Adopted Levels, Gammas

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	G. C. Sheu, J. H. Kelley	ENSDF	06-Nov-2018

Q(β^-)=12523 *17*; S(n)=5328 *25*; S(p)=16350 *30*; Q(α)=−15527 *27* 2017Wa10

The ^{19}N nucleus is particle stable with respect to decay into ^{18}N+n by 5.33 MeV. Its mass excess is ΔM=15.856 MeV *16* (2017Wa10).

Theoy:

Predictions, calculations and analyses for ground-state and excited-state parameters of ^{19}N: 1972Wa07, 1975Be31, 1990Lo11, 1993Po11, 1996Re04, 1998De43, 1999He33, 2000Zh42, 2002Ka73, 2002Me12, 2003Gr01, 2004La24, 2004Ne16, 2013Au03, 2015Ci05, 2016Ma06.

Shell model calculations: 1988PoZS, 1992Wa22, 1988Wa17, 1993Po11, 2004Su23, 2012Yu04, 2012Yu07, 2016Zh05.

^{19}N mass estimates and calculations: 1966Ga25, 1969St07, 1972Ba25, 1972Th13, 1974Th01, 1975Je02, 1976Ja23, 1976Wa18, 1977Wa08, 1986An07, 2006Ko02.

^{19}N Levels

Cross Reference (XREF) Flags

A	^{19}C β^- decay	H	C(^{20}N,^{19}N)	O	^{207}Pb(^{18}O,^{19}N),^{208}Pb(^{18}O,^{19}N)
B	H(^{19}C,^{19}N),C(^{19}C,^{19}N)	I	^{18}O(^{18}O,^{19}N)	P	^{208}Pb(^{20}N,^{19}Nγ)
C	^{1}H(^{21}N,^{19}Nγ),^{208}Pb(^{21}N,^{19}Nγ)	J	^{20}C β^-n decay	Q	^{232}Th(^{18}O,^{19}N)
D	^{9}Be(^{36}S,Xγ)	K	Si(^{19}N,X)	R	^{232}Th(^{22}Ne,^{19}N)
E	^{9}Be(^{40}Ar,^{19}N)	L	^{48}Ca(^{18}O,^{19}N)	S	U(P,^{19}N)
F	^{10}Be(^{11}B,2p)	M	Ni(^{40}Ar,^{19}N),^{181}Ta(^{40}Ar,^{19}N)		
G	C(^{19}N,X)	N	Au(P,^{19}N)		

E(level)†	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0	1/2$^-$	336 ms *3*	BCDEFGHIJKLMNOPQRS	%β^-=100; %β^-n=41.8 *9* (2006Su12) μ=0.305 *15* (2004Ka22) See also P$_n$=(33 *+34−11*)% (1988Mu08), P$_n$=(62.4 *26*)% (1991Re02) and (1993ReZX). T$_{1/2}$: From (2006Su12). Previous results are 0.32 sec *10* (1986Du07), 0.21 sec *+20−10* (1988Mu08), 0.235 sec *32* (1988Sa04), 0.300 sec *80* (1988DuZT), 0.329 sec *19* (1991Re02), 0.255 sec *10* (P.L. Reeder et al., Int. Conf. on Nucl. Data for Science and Technology, May 9-13, 1994, Gatlinburg, Tennessee) and 0.271 sec *8* (1995ReZZ). See also (1984Kl06, 1986JeZY,1987BaZI,1987DuZU,1987MiZU, 1988BaYZ, 1994KiZU) and (1988Wa17, 1982CuZZ: theory). *g*-factor(=0.61 *3*) (2004Ka22) is significantly smaller than the value of g(^{17}N$_{g.s.}$) which contradicts the shell-model predictions. μ: An upper limit μ(^{19}N)≤0.32 μ_N was deduced in (2004Ue03).
1143 *3*	(3/2$^-$)		CD I P	%IT=100 E(level): See also 1110 keV *20* (1989Ca25).
1676 *3*	(5/2$^-$)		CD I P	%IT=100 E(level): See also 1650 keV *20* (1989Ca25).
2132 *9*	(5/2$^+$,3/2$^-$)		D	%IT=100
2511 *5*	(1/2$^+$)		D I P	%IT=100 E(level): See also 2540 keV *30* (1989Ca25).
3170 *6*	(7/2$^-$)		D	%IT=100
3470 *30*			I	%IT=100 E(level): from (1989Ca25).
4023 *9*	(7/2$^-$)		D	%IT=100

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{19}N Levels (continued)

E(level)[†]	XREF	Comments
4180 *20*	I	%IT=100 E(level): from (1989Ca25).
6400 *27*	A	%n≤100
6508 *27*	A	%n≤100
7025 *33*	A	%n≤100

[†] E≤4023 keV from (2008So09), E≥6400 keV from (1995Oz02).

γ(^{19}N)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π
1143	(3/2$^-$)	1141 *3*	100	0.0	1/2$^-$
1676	(5/2$^-$)	532 *2*	100 *8*	1143	(3/2$^-$)
		1681 *5*	39 *8*	0.0	1/2$^-$
2132	(5/2$^+$,3/2$^-$)	2132 *9*	100	0.0	1/2$^-$
2511	(1/2$^+$)	1368 *4*	100 *13*	1143	(3/2$^-$)
		2507[†] *11*	25 *13*	0.0	1/2$^-$
3170	(7/2$^-$)	1494 *6*	100 *19*	1676	(5/2$^-$)
		2016[†] *11*	38 *19*	1143	(3/2$^-$)
4023	(7/2$^-$)	2347 *9*	100	1676	(5/2$^-$)

[†] Placement of transition in the level scheme is uncertain.

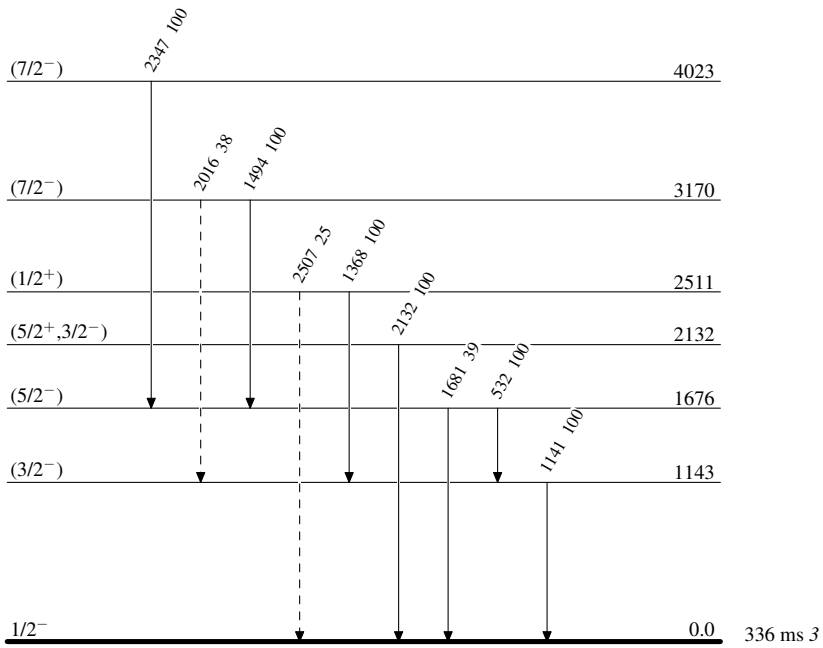
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



$^{19}_{7}N_{12}$