

RADIONUCLIDE DATA SHEET

[POTASSIUM]

K-42

19 protons

23 neutrons

Half Life: 12.36 hours

Radiation: Decay Mode: Beta

Gamma Constant: 1.59 mR/hr per 1 mCi at 30 cm

Major Betas:

Max E(MeV)	Avg E (MeV)	# per 100 dis
1.684	0.701	0.3
1.996	0.822	18
3.521	1.564	82

Max. Beta Range in Air : 1505 cm

Max. Beta Range in Water : 1.8 cm

Major Gammas:

E(MeV)	# per 100 Dis
0.313	0.3
1.525	18

Average gamma E = 1.500 MeV

Intake Data (annual):

Minimum Ingestion: 5000 μ Ci equals 5 rem TEDE (WHOLE BODY)

Minimum Inhalation: 5000 μ Ci equals 5 rem TEDE (WHOLE BODY)

Doses:

Skin Dose: Reported for 1 μ Ci over 10 cm² of skin
4.35 mrad/hr (gamma dose)

Point Source: 738 mrad/hr (beta dose)

Disk Source: 736 mrad/hr (beta dose)

Shielding Information:

Maximum Range For Beta	Plastic	1.8 cm
	Aluminum	0.82 cm
Tenth Value Thickness For Average Gamma:	Concrete	19 cm
	Lead	3.9 cm

Detection information: Usable Detectors listed with estimate efficiencies

Ludlum 3 w/ pancake probe at 1 cm	16%	Liq. Scint. Counter	85%
Ludlum 3 w/ NaI probe near surface	1%	Gamma Counter	7%

Action Quantities:

Bench Top Quantity Must Be Less Than	50000 μ Ci
Containers Require Labeling When Greater Than	1000 μ Ci
Rooms Require Posting When There Is Greater Than	10000 μ Ci
Contamination Lasting More than 24 hrs Require NRC Notification At	25000 μ Ci