

# 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 µCi equals 5 rem TEDE (WHOLE BODY)

300 µCi equals 50 rem CEDE (Kidneys)

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

40 µCi equals 50 rem CEDE (Kidneys)

## **Doses:**

**Skin Dose:** Reported for 1 µCi over 10 cm<sup>2</sup> 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 µCi
Containers Require Labeling When Greater Than	1 µCi
Rooms Require Posting When There Is Greater Than	10 µCi
Contamination Lasting More than 24 hrs Require NRC Notification At	200 µCi