

# RADIONUCLIDE DATA SHEET

[BROMINE]

Br-82

35 protons

47 neutrons

**Half Life:** 1.47 years

**Radiation:** Decay Mode: Beta

**Gamma Constant:** 18 mR/hr per 1 mCi at 30 cm

**Major Betas:**

Max E(MeV)	Avg E (MeV)	# per 100 dis
0.265	0.076	1
0.444	0.138	98

Max. Beta Range in Air : 140 cm  
Max. Beta Range in Water : 0.15 cm

**Major Gammas:**

E(MeV)	# per 100 Dis
0.554	71
0.619	43
0.776	83

Average gamma E = 0.802 MeV

**Intake Data (annual):**

Minimum Ingestion: 3000  $\mu$ Ci equals 5 rem TEDE (WHOLE BODY)

Minimum Inhalation: 4000  $\mu$ Ci equals 5 rem TEDE (WHOLE BODY)

**Doses:**

**Skin Dose:** Reported for 1  $\mu$ Ci over 10 cm<sup>2</sup> of skin  
46.6 mrad/hr (gamma dose)  
Point Source: 466 mrad/hr (beta dose)  
Disk Source: 468 mrad/hr (beta dose)

**Shielding Information:**

Maximum Range For Beta	Plastic	0.15 cm
	Aluminum	0.07 cm
Tenth Value Thickness For Average Gamma:	Concrete	13.1 cm
	Lead	2.3 cm

**Detection information:** Usable Detectors listed with estimate efficiencies

Ludlum 3 w/ pancake probe at 1 cm	9%	Liq. Scint. Counter	80%
Ludlum 3 w/ NaI probe near surface	4%	Gamma Counter	65%

**Action Quantities:**

Bench Top Quantity Must Be Less Than	30000 $\mu$ Ci
Containers Require Labeling When Greater Than	100 $\mu$ Ci
Rooms Require Posting When There Is Greater Than	1000 $\mu$ Ci
Contamination Lasting More than 24 hrs Require NRC Notification At	15000 $\mu$ Ci