

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 μ Ci equals 5 rem TEDE (WHOLE BODY)

Minimum Inhalation: 4000 μ Ci equals 5 rem TEDE (WHOLE BODY)

Doses:

Skin Dose: Reported for 1 μ Ci over 10 cm² 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 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	15000 μ Ci