^{76}Se(μ^-,γ) 2019Zi01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, Jun Chen and Ameenah R. Farhan	NDS 194,3 (2024)	8-Jan-2024

This dataset has been adapted from compilation by Jun Chen (NSCL, MSU) May 6, 2019 for the XUNDL database.
2019Zi01: negative muon beams were produced from the μE4 and μE1 lines of the Paul Scherrer Institute (Ψ) in Switzerland. Target was 800 mg/cm^2 Se granules (92.4% enriched in ^{76}Se). υX rays and γ rays were detected using HPGe detectors. Measured Eγ, Iγ, E(μX ray), I(μX ray), γ(t). Deduced muon lifetime, partial capture rates to excited states in ^{76}Ge.

^{76}As Levels

Muon disappearance lifeime=148.48 ns *10* (capture+decay), from which the total muon capture rate is deduced as λ_{cap}=6.300×10^6 s^{-1} *4* (2019Zi01). The percentage of the total capture rates to excited stated amounts to 12.0% *11* (2019Zi01).
γ data used to deduce muon capture yields to excited states are not listed by 2019Zi01.

E(level)†	J$^\pi$†	Population intensity‡	E(level)†	J$^\pi$†	Population intensity‡
0	2$^-$		640.1		0.018 *9*
120.3	1$^+$	0.032 *12*	669.1		0.064 *20*
122.2	(1)$^-$	0.021 *11*	681.0		0.033 *10*
165.0	(3)$^-$	0.054 *31*	734.4		0.008 *4*
203.5		0.008 *4*	751.8		0.037 *19*
280.3		0.011 *5*	756.6		0.026 *10*
292.6		0.005 *1*	774.4		0.023 *11*
328.5		0.009 *4*	793.6		0.020 *15*
352.4		0.005 *2*	802.5		0.017 *10*
401.8		0.041 *26*	863.4		0.027 *20*
436.8		0.028 *13*	893.8		0.023 *10*
447.2		0.046 *23*	924.8		0.024 *10*
471.0	(2)$^-$	0.005 *4*	939.8		0.033 *25*
499.6		0.099 *36*	958.4		0.013 *8*
505.2		0.025 *6*	985.5		0.021 *12*
517.6		0.024 *11*	1026.2		0.096 *24*
544.0		0.039 *24*	1034.2	1$^+$	0.013 *8*
610.0		0.068 *20*	1064.5	1$^+$	0.023 *15*

† Values taken by 2019Zi01 from the Adopted Levels in the 1995 ENSDF evaluation of A=76 nuclei. Energies given here are rounded values. Evaluators list J^π assignments here for only the first few levels.
‡ Population per 100 muon captures (2019Zi01). Deduced by 2019Zi01 from γ-ray intensity balance at each level.