^{144}Ho IT decay (506 ns) 2006Ta08

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	21-Feb-2008

Parent: ^{144}Ho: E=265.3 *6*; J^π=(8^+); $T_{1/2}$=506 ns *20*; %IT decay=100.0

2006Ta08 (also 2005Ta31): ^{144}Ho isotope formed by ^{92}Mo(^{54}Fe,np) reaction at 225 MeV. The recoil products were separated in mass/charge ratio by recoil-mass separator (RMS). Measured Eγ, Iγ, $\gamma\gamma$, conversion electrons using two segmented Ge Clover detectors for γ rays and Si(Li) conversion electron spectrometer (BESCA) at Oak Ridge HRIBF.

No evidence has been found for a low-lying 1^+ state as in other nuclides in this mass region.

^{144}Ho Levels

E(level)	J^π[†]	$T_{1/2}$	Comments
0	(5^-)		Configuration=[$\pi h_{11/2}\otimes\nu s_{1/2}$]+[$\pi h_{11/2}\otimes\nu d_{3/2}$].
59.9 *9*	(6^-)		
208.9 *3*	(7^-)		
265.3 *4*	(8^+)	506 ns *20*	Configuration=$\pi h_{11/2}\otimes\nu h_{11/2}$. $T_{1/2}$: from γ(t): weighted average of 564 ns *60* (2006Ta08) and 500 ns *20* (2001Sc09). Other: 455 ns *77* (2005Ta31).

[†] From 'Adopted Levels'.

$\gamma(^{144}Ho)$

Iγ normalization, I(γ+ce) normalization: deduced by the evaluator from Σ(I(γ+ce) of γ's from 209 level)=100.

Theoretical conversion coefficients are from BrIcc code.

E_γ	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α[‡]	$I_{(\gamma+ce)}$[†]	Comments
[x]40.2 *3*	91 *17*								
56.4 *3*	100 *17*	265.3	(8^+)	208.9	(7^-)	E1	1.37	226 *21*	α(exp)<1.3 α for 56.7. This Eγ is too close to K-shell binding energy, thus it is difficult to obtain a reliable α value.
59.9 *9*	13 *3*	59.9	(6^-)	0	(5^-)	M1+E2	17 *6*	176 *76*	α(exp)=13 *5* ce(K)/(γ+ce)=0.34 *16*; ce(L)/(γ+ce)=0.5 *6*; ce(M)/(γ+ce)=0.11 *9*; ce(N+)/(γ+ce)=0.028 *25* ce(N)/(γ+ce)=0.025 *22*; ce(O)/(γ+ce)=0.003 *3*; ce(P)/(γ+ce)=2.1×10^{-5} *15*
148.1 *3*	99 *18*	208.9	(7^-)	59.9	(6^-)	M1+E2	0.77 *9*	176 *50*	α(K)exp=0.69 *15* ce(K)/(γ+ce)=0.31 *7*; ce(L)/(γ+ce)=0.09 *4*; ce(M)/(γ+ce)=0.022 *9*; ce(N+)/(γ+ce)=0.0057 *22* ce(N)/(γ+ce)=0.0050 *20*; ce(O)/(γ+ce)=0.00065 *21*; ce(P)/(γ+ce)=1.7×10^{-5} *8*
208.9 *3*	41 *11*	208.9	(7^-)	0	(5^-)	E2	0.211	50 *13*	ce(K)/(γ+ce)=0.1166 *16*; ce(L)/(γ+ce)=0.0445 *7*; ce(M)/(γ+ce)=0.01050 *16*; ce(N+)/(γ+ce)=0.00269 *5* ce(N)/(γ+ce)=0.00238 *4*; ce(O)/(γ+ce)=0.000299 *5*; ce(P)/(γ+ce)=5.58×10^{-6} *9*

Continued on next page (footnotes at end of table)

^{144}Ho IT decay (506 ns) 2006Ta08 (continued)

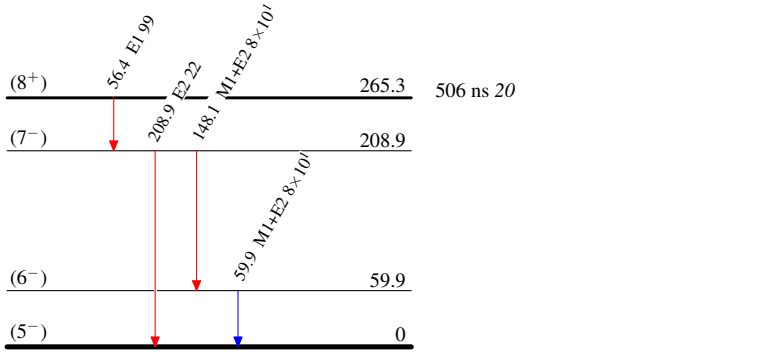
$\gamma(^{144}Ho)$ (continued)

† For absolute intensity per 100 decays, multiply by 0.44 *10*.
‡ Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
^{x} γ ray not placed in level scheme.

^{144}Ho IT decay (506 ns) 2006Ta08

Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
%IT=100.0



$^{144}_{67}Ho_{77}$