55-cesium-137

Cesium-137 is used to treat cancers...to measure correct patient dosages of radioactive pharmaceuticals... to measure and control the liquid flow in oil pipelines... to tell researchers whether oil wells are plugged by sand... and to ensure the right fill level for packages of food, drugs and other products. (The products in these packages do not become radioactive.)

- Atomic Mass: 136.9070835 +- 0.0000032 amu
- Excess Mass: -86551.145 +- 2.985 keV
- Binding Energy: 1149292.932 +- 2.991 keV
- Beta Decay Energy: B- 1175.630 +- 0.172 keV

"The 1995 update to the atomic mass evaluation" by G.Audi and A.H.Wapstra, Nuclear Physics A595 vol. 4 p.409-480, December 25, 1995.

- Spin: 7/2+
- Half life: 30.07 years
- Mode of decay: Beta to Ba-137
    - Decay energy: 1.176 MeV

- Possible parent nuclides:
  Beta from Xe-137

R.R.Kinsey, et al.,*The NUDAT/PCNUDAT Program for Nuclear Data*,paper submitted to the 9 th International Symposium of Capture-Gamma_raySpectroscopy and Related Topics, Budapest, Hungary, Octover 1996.Data extracted from NUDAT database (Jan. 14/1999)

Magnetic Dipole Moments and Electric Quadrupole Moments

Ex(kev)	**$T_{1/2}$**	**Spin**	**m(nm)**	**Q(b)**	Ref. Std.	Method	Reference
0	30.17 y	7/2+	+2.8513(7)		[133Cs]	AB/D	PR 105 590 (57)
			+2.838(7)		[133Cs]	CFBLS	PL 79B 209 (78)
			+2.84(1)		[133Cs]	ABLS	NP A367 1 (81)
				+0.051(1) st		"OL, OD, R"	NP A248 157 (75)
				+0.06(2) st		CFBLS	PL 79B 209 (78)
				+0.03(4) st		ABLS	NP A367 1 (81)

N. J. Stone, Table of Nuclear Magnetic Dipole and Electric Quadrupole Moments, to be published. 2000 Courtesy of T. Burrows at BNL/NNDC.