^{204}Tl ε decay

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. J. Chiara and F. G. Kondev	NDS 111,141 (2010)	1-Oct-2009

Parent: ^{204}Tl: E=0.0; J^{π}=2$^-$; $T_{1/2}$=3.783 y *12*; Q(ε)=344.3 *13*; %ε decay=2.92 *7*

^{204}Tl-%ε decay: from I(K x ray)=1.64% *4* by 1990Sc08, K fluorescence yield=0.962 *4* from 1996Sc06, and εK/ε=0.5836 *14* (based on Q=344.3 *13* and theory for first forbidden unique ε decay).

Measured εL/εK=0.42 *5* (1961Jo12), 0.41 *3* (1962Le05), 0.48 *4* (1963Ro32), 0.60 *6* (1964Ch17), 0.55 *5* (1966Kl02). From Q value and ε decay theory, εL/εK=0.519 *2*.

Additional information 2.

Q+ deduced from measured εL/εK ratio: 410 *+30−23* (1962Le05, with correction by 1964Ch17), 313 *+17−14* (1964Ch17), 324 *+21−16* (1966Kl02). Q+ from fit to internal bremsstrahlung spectrum: 376 *20* (1956Ju07), 325 *20* (1973La17), 357 *15* for fit with Coulomb-free theory (1979Zi02). End-point energy from internal bremsstrahlung spectrum: 310 *10* (1962Bi04).

Internal bremsstrahlung photons per 100 εK: 3.2×10^{-3} *5* (1973La17), 2.17×10^{-3} *26* (1979Zi02), 2.8×10^{-3} *2* (2003Ku28).

Others: 1967Ha39, 1980La02.

^{204}Hg Levels

E(level)	J^{π}
0	0$^+$

ε radiations

E(decay)	E(level)	I$\varepsilon^{\dagger}$	Log *ft*	Comments
(344.3 *13*)	0	100	9.496^{1u} *13*	εK=0.5836 *14*; εL=0.3029 *10*; εM+=0.1135 *5*

† For absolute intensity per 100 decays, multiply by 0.0292 *7*.