RADIONUCLIDE DATA SHEET
Iodine – 131

I – 131 53 protons 78 neutrons

Radiation: **Decay mode:** Beta

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 or 12.8 ft
Max. Beta Range in water 0.42 cm

Major Gammas:

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

Avg. gamma E = 0.407 MeV

Half – life: 8.04 days

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

Radiological data:

Min. Ingestion ALI: 90 μCi equals 5 rem TEDE (Whole Body)
30 μCi equals 50 rem CEDE (Thyroid)

Min. Inhalation ALI: 200 μCi equals 5 rem TEDE (Whole Body)
50 μCi equals 50 rem CEDE (Thyroid)

Doses:

Skin Dose: Reported for 1 μCi over 10 cm^2 of skin
7.70 mrad/hr (gamma dose)

Point Source: 523 mrad/hr (beta dose)

Disk Source: 525 mrad/hr (beta dose)

Shielding data:

Max. 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 estimated efficiencies
(Use efficiencies listed on instrument when available)

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

Action Quantities:

Bench top quantity must be less than	300 μCi
Containers require labeling when greater than	1 μCi
Rooms require posting when there is greater than	10 μCi
Contamination lasting more than 24 hrs require NRC notification when greater than	150 μCi

Updated – 08/02/2005