

RADIONUCLIDE DATA SHEET

[YTTTRIUM]

Y-88

39 protons

49 neutrons

Half Life: 103.7 days

Radiation: Decay Mode: Electron Capture

Gamma Constant: 19.8 mR/hr per 1 mCi at 30 cm

Major Positrons:

Max E(MeV)	Avg E (MeV)	# per 100 dis
0.755	0.355	0.2

Major Gammas:

E(MeV)	# per 100 Dis
0.898	93
1.836	99
2.734	0.6

Max. Beta Range in Air : 290 cm

Max. Beta Range in Water : 0.31 cm

Average gamma E = 1.060 MeV

Intake Data (annual):

Minimum Ingestion: 1000 μ Ci equals 5 rem TEDE (WHOLE BODY)

Minimum Inhalation: 200 μ Ci equals 5 rem TEDE (WHOLE BODY)

Doses:

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

Point Source: 1.45 mrad/hr (beta dose)

Disk Source: 1.47 mrad/hr (beta dose)

Shielding Information:

Maximum Range For Beta	Plastic	0.31 cm
	Aluminum	0.15 cm
Tenth Value Thickness For Average Gamma:	Concrete	15.7 cm
	Lead	2.9 cm

Detection information: Usable Detectors listed with estimate efficiencies

Ludlum 3 w/ pancake probe at 1 cm	N/A	Liq. Scint. Counter	N/A
Ludlum 3 w/ NaI probe near surface	2%	Gamma Counter	10%

Action Quantities:

Bench Top Quantity Must Be Less Than	2000 μ Ci
Containers Require Labeling When Greater Than	10 μ Ci
Rooms Require Posting When There Is Greater Than	100 μ Ci
Contamination Lasting More than 24 hrs Require NRC Notification At	1000 μ Ci