RADIONUCLIDE DATA SHEET [CERIUM]

Ce-144 — 58 protons — 86 neutrons

Half Life: 284.893 days
Radiation: Decay Mode: Beta
Gamma Constant: 0.444mR/hr per 1 mCi at 30 cm

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

Max. Beta Range in Air : 65.99 cm
Max. Beta Range in Water : 0.09 cm

Major Gammas:

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

Average gamma E = 0.130 MeV

Intake Data (annual):

Minimum Ingestion: 300 µCi equals 5 rem TEDE (WHOLE BODY)
200 µCi equals 50 rem CEDE (LLI wall)
Minimum Inhalation: 10 µCi equals 5 rem TEDE (WHOLE BODY)

Doses:

Skin Dose: Reported for 1 µCi over 10 cm² of skin
2.05 mrad/hr (gamma dose)
Point Source: 335 mrad/hr (beta dose)
Disk Source: 335 mrad/hr (beta dose)

Shielding Information:

Maximum Range For Beta	Plastic	0.07 cm
	Aluminum	0.05 cm
Tenth Value Thickness For Average Gamma:	Concrete	0 cm
	Lead	0 cm

Detection information: Usable Detectors listed with estimate efficiencies

Ludlum 3 w/ pancake probe at 1 cm	%	Liq. Scint. Counter	%
Ludlum 3 w/ NaI probe near surface	%	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 At	50 µCi