



# RADIONUCLIDE DATA SHEET

## Yttrium – 88



**Y – 88**      39 protons    49 neutrons

**Radiation:**      **Decay mode:** Electron Capture

**Major Positrons:**

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

Max. Beta Range in air      290 cm    or    9.51 ft  
 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

**Avg. gamma E =** 1.060 MeV

**Half – life:**                    103.6 days

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

**Radiological data:**

**Min. Ingestion ALI:**    1000  $\mu$ Ci equals 5 rem TEDE (Whole Body)  
**Min. Inhalation ALI:**    200  $\mu$ Ci equals 5 rem TEDE (Whole Body)

**Doses:**

**Skin Dose:**                    Reported for 1  $\mu$ Ci over 10 cm<sup>2</sup> 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 data:**

<b>Max. range for beta:</b>	Plastic	=	0.31 cm
	Aluminum	=	0.15 cm
<b>Tenth Value Thickness for average gamma:</b>	Concrete	=	15.7 cm
	Lead	=	2.9 cm

**Detection Information:**    Usable Detectors listed with estimated efficiencies  
 (Use efficiencies listed on instrument when available)

<b>Ludlum 3 with pancake probe at 1 cm:</b>	Not known	<b>Liq. Scint. Counter:</b>	Not known
<b>Ludlum 3 with NaI probe near surface:</b>	2 %	<b>Gamma Counter:</b>	10 %

**Action Quantities:**

Bench top quantity must be less than	2000 $\mu$ Ci
Containers require labeling when greater than	10 $\mu$ Ci
Rooms require posting when there is greater than	100 $\mu$ Ci
Contamination lasting more than 24 hrs require NRC notification when greater than	1000 $\mu$ Ci