^{238}Cm α decay

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 108, 681 (2007)	1-Jun-2006

Parent: ^{238}Cm: E=0.0; $T_{1/2}$=2.4 h *1*; Q(α)=6620 *40*; %α decay=3.84 *18*

Additional information 1.

^{234}Pu Levels

E(level)	J^π	Comments
0.0		
(46 *3*)	2^+	E(level): the 2^+ state has not been observed. Its energy has been obtained from systematics of 2^+ levels.

α radiations

Eα	E(level)	Iα[†#]	HF[‡]	Comments
(6464 *40*)	(46)	30.5 *8*	1.42 *5*	Eα: α transition has not been observed. Its energy has been calculated from Q(α) and the expected level energy.
6520 *50*	0.0	69.5 *8*	1.0	

† The absolute intensity of 6520α has been estimated here to be 2.67% 12 by requiring an r_0 parameter of 1.4977 *19*. Systematics of hindrance factors for α decays to first 2^+ states suggest that HF for a expected, but unobserved, α particle to the 2^+ state in ^{234}Pu is 1.42 *5*. The Iα's per 100 α decays have been obtained here by requiring Hf(2^+)=1.42 *5*. Iα values to higher levels have been taken to be within the uncertainties given here.

‡ $r_0(^{234}Pu)$=1.4977 *19* has been obtained from $r_0(^{236}Pu)$=1.4949 *18*, $r_0(^{232}U)$=1.5103 *3*, and $r_0(^{234}U)$=1.5075 *2*.

For absolute intensity per 100 decays, multiply by 0.0384 *18*.