^{93}Nb(d,t), (d,tγ) 1971Bh01

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 113, 2187 (2012)	15-Sep-2012

$J^\pi(^{93}Nb)=9/2^+$.

Other measurements: 1964Sh04, 1964Ha53.

1971Bh01: E(d)=17,9 MeV; FWHM≈8 keV; θ=7.5°−52.5°; measured σ(E,θ), Eγ, t-γ coin.

^{92}Nb Levels

E(level)†	Jπ@	L‡	C²S#	Comments
0.0	7^+	2	0.74	Jπ: from Adopted Levels.
136.0[a] *15*	2^+	2	0.38	
286.0[a] *12*	3^+	2	0.24	
357.0[a] *5*	5^+	2	0.22	
480.0[a] *10*	4^+	2	0.18	
500.0[a] *5*	6^+	2	0.18	
1086[c] *5*				
1343 *7*		(4)		
1374 *7*		2	0.005	
1407 *7*		0	0.05	
1479 *7*		(0)	0.001	
1565 *8*		2	0.005	
1609 *8*		0	0.034	
1631 *8*		0	0.01	
1647 *8*		0	0.01	
1720 *9*		1	0.005	
1766 *9*		2	0.02	
1833 *9*		0	0.015	
1905? *10*				
2035 *10*		2	0.013	
2058 *10*		0	0.003	
2089 *10*		1	0.005	
2127[c] *11*				
2147[&] *11*		1	0.025	
2162 *11*		(2+4)		
2213 *11*		(2+4)		
2248 *11*		*b*	*b*	
2255 *11*		*b*	*b*	
2271 *11*		1	0.006	
2286 *11*			0.10	
2300 *12*		*b*	*b*	
2311 *12*		*b*	*b*	
2366 *12*		(2)		
2394 *12*		1	0.02	
2407 *12*		1	0.005	
2464 *12*		(0)	0.002	
2502 *13*		*b*	*b*	
2515 *13*		*b*	*b*	
2568 *13*		4	0.044	
2602 *13*		(4)	0.10	
2613 *13*		(4)		
2660 *13*		(2)	0.015	
2680 *13*		4	0.15	
2700 *14*		(2+4)		

Continued on next page (footnotes at end of table)

^{93}Nb(d,t), (d,tγ) 1971Bh01 (continued)

^{92}Nb Levels (continued)

E(level)†	L‡	C^2S#	E(level)†
2720 *14*	(2)		2905 *15*
2743 *14*	4	0.65	2933 *15*
2758 *14*	(3,2+4)		2951 *15*
			2963 *15*

† Authors′ values.
‡ From DWBA analysis of $\sigma(\theta)$.
# C^2S values from 1971Bh01 assuming n pickup configuration is $3s_{1/2}$, $2d_{5/2}$, $1g_{9/2}$ for L=0,2,4 transfers, respectively; normalization factor=5. No finite range corrections included [see comment on C^2S values for ^{93}Nb(p,d)].
@ Deduced by authors on basis of γ branching, assuming $J^\pi=7^+$ for the g.s..
& Probable doublet with level spacing ≥5 keV.
a From (d,tγ) data.
b DWBA analysis performed only for pairs of levels in the following cases: 2248 and 2255 levels (L=1, C^2S=0.02), 2300 and 2311 levels (L=(1), C^2S=0.02), 2502 and 2515 levels (L=1, C^2S=0.02).
c Weakly excited.

γ(^{92}Nb)

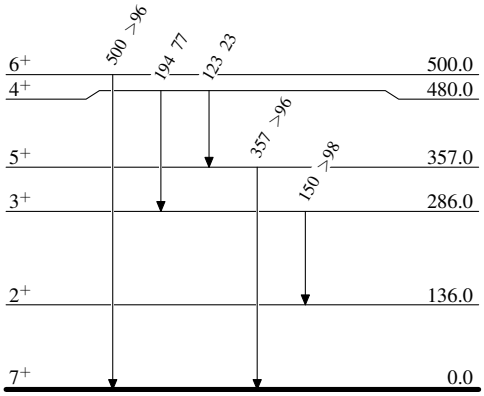
E_i(level)	J_i^π	E_γ‡	I_γ†	E_f	J_f^π
286.0	3^+	150	>98	136.0	2^+
357.0	5^+	357	>96	0.0	7^+
480.0	4^+	123	23# *4*	357.0	5^+
		194	77# *4*	286.0	3^+
500.0	6^+	500	>96	0.0	7^+

† % photon branching from level.
‡ Uncertainty not specified by authors.
# From I(194γ)/I(123γ)=3.4 *7*.

^{93}Nb(d,t), (d,tγ) 1971Bh01

Level Scheme

Intensities: % photon branching from each level



$^{92}_{41}Nb_{51}$