# 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 μCi equals 5 rem TEDE (WHOLE BODY) Minimum Inhalation: 700 μCi equals 5 rem TEDE (WHOLE BODY)

#### Doses:

Skin Dose: Reported for 1 μCi over 10 cm<sup>2</sup> 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	Concrete	0 cm
Average Gamma:	Lead	0 cm

## **<u>Detection information:</u>** Usable Detectors listed with estimate efficiencies

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

## **Action Quantities:**

Bench Top Quantity Must Be Less Than	7000 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 At	3500 μCi