RADIONUCLIDE DATA SHEET [YTTRIUM]

University of California San Diego

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

Max. Beta Range in Air : 290 cm
Max. Beta Range in Water : 0.31 cm

Major Gammas:

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

Average gamma E = 1.060 MeV

Intake Data (annual):

Minimum Ingestion: 1000 µCi equals 5 rem TEDE (WHOLE BODY)
Minimum Inhalation: 200 µCi equals 5 rem TEDE (WHOLE BODY)

Doses:

Skin Dose: Reported for 1 µCi 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 µCi
Containers Require Labeling When Greater Than	10 µCi
Rooms Require Posting When There Is Greater Than	100 µCi
Contamination Lasting More than 24 hrs Require NRC Notification At	1000 µCi