

RADIONUCLIDE DATA SHEET

[BARIUM]

Ba-133

56 protons

77 neutrons

Half Life: 10.51 years

Radiation: Decay Mode: Electron Capture

Gamma Constant: 2.4 mR/hr per 1 mCi at 30 cm

Major Gammas:

E(MeV)	# per 100 Dis
0.081	31.06
0.303	18.33
0.356	62.05

Max. Beta Range in Air : N/A

Max. Beta Range in Water : N/A cm

Average gamma E = 0.266 MeV

Intake Data (annual):

Minimum Ingestion: 2000 μ Ci equals 5 rem TEDE (WHOLE BODY)

Minimum Inhalation: 700 μ Ci equals 5 rem TEDE (WHOLE BODY)

Doses:

Skin Dose: Reported for 1 μ Ci over 10 cm² of skin
32.9 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	0.07 cm
	Aluminum	0.03 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	7000 μ Ci
Containers Require Labeling When Greater Than	100 μ Ci
Rooms Require Posting When There Is Greater Than	1000 μ Ci
Contamination Lasting More than 24 hrs Require NRC Notification At	3500 μ Ci