RADIONUCLIDE DATA SHEET
Plutonium

Pu-239 94 protons 145 neutrons

Radiation: **Decay mode:** Alpha

Major Alpha:

E (MeV)	# per 100 dis
5.157	73.3
5.144	15.1
5.106	11.5

Major Gammas:

E (MeV)	# per 100 dis
0.375	1.55E-3
0.413	1.47E-3
0.099	1.22E-3

Max. Beta Range in air N/A cm or N/A ft
Max. Beta Range in water N/A cm

Avg. gamma E = 0.309 MeV

Half – life: 2144000 years

Gamma constant: 0.338E-4 mR/hr per mCi at 30 cm

Radiological data:

Min. Ingestion ALI: 1μCi equals 5rem TEDE (Whole Body)
0.8μCi equals 50rem CEDE (Bone surf)

Min. Inhalation ALI: 0.01μCi equals 5rem TEDE (Whole Body)
0.006μCi equals 50rem CEDE (Bone surf)

Doses:

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

Point Source: 0 mrad/hr (beta dose)

Disk Source: 0 mrad/hr (beta dose)

Shielding data:

Max. range for beta: Plastic = N/A cm
Aluminum = N/A cm

Tenth Value Thickness for average gamma: Concrete = cm
Lead = cm

Detection Information: Usable Detectors listed with estimated efficiencies
(Use efficiencies listed on instrument when available)

Ludlum 3 with pancake probe at 1 cm: %
Ludlum 3 with NaI probe near surface: %
Liq. Scint. Counter: %
Gamma Counter: %

Action Quantities:

Bench top quantity must be less than	0.06 μCi
Containers require labeling when greater than	0.001 μCi
Rooms require posting when there is greater than	0.01 μCi
Contamination lasting more than 24 hrs require NRC notification when greater than	0.03 μCi