



RADIONUCLIDE DATA SHEET

Xenon



Xe-133 54 protons 79 neutrons

Radiation: Decay mode: Beta

Major Betas:

Max E (MeV)	Avg E (MeV)	# per 100 dis
0.346	0.1	99
0.267	0.075	0.81
0.044	0.011	0.0076

Major Gammas:

E (MeV)	# per 100 dis
0.080	0.27
0.081	38
0.161	0.066

Max. Beta Range in air 74.74 cm or 2.45 ft
 Max. Beta Range in water 0.1cm

Avg. gamma E = 0.081 MeV

Half – life: 5.243 days

Gamma constant: 0.111 mR/hr per mCi at 30 cm

Radiological data: **Min. Ingestion ALI:** No Limit Given

Min. Inhalation ALI: No Limit Given

Doses:

Skin Dose: Reported for 1 μ Ci over 10 cm² of skin
 9.72 mrad/hr (gamma dose)
Point Source: 391 mrad/hr (beta dose)
Disk Source: 390 mrad/hr (beta dose)

Shielding data: **Max. range for beta:** Plastic = 0.08 cm
 Aluminum = 0.04 cm
 Tenth Value Thickness for Concrete = cm
 average gamma: 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: %	Liq. Scint. Counter: %
Ludlum 3 with NaI probe near surface: %	Gamma Counter: %

Action Quantities:

Bench top quantity must be less than	N/A μ Ci
Containers require labeling when greater than	1,000 μ Ci
Rooms require posting when there is greater than	10000 μ Ci
Contamination lasting more than 24 hrs require NRC notification when greater than	N/A μ Ci