Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	T. W. Burrows	NDS 109,171 (2008)	30-Oct-2007

Q(β^-)=1.141×10^4 *10*; S(n)=5.82×10^3 *22*; S(p)=1.644×10^4 *10*; Q(α)=−1.580×10^4 *13* 2012Wa38
Note: Current evaluation has used the following Q record 1.141E4 12 *6*.20E3 16 *1*.654E441-1.551E425 2003Au03.
Q(β^-n)=6.24 MeV *12* (2003Au03).
Δ'(^{45}Cl)=−18.36 MeV *12* (2003Au03) compared to −18.36 MeV *10* (2007Ju03. See 2000Sa21 for experimental details).
1993So06, 1995So03: ^{64}Ni(^{48}Ca,X) E=60 MeV/A; mass separation. Measured $T_{1/2}$, β^-n coincidences, and delayed-neutron emission probability (doubly-achromatic spectrometer; polyethylene-moderated ^{3}He pc′s).
1998WiZV: Be(^{48}Ca,X) E=70 MeV/A and 80 MeV/A. Mixed-particle beam produced by fragmentation of ^{48}Ca beams provided by the K1200 cyclotron at the NSCL of Michigan State University on 254 mg/cm^2 and 376 mg/cm^2 Be targets, respectively. Ions identified with a thin Si detector before implantation into Al targets. Measured γ′s and $\gamma\gamma$- and $\beta\gamma\gamma$-coincidences. Changes in the beam-on/beam-off timing cycle and beam-line tuning allowed association of γ′s to specific decays and $T_{1/2}$ measurements.
Other: 1995ReZZ.

^{45}Cl Levels

Cross Reference (XREF) Flags

- A ^{1}H(^{46}Ar,2pγ): E=76.4 MeV/A
- B ^{9}Be(^{48}Ca,Xγ): E=60.3 MeV/A
- C Coulomb excitation

E(level)†	J$^\pi$	$T_{1/2}$	XREF	Comments
0.0	(1/2$^+$)	413 ms *25*	ABC	%β^-=100; %β^-n=24 *4* (1993So06) J$^\pi$: from shell-model calculations in (^{46}Ar,2pγ) (2006Ga31). Other: 3/2$^+$ (2003Au02; syst). $T_{1/2}$: weighted average of 400 ms *43* (1993So06. Mean value of 400 ms *45*, 395 ms *48*, and 405 ms *35*) and 420 ms *30* (1998WiZV).
127 *6*	(3/2$^+$)		A	J$^\pi$: agreement between (^{46}Ar,2pγ) data and shell-model predictions for the energy splitting of the 1/2$^+$, g.s., and the first excited 3/2$^+$ (2006Ga31).
928 *6*	(5/2$^+$)		ABC	B(E2)↑=87 *24* J$^\pi$: Coul. Ex. B(E2)↑: From Coul. Ex. assuming pure E2 excitation.
1616 *8*			B	

† From least-squares fit to Eγ′s.

γ(^{45}Cl)

See (^{46}Ar,2pγ) for unplaced γ.

E$_i$(level)	J$_i^\pi$	E$_\gamma$	E$_f$	J$_f^\pi$	Mult.	Comments
127	(3/2$^+$)	127 *6*	0.0	(1/2$^+$)		E$_\gamma$: from (^{46}Ar,2pγ).
928	(5/2$^+$)	928 *6*	0.0	(1/2$^+$)	D,E2	E$_\gamma$: weighted average of 927 *7* from (^{48}Ca,Xγ), 929 *9* from (^{46}Ar,2pγ), and 929 *17* from Coul. Ex. Mult.: ΔJ=2 Q or ΔJ=0 d transition from angular anisotropy ratios in (^{48}Ca,Xγ).
1616		1616 *8*	0.0	(1/2$^+$)		E$_\gamma$: from (^{48}Ca,Xγ).

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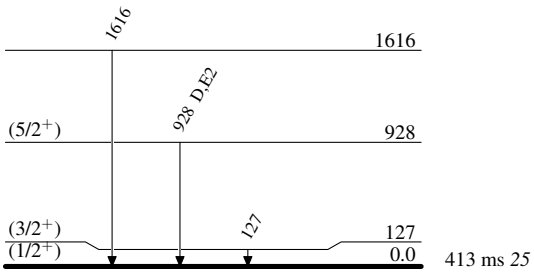
Level Scheme



$^{45}_{17}Cl_{28}$