

Adopted Levels, Gammas

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 112,1875 (2011)		30-Nov-2010

$Q(\beta^-) = -1.78 \times 10^4$ syst; $S(n) = 1.977 \times 10^4$ syst; $S(p) = 8.7 \times 10^2$ 3; $Q(\alpha) = -9.90 \times 10^3$ 3 [2012Wa38](#)

Note: Current evaluation has used the following Q record –17750 SY19760 SY864 26-9889 26 [2011AuZZ](#).
 $\Delta Q(\beta^-) = 400$ (syst), $\Delta S(n) = 197$ (syst) ([2011AuZZ](#)).
 $Q(\beta^-) = -18260$ 200(syst), $Q(\alpha) = -9910$ 30 ([2003Au03](#)).

[2005Mo28](#) reported two excitation energies, 3095 keV and 3339 keV, in the preliminary analysis of ^{26}Si +p elastic resonance.

[2002Zh30](#), [2001Fa15](#), [2001Fa23](#): Evidence of a proton halo reported from measured interaction cross section of ^{27}P with carbon, 2151(123) mb at 30 MeV/u, compared to a series of measured interaction cross sections.

[1998Na34](#): Measured proton knockout reaction cross section of ^{27}P on ^9Be , 74(11) mb, and reported a ^{26}Si ground state population cross section of 22(8) mb.

 ^{27}P Levels**Cross Reference (XREF) Flags**

A	^{27}S β^+ decay
B	$^9\text{Be}(^{28}\text{S}, ^{27}\text{P}\gamma)$
C	$^{28}\text{Si}(^7\text{Li}, ^8\text{He})$
D	$^{32}\text{S}(^3\text{He}, ^8\text{Li})$

E(level) [†]	J^π [‡]	$T_{1/2}$ [#]	XREF	Comments
0.0	$1/2^+$	260 ms 80	BCD	$\%e + \%\beta^+ = 100$; $\%\beta^+ p = 0.07$ $\langle r^2 \rangle = 4.6(4)$ fm (measured rms radius in 2006Gu01). $\%\beta^+ p$ from 1996Og01 ; other: 0.05 (1985Ay02).
1120 8	($3/2^+$)		BC	
1625 19			CD	E(level): Weighted average of 1615 keV 21 ($^7\text{Li}, ^8\text{He}$) and 1660 keV 40 ($^3\text{He}, ^8\text{Li}$). In 2001Ca37 an average value of 1631 keV 19 is reported.
3453 22			C	
12752 50			A	

[†] From ($^7\text{Li}, ^8\text{He}$), except otherwise noted.

[‡] From comparison of measured level population cross section in ($^{28}\text{S}, ^{27}\text{P}\gamma$) and shell model calculation.

[#] From [1985Ay02](#).

 $\gamma(^{27}\text{P})$

E _i (level)	J_i^π	E _{γ}	I _{γ}	E _f	J_f^π	Mult.	Comments
1120	($3/2^+$)	1120 8	100	0.0	$1/2^+$	(M1+E2)	E_γ : From ($^{28}\text{S}, ^{27}\text{P}\gamma$). Measured E2 γ -decay width, $(2.8 \pm 0.5) \times 10^{-5}$ eV, of the 1st excited state from an experiment of ^{27}P beam on a lead target (2006To09). A total width of M1+E2 is estimated to be $\Gamma_\gamma = (1.3 \pm 0.8) \times 10^{-3}$ eV, combining the shell model calculation.

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Intensities: Relative photon branching from each level

