

RADIONUCLIDE DATA SHEET

[THORIUM]

Th-228

90protons

138neutrons

Half Life: 1.9116 years

Radiation: Decay Mode: Alpha

Gamma Constant: 0.615E-2 mR/hr per 1 mCi at 30 cm

Major Alpha:

E(MeV)	Avg E (MeV)	# per 100 dis
5.423		72.2
5.340		27.2
5.211		0.420

Max. Beta Range in Air : N/A cm

Max. Beta Range in Water : N/A cm

Major Gammas:

E(MeV)	# per 100 Dis
0.084	1.22
0.132	0.13
0.215	0.25

Average gamma E = 0.108 MeV

Intake Data (annual):

Minimum Ingestion: 10 μ Ci equals 5 rem TEDE (WHOLE BODY)

6 μ Ci equals 50 rem CEDE (Bone Surf)

Minimum Inhalation: 0.02 μ Ci equals 5 rem TEDE (WHOLE BODY)

0.01 μ Ci equals 50 rem CEDE (Bone Surf)

Doses:

Skin Dose: Reported for 1 μ Ci over 10 cm² of skin

1.45 mrad/hr (gamma dose)

Point Source: 0 mrad/hr (beta dose)

Disk Source: 0 mrad/hr (beta dose)

Shielding Information:

Maximum Range For Beta	Plastic	N/A cm
	Aluminum	N/A cm
Tenth Value Thickness For Average Gamma:	Concrete	cm
	Lead	cm

Detection information: Usable Detectors listed with estimate efficiencies

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

Action Quantities:

Bench Top Quantity Must Be Less Than	.10 μ Ci
Containers Require Labeling When Greater Than	0.001 μ Ci
Rooms Require Posting When There Is Greater Than	0.01 μ Ci
Contamination Lasting More than 24 hrs Require NRC Notification At	0.05 μ Ci