

RADIONUCLIDE DATA SHEET

[**IODINE**]

I-131

53 protons

78 neutrons

Half Life: 8.04 days

Radiation: Decay Mode: Beta

Gamma Constant: 3.14 mR/hr per 1 mCi at 30 cm

Major Betas:

Max E(MeV)	Avg E (MeV)	# per 100 dis
0.248	0.07	2.12
0.334	0.097	7
0.606	0.192	89

Max. Beta Range in Air : 390 cm

Max. Beta Range in Water : 0.42 cm

Major Gammas:

E(MeV)	# per 100 Dis
0.284	6
0.364	81
0.637	7

Average gamma E = 0.407 MeV

Intake Data (annual):

Minimum Ingestion: 90 μ Ci equals 5 rem TEDE (WHOLE BODY)

30 μ Ci equals 50 rem CEDE (Thyroid)

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

50 μ Ci equals 50 rem CEDE (Thyroid)

Doses:

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

7.70 mrad/hr (gamma dose)

Point Source: 523 mrad/hr (beta dose)

Disk Source: 525 mrad/hr (beta dose)

Shielding Information:

Maximum Range For Beta	Plastic	0.3 cm
	Aluminum	0.11 cm
Tenth Value Thickness For Average Gamma:	Concrete	10 cm
	Lead	0.76 cm

Detection information: Usable Detectors listed with estimate efficiencies

Ludlum 3 w/ pancake probe at 1 cm	9%	Liq. Scint. Counter	85%
Ludlum 3 w/ NaI probe near surface	2%	Gamma Counter	65%

Action Quantities:

Bench Top Quantity Must Be Less Than	300 μ Ci
Containers Require Labeling When Greater Than	1 μ Ci
Rooms Require Posting When There Is Greater Than	10 μ Ci
Contamination Lasting More than 24 hrs Require NRC Notification At	150 μ Ci