

RADIONUCLIDE DATA SHEET

[FLUORINE]

F-18

9 protons

9 neutrons

Half Life: 109.74 minutes

Radiation: Decay Mode: Electron Capture

Gamma Constant: 7.72 mR/hr per 1 mCi at 30 cm

Major Positrons:

Max E(MeV)	Avg E (MeV)	# per 100 dis
0.633	0.250	97

Major Gammas:

E(MeV)	# per 100 Dis
0.511	194

Max. Beta Range in Air : 178 cm

Max. Beta Range in Water : 0.02 cm

Average gamma E = 0.511 MeV

Intake Data (annual):

Minimum Ingestion: 50000 μ Ci equals 5 rem TEDE (WHOLE BODY)

Minimum Inhalation: 70000 μ Ci equals 5 rem TEDE (WHOLE BODY)

Doses:

Skin Dose: Reported for 1 μ Ci over 10 cm² of skin
177 mrad/hr (gamma dose)

Point Source: 5400 mrad/hr (beta dose)

Disk Source: 5400 mrad/hr (beta dose)

Shielding Information:

Maximum Range For Beta	Plastic	0.17 cm
	Aluminum	0.1 cm
Tenth Value Thickness For Average Gamma:	Concrete	11.5 cm
	Lead	1.37 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	1%	Gamma Counter	25%

Action Quantities:

Bench Top Quantity Must Be Less Than	500000 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	250000 μ Ci