^{174}W ε decay 1985Sz03,1973CaYH

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, Huo Junde	NDS 87, 15 (1999)	1-Nov-1998

Parent: ^{174}W: E=0.0; J$^{\pi}$=0^{+}; $T_{1/2}$=33.2 min *21*; Q(ε)=1856 *SY*; %ε+%β^{+} decay=100.0

Additional information 1.

^{174}W activity produced by ^{138}Ba(^{40}Ar,4n), E=185 MeV, using a target of 99.8% enriched ^{138}Ba. Measured Eγ, Iγ, $\gamma\gamma$ coin, γX coin. Detectors:Ge(Li). γ-ray assignment to ^{174}W was based on coincidence with Ta x-rays, and cross bombardment arguments (*i.e.*, γ ray was not observed when using a ^{136}Ba target).

^{174}W activity produced by ^{165}Ho(^{14}N,5n), E=97.5, 118.0 MeV. Measured Eγ, absolute Iγ (using genetic relationships between members of the decay chain). Detector:Ge(Li) (1985Sz03).

^{174}W activity produced by ^{176}Hf(^{3}He,5n), E=40, 55, and 72 MeV. Target: 77.5% enriched ^{176}Hf. Measured Eγ, Iγ (1973CaYH).

Other measurements:

^{174}W activity produced by ^{12}C on natural Er, E=81 MeV. Tungsten was identified by chemical separation and genetic relationship to the daughter nucleus ^{174}Ta. Measured Eγ, x rays (1965De25).

Mass-separated activity of ^{174}W produced by ^{181}Ta(p,8n) (1964Sa22).

Other: 1973GrYA.

γ(^{174}Ta)

Iγ normalization: experimental value deduced from ^{174}W-^{174}Ta growth and decay curves was 0.095 for Iγ(428γ)=134 (1985Sz03).

E$_{\gamma}$[†]	I$_{\gamma}$[@a]	Comments
^{x}35.42[‡] *8*	120[#] *10*	
^{x}49.84[‡] *8*	22.0[#] *15*	
^{x}61.9[‡] *4*	16.7[#] *14*	
^{x}73.36[‡] *9*	4.8[#] *5*	
^{x}75.88[‡] *12*	1.8[#] *3*	
^{x}96.44[‡] *8*	8.8[#] *9*	
^{x}125.18 *5*	40 *3*	E$_{\gamma}$: weighted average of 125.18 keV *5* (1973CaYH) and 125.0 keV *3* (1990Me12). I$_{\gamma}$: weighted average of 36 *3* (1985Sz03) and 42 *2* (1990Me12). Iγ=65 *6* (1973CaYH).
^{x}136.52 *5*	40 *8*	E$_{\gamma}$: weighted average of 136.52 keV *5* (1973CaYH) and 136.4 keV *3* (1990Me12). I$_{\gamma}$: weighted average of 30.6 *22* (1985Sz03) and 47 *2* (1990Me12). Iγ=63 *5* (1973CaYH).
^{x}143.72 *8*	12.9 *9*	E$_{\gamma}$: weighted average of 143.73 keV *8* (1973CaYH) and 143.6 keV *3* (1990Me12). I$_{\gamma}$: weighted average of 12.5 *8* (1985Sz03) and 15 *2* (1990Me12). Iγ=19 *2* (1973CaYH).
^{x}162.68[&] *8*	6 *1*	E$_{\gamma}$: weighted average of 162.69 keV *8* (1973CaYH) and 162.5 keV *3* (1990Me12). I$_{\gamma}$: weighted average of 5.1 *5* (1985Sz03) and 8 *1* (1990Me12). Iγ=12 *1* (1973CaYH).
^{x}173.96[‡] *16*	4.6[#] *9*	
^{x}181.41[‡&] *9*	<17	
^{x}193.04 *8*	42 *2*	E$_{\gamma}$: weighted average of 193.04 keV *8* (1973CaYH) and 193.0 keV *3* (1990Me12). I$_{\gamma}$: weighted average of 41 *3* (1985Sz03) and 43 *2* (1990Me12). Iγ=46 *4* (1973CaYH).
^{x}202.03 *8*	24 *4*	E$_{\gamma}$: weighted average of 202.04 keV *8* (1973CaYH) and 201.9 keV *3* (1990Me12). I$_{\gamma}$: weighted average of 21 *2* (1985Sz03) and 29 *2* (1990Me12). Iγ=33 *3* (1973CaYH).
^{x}216.36[‡] *19*	5.7[#] *10*	
^{x}233.36 *8*	23 *1*	E$_{\gamma}$: weighted average of 233.37 keV *8* (1973CaYH) and 233.1 keV *4* (1990Me12). I$_{\gamma}$: weighted average of 22 *2* (1985Sz03) and 24 *2* (1990Me12) Iγ=26 *3* (1973CaYH).
^{x}239.4 *3*	9.7 *7*	E$_{\gamma}$: weighted average of 239.51 keV *13* (1973CaYH) and 238.6 keV *4* (1990Me12). I$_{\gamma}$: weighted average of 10 *1* (1985Sz03) and 10 *1* (1990Me12).
^{x}289.81[‡&] *16*	7.9[#] *10*	
^{x}328.68 *7*	70 *3*	E$_{\gamma}$: weighted average of 328.68 keV *7* (1973CaYH) and 328.7 keV *4* (1990Me12). I$_{\gamma}$: weighted average of 75 *5* (1985Sz03) and 69 *3* (1990Me12).
^{x}339.76 *9*	28 *2*	E$_{\gamma}$: weighted average of 339.76 keV *9* (1973CaYH) and 339.8 keV *4* (1990Me12). I$_{\gamma}$: weighted average of 27 *3* (1985Sz03) and 28 *2* (1990Me12).

Continued on next page (footnotes at end of table)

^{174}W ε decay 1985Sz03,1973CaYH (continued)

γ(^{174}Ta) (continued)

E_γ[†]	I_γ[@a]	Comments
[x]354.97[‡] *11*	16.7[#] *18*	
[x]364.54 *10*	29 *2*	Iγ=30 *3* (1973CaYH). E_γ: weighted average of 364.52 keV *10* (1973CaYH) and 364.8 keV *4* (1990Me12). I_γ: weighted average of 28 *2* (1985Sz03) and 29 *2* (1990Me12).
[x]377.07 *10*	43 *2*	E_γ: weighted average of 377.04 keV *10* (1973CaYH) and 377.5 keV *4* (1990Me12). I_γ: weighted average of 40 *3* (1985Sz03) and 44 *2* (1990Me12). Iγ=46 *5* (1973CaYH).
[x]378.56 *9*	66 *2*	E_γ: weighted average of 378.54 keV *9* (1973CaYH) and 379.0 keV *4* (1990Me12). I_γ: weighted average of 65 *5* (1985Sz03) and 66 *2* (1990Me12). Iγ=68 *7* (1973CaYH).
[x]400.45[‡] *97*	7[#] *5*	
[x]428.84 *7*	100 *7*	E_γ: weighted average of 428.83 keV *7* (1973CaYH) and 429.1 keV *4* (1990Me12). From 1985Sz03. Other value: Iγ=100 *9* (1973CaYH).
[x]472.24[‡] *88*	3.5[#] *7*	
[x]547.51[‡] *35*	3.5[#] *7*	
[x]567.57[‡] *42*	3.6[#] *8*	
[x]834.99[‡] *71*	4.6[#] *14*	

[†] From 1973CaYH, unless otherwise specified.
[‡] Reported by 1973CaYH only.
[#] Add 7% in quadrature to uncertainty of absolute Iγ.
[@] From 1973CaYH, unless otherwise specified.
[&] Uncertain γ ray.
[a] For absolute intensity per 100 decays, multiply by 0.1273.
[x] γ ray not placed in level scheme.