^{32}Cl εp decay (300.1 ms) 1979Ho27

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh	NDS 184, 29 (2022)	24-Jun-2022

Parent: ^{32}Cl: E=0; $J^\pi=1^+$; $T_{1/2}$=300.1 ms *17*; Q(εp)=3816.9 *6*; %εp decay=0.026 *5*

^{32}Cl-J^π: From Adopted Levels of ^{32}Cl in the ENSDF database (2011Ou01) (Aug 2011 update).

^{32}Cl-$T_{1/2}$: weighted average of 301.2 ms *13* (2012Me03, 2230γ decay curve, also 300 ms *5* from 4771γ decay); 281 ms *8* (1971Go18, γ decay); 298 ms *1* (1968Ar03, β decay, uncertainty increased to 2 ms in averaging procedure); 294 ms *6* (1966An01, γ decay). Others: 300 ms (1969St14); 306 ms *4* (1955Gl22, β decay, also 1953Gl32); 320 ms *10* (1954Br12); 0.28 s (1954Ty33).

^{32}Cl-Q(εp): From 2021Wa16.

^{32}Cl-%εp decay: %εp=0.026 *5* (1979Ho27).

1979Ho27: ^{32}Cl from ^{32}S(p,n)^{32}Cl reaction using E=20 MeV protons from the University of Jyvaskyla MC-20 cyclotron using natural sulphur targets (95% ^{32}S). Fast tape transport system for reaction products (<100 ms) towards counting chamber. Measured E(p) and I(p) using Si surface barrier detectors with Ge detectors to identify reaction products and particle to γ ratios.

1969St14: ^{32}Cl from ^{32}S(p,n) reaction using protons from UCLA cyclotron. Measured delayed proton energy and intensity using a Si Au surface barrier detector. Pneumatic rabbit system to move target from reaction chamber to the counting chamber. Measured Ep, Ip following decay.

^{31}P Levels

E(level)	J^π	$T_{1/2}$	Comments
0	$1/2^+$	stable	J^π: from Adopted Levels.

Delayed Protons (^{31}P)

E(p)†	E(^{31}P)	I(p)†‡	E(^{32}S)	Comments
	0	<0.0010	9232	
	0	<0.0005	9464	
762 *5*	0	0.0052 *8*	9651	E(p): other: 760 *30* (1969St14).
	0	<0.0015	9711	
991 *5*	0	0.0113 *17*	9888	
1051 *5*	0	0.0019 *4*	9950	E(p): other: 1020 *20* (1969St14). I(p): I(1051)/I(762)=52/32 (1969St14).
	0	<0.0003	9984	
1324 *5*	0	0.0052 *8*	10232	E(p): other: 1350 *20* (1969St14). I(p): I(1324)/I(762)=39/32 (1969St14).
1381 *5*	0	0.00078 *20*	10290	
	0	<0.0002	10460	
	0	<0.0002	10532	
1856 *5*	0	0.0016 *3*	10781	
	0	<0.0002	10793	
	0	<0.0002	11064	

† From 1979Ho27.

‡ Absolute intensity per 100 decays.

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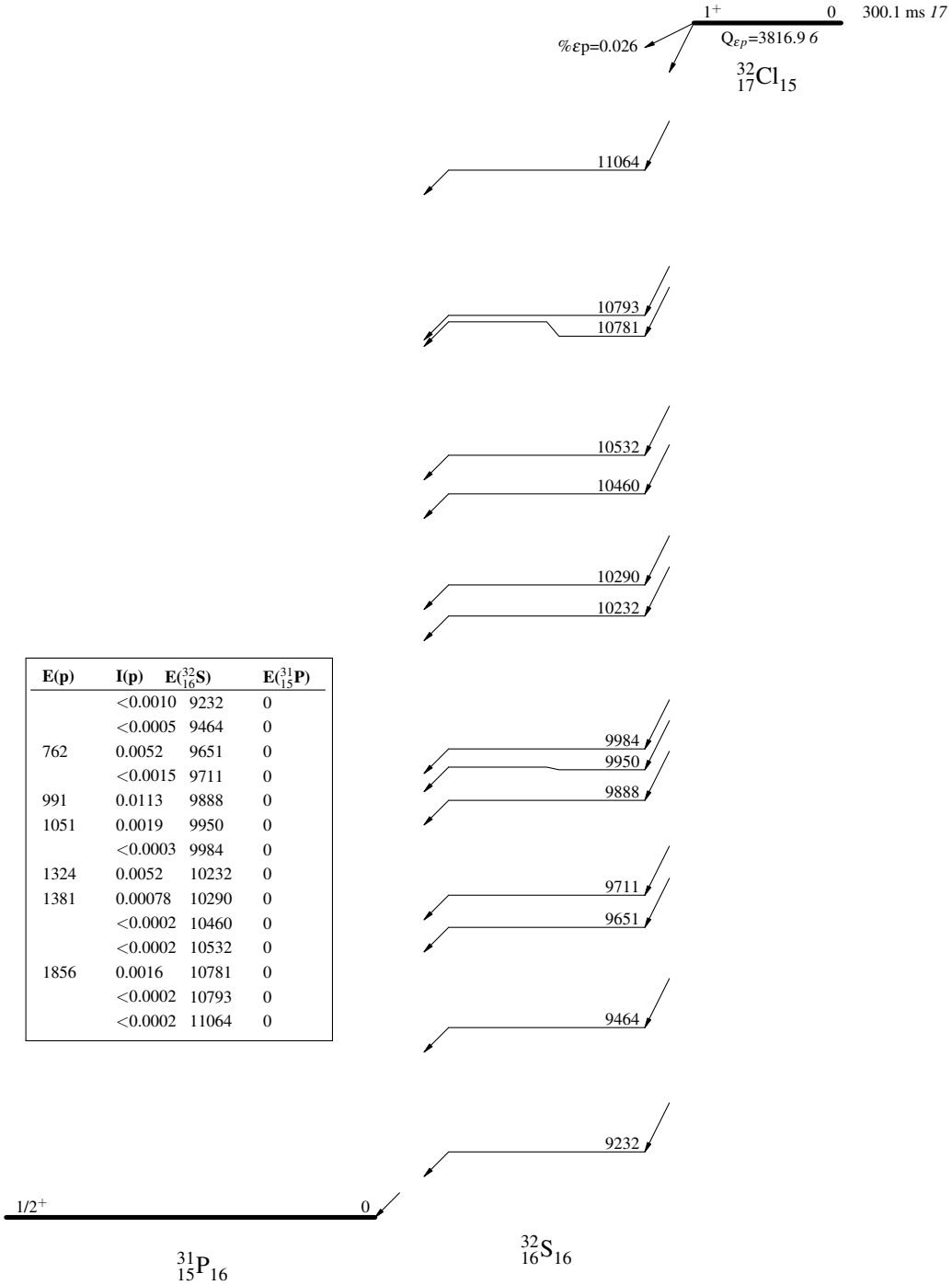
Decay Scheme

I(p) Intensities: I(p) per 100 parent decays



E(p)	I(p)	E($^{32}_{16}$S)	E($^{31}_{15}$P)
	<0.0010	9232	0
	<0.0005	9464	0
762	0.0052	9651	0
	<0.0015	9711	0
991	0.0113	9888	0
1051	0.0019	9950	0
	<0.0003	9984	0
1324	0.0052	10232	0
1381	0.00078	10290	0
	<0.0002	10460	0
	<0.0002	10532	0
1856	0.0016	10781	0
	<0.0002	10793	0
	<0.0002	11064	0