	N/A cm
Tenth Value Thickness For Average Gamma:	Concrete	0 cm
	Lead	0 cm

Detection information: Usable Detectors listed with estimate efficiencies

Ludlum 3 w/ pancake probe at 1 cm	%	Liq. Scint. Counter	%
Ludlum 3 w/ NaI probe near surface	%	Gamma Counter	%

Action Quantities:

Bench Top Quantity Must Be Less Than	400 μ Ci
Containers Require Labeling When Greater Than	1 μ Ci
Rooms Require Posting When There Is Greater Than	10 μ Ci
Contamination Lasting More than 24 hrs Require NRC Notification At	200 μ Ci