RADIONUCLIDE DATA SHEET
Cerium

Ce-144 58 protons 86 neutrons

Radiation: **Decay mode:** Beta

Major Betas:

Max E (MeV)	Avg E (MeV)	# per 100 dis
0.318	0.091	76.5
0.238	0.066	3.9
0.185	0.05	19.6

Major Gammas:

E (MeV)	# per 100 dis
0.041	0.257
0.08	1.364
0.134	11.09

Max. Beta Range in air 65.99 cm or 2.17 ft

Max. Beta Range in water 0.09 cm

Avg. gamma E = 0.130 MeV

Half – life: 284.893 days

Gamma constant: 0.444 mR/hr per mCi at 30 cm

Radiological data:

Min. Ingestion ALI: 300μCi equals 5rem TEDE (Whole Body)
200μCi equals 50rem CEDE (LLI wall)

Min. Inhalation ALI: 10μCi equals 5rem TEDE (Whole Body)

Doses:

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

Point Source: 335 mrad/hr (beta dose)

Disk Source: 335 mrad/hr (beta dose)

Shielding data:

Max. range for beta: Plastic = 0.07 cm
Aluminum = 0.05 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	100 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	50 μCi