RADIONUCLIDE DATA SHEET [CERIUM]

University of California San Diego

Ce-141 — 58 protons — 83 neutrons

Half Life: 32.501 days
Radiation: Decay Mode: Beta
Gamma Constant: 0.39mR/hr per 1 mCi at 30 cm

Major Betas:

Max E(MeV)	Avg E (MeV)	# per 100 dis
0.582	0.181	29.8
0.437	0.13	70.2

Max. Beta Range in Air : 104.6 cm
Max. Beta Range in Water : 0.13 cm

Major Gammas:

E(MeV)	# per 100 Dis
0.145	48.2

Average gamma E = 0.145 MeV

Intake Data (annual):

Minimum Ingestion: 2000 µCi equals 5 rem TEDE (WHOLE BODY)
2000 µCi equals 50 rem CEDE (LLI wall)
Minimum Inhalation: 600 µCi equals 5 rem TEDE (WHOLE BODY)

Doses:

Skin Dose: Reported for 1 µCi over 10 cm² of skin
3.75 mrad/hr (gamma dose)
Point Source: 599 mrad/hr (beta dose)
Disk Source: 599 mrad/hr (beta dose)

Shielding Information:

Maximum Range For Beta	Plastic	0.11 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	6000 µCi
Containers Require Labeling When Greater Than	100 µCi
Rooms Require Posting When There Is Greater Than	1000 µCi
Contamination Lasting More than 24 hrs Require NRC Notification At	3000 µCi