Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	T. D. Johnson and W. D. Kulp(a)	NDS 129, 1 (2015)	27-Jul-2015

Q(β^-)=-1.18×10^4 SY; S(n)=1.45×10^4 SY; S(p)=869 6; Q(α)=-1.7×10^3 3 2012Wa38
Uncertainty associated with Q(β^-) is ΔQ(β^-)=400; for S(n) ΔS(n)=300 and Q(εp)=4154 7 (systematics) 2012Wa38.
Mass measurement: 2011Ha08 (shiptrap Penning trap, GSI Darmstadt). Measured mass excess=$-57690.0.8$ 42 keV. More mass
   calculations at 2012Ji07.

^{87}Tc Levels

Cross Reference (XREF) Flags

A	^{58}Ni(^{32}S,2npγ)
B	^{9}Be(^{107}Ag,Xγ)

E(level)	J$^{\pi\dagger}$	T$_{1/2}$	XREF	Comments
0‡	(9/2$^+$)	2.2 s 2	A	%ε+%β^+=100
				T$_{1/2}$: from 2001Ki13; also given by the same authors as 2.4 2 (2000StZU), 1.9 2
				(2000WeZY) and 1.9 $+3-2$ (2000WeZZ).
				%ε+%β^+: assumed by evaluator since Q(α) is negative.
712.0‡ 10	(13/2$^+$)		A	
1599.0‡ 15	(17/2$^+$)		A	
0+x			B	
7+x?			B	
71+x	(7/2$^+$)	647 ns 24	B	%IT=100
				T$_{1/2}$: measured in 2009Ga40 from decay timing of 64γ and 70γ. Other: $\approx$0.7 ns
				(2007Re18).

† From systematics of N=44 odd-Z nuclei, namely, ^{81}Rb, ^{83}Y, and ^{85}Nb.
‡ Band(A): possible g.s. band.

$\gamma(^{87}$Tc)

E$_i$(level)	J$^\pi_i$	E$_\gamma$	E$_f$	J$^\pi_f$	Mult.	$\alpha^\dagger$	Comments
712.0	(13/2$^+$)	712	0	(9/2$^+$)	[E2]	0.00189 3	α=0.00189 3; α(K)=0.001654 24; α(L)=0.000194 3;
							α(M)=3.52×10^{-5} 5; α(N+..)=5.92×10^{-6} 9
							α(N)=5.56×10^{-6} 8; α(O)=3.58×10^{-7} 5
1599.0	(17/2$^+$)	887	712.0	(13/2$^+$)	[E2]	0.001094 16	α=0.001094 16; α(K)=0.000959 14; α(L)=0.0001107 16;
							α(M)=2.00×10^{-5} 3; α(N+..)=3.39×10^{-6}
							α(N)=3.18×10^{-6} 5; α(O)=2.08×10^{-7} 3
71+x	(7/2$^+$)	64‡	7+x?				
		71‡	0+x				

† 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.
‡ Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Legend

Level Scheme

- - - - - ▶   γ Decay (Uncertain)

(7/2+)	71 64 887 [E2]	71+x	647 ns *24*
		7+x	
		0+x	
(17/2+)		1599.0	
(13/2+)	712 [E2]	712.0	
(9/2+)		0	2.2 s *2*
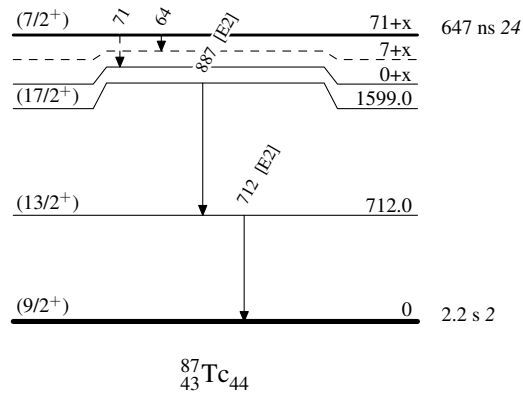
$^{87}_{43}\text{Tc}_{44}$

Adopted Levels, Gammas

Band(A): Possible g.s. band

$(17/2^+)$ 1599.0

887

$(13/2^+)$ 712.0

712

$(9/2^+)$ 0

$^{87}_{43}Tc_{44}$