

RADIONUCLIDE DATA SHEET

[**THALLIUM**]

TI-201

81 protons

120 neutrons

Half Life: 3.038 days

Radiation: Decay Mode: Electron Capture

Gamma Constant: 0.97 mR/hr per 1 mCi at 30 cm

Major Gammas:

E(MeV)	# per 100 Dis
0.135	3
0.166	0.2
0.167	10

Max. Beta Range in Air : N/A cm

Max. Beta Range in Water : N/A cm

Average gamma E = 0.063 MeV

Intake Data (annual):

Minimum Ingestion: 20000 μ Ci equals 5 rem TEDE (WHOLE BODY)

Minimum Inhalation: 20000 μ Ci equals 5 rem TEDE (WHOLE BODY)

Doses:

Skin Dose: Reported for 1 μ Ci over 10 cm² of skin
12.8 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	0 cm
	Aluminum	0 cm
Tenth Value Thickness For Average Gamma:	Concrete	4.7 cm
	Lead	0.11 cm

Detection information: Usable Detectors listed with estimate efficiencies

Ludlum 3 w/ pancake probe at 1 cm	<1%	Liq. Scint. Counter	N/A
Ludlum 3 w/ NaI probe near surface	1%	Gamma Counter	20%

Action Quantities:

Bench Top Quantity Must Be Less Than	200000 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	100000 μ Ci