

# RADIONUCLIDE DATA SHEET

[CESIUM]

Cs-137

55 protons

82 neutrons

**Half Life:** 30.17 years

**Radiation:** Decay Mode: Beta

**Gamma Constant:** 4.24 mR/hr per 1 mCi at 30 cm

**Major Betas:**

Max E(MeV)	Avg E (MeV)	# per 100 dis
0.512	0.157	95
1.173	0.415	5

**Major Gammas:**

E(MeV)	# per 100 Dis
0.662	90

Max. Beta Range in Air : 1300 cm

Max. Beta Range in Water : 1.5 cm

Average gamma E = 0.662 MeV

**Intake Data (annual):**

Minimum Ingestion: 100  $\mu$ Ci equals 5 rem TEDE (WHOLE BODY)

Minimum Inhalation: 200  $\mu$ Ci equals 5 rem TEDE (WHOLE BODY)

**Doses:**

**Skin Dose:** Reported for 1  $\mu$ Ci over 10 cm<sup>2</sup> of skin

N/A mrad/hr (gamma dose)

Point Source: 511 mrad/hr (beta dose)

Disk Source: 513 mrad/hr (beta dose)

**Shielding Information:**

Maximum Range For Beta	Plastic	0.53 cm
	Aluminum	0.25 cm
Tenth Value Thickness For Average Gamma:	Concrete	13 cm
	Lead	1.7 cm

**Detection information:** Usable Detectors listed with estimate efficiencies

Ludlum 3 w/ pancake probe at 1 cm	7%	Liq. Scint. Counter	90%
Ludlum 3 w/ NaI probe near surface	4%	Gamma Counter	30%

**Action Quantities:**

Bench Top Quantity Must Be Less Than	1000 $\mu$ Ci
Containers Require Labeling When Greater Than	10 $\mu$ Ci
Rooms Require Posting When There Is Greater Than	100 $\mu$ Ci
Contamination Lasting More than 24 hrs Require NRC Notification At	500 $\mu$ Ci