

RADIONUCLIDE DATA SHEET

[GADOLINIUM]

Gd-153

64 protons

89 neutrons

Half Life: 240.4 days

Radiation: Decay Mode: Electron Capture

Gamma Constant: 0.582 mR/hr per 1 mCi at 30 cm

Major Gammas:

E(MeV)	# per 100 Dis
0.070	8.34
0.097	100
0.103	72.8

Max. Beta Range in Air : N/A cm

Max. Beta Range in Water : N/A cm

Average gamma E = 0.098 MeV

Intake Data (annual):

Minimum Ingestion: 5000 μ Ci equals 5 rem TEDE (WHOLE BODY)

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

100 μ Ci equals 50 rem CEDE (Bone surface)

Doses:

Skin Dose: Reported for 1 μ Ci over 10 cm² of skin
20.2 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	0 cm
	Lead	0 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	1000 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	500 μ Ci