^{76}Se(γ,γ') 2012Co17

History

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

See also ^{76}Se(pol γ,γ') dataset based on 2013Go19 paper.

2012Co17 (also 2015CoZV thesis): E<9 MeV bremsstrahlung from S-DALINAC facility at TU, Darmstadt. Measured Eγ, Iγ, $\gamma(\theta)$ at 90° and 130° relative to the beam direction using two HPGe detectors. Deduced levels, J, integrated cross sections, widths and level lifetimes. Evidence for mixed-symmetry states.

Others: 1973KaZV, 1963Pr04, 1960De08.

^{76}Se Levels

E(level)	J$^{\pi}$[†]	T$_{1/2}$[‡]	Comments
0.0	0$^+$		
559.103[#] *5*	2$^+$[#]	11 ps *2*	T$_{1/2}$: from 1963Pr04. Other: 9 ps *2* (1960De08).
1122.279[#] *8*	0$^+$[#]		
1216.154[#] *6*	2$^+$[#]	15 ps *5*	T$_{1/2}$: from 10-21 ps (1973KaZV). Others: >2 ps (1963Pr04), >4 ps (1960De08).
2950.6 *5*	1$^+$	76 fs *13*	
3214.4 *4*	1,2	11 fs *4*	
3405.8 *7*	1	205 fs *33*	
3528.6 *3*	1	50 fs *5*	
3566.5 *10*	1	157 fs *24*	
3604.3 *3*	1$^+$	55 fs *5*	
3670.1 *4*	1	73 fs *8*	
3752.0 *14*	1	175 fs *50*	
3758.7 *2*	1	6.0 fs *6*	
3857.7 *11*	1	171 fs *35*	
3922.9 *4*	1	42 fs *4*	
4046.2 *3*	1	31.1 fs *29*	
4055.1 *2*	1	29.3 fs *26*	
4125.4 *10*	1	134 fs *25*	
4218.7 *1*	1	2.96 fs *26*	
4329.2 *4*	1,2	6.1 fs *15*	
4535.6 *5*	1	10.1 fs *17*	
4662.9 *3*	1	5.4 fs *5*	
4720.0 *3*	1	6.4 fs *9*	
4766.8 *3*	1	17.4 fs *15*	
4879.8 *4*	1	19.9 fs *19*	
4886.9 *6*	1	27.0 fs *33*	
4931.4 *17*	1,2	79 fs *21*	
4938.4 *15*	1	43 fs *8*	
4971.3 *17*	1$^{(+)}$	38 fs *7*	
4984.7 *3*	1	6.0 fs *8*	
5010.3 *2*	1	3.65 fs *35*	
5073.9 *1*	1	2.44 fs *15*	
5122.0 *2*	1	35 fs *8*	
5128.4 *1*	1	25 fs *4*	
5142.1 *7*	1	26.1 fs *32*	
5194.4 *2*	1	2.27 fs *17*	
5239.4 *8*	1	9.6 fs *15*	
5284.2 *3*	1	8.4 fs *6*	
5298.4 *1*	1	1.98 fs *11*	
5323.8 *3*	1	8.8 fs *7*	
5346.8 *2*	1	3.4 fs *4*	
5367.3 *13*	1	44 fs *10*	
5375.3 *1*	1	1.43 fs *13*	
5411.2 *3*	1,2	1.53 fs *33*	

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^{76}Se(γ,γ') 2012Co17 (continued)

^{76}Se Levels (continued)

E(level)	J^{π}†	$T_{1/2}$‡	E(level)	J^{π}†	$T_{1/2}$‡	E(level)	J^{π}†	$T_{1/2}$‡
5425.0 *2*	1	3.6 fs *4*	6297.6 *14*	1	10.0 fs *15*	6748.7 *5*	1	1.32 fs *21*
5685.3 *3*	1	8.0 fs *7*	6315.6 *3*	1	2.97 fs *25*	6881.9 *14*	1	1.52 fs *28*
5709.6 *4*	1	7.4 fs *7*	6336.5 *20*	1	6.6 fs *13*	6973.0 *8*	1	4.0 fs *5*
5740.5 *3*	1	5.6 fs *5*	6342.3 *11*	1	5.1 fs *8*	6992.5 *5*	1	3.3 fs *5*
5773.1 *9*	1	19.2 fs *32*	6387.2 *14*	1	6.7 fs *10*	7241.2 *7*	1	4.3 fs *8*
5783.3 *3*	1	3.90 fs *29*	6437.8 *19*	1	8.4 fs *19*	7457.6 *7*	1	5.1 fs *10*
5803.7 *6*	1	3.1 fs *8*	6448.7 *20*	1	6.1 fs *10*	7508.0 *8*	1	4.0 fs *5*
5813.7 *5*	1	8.0 fs *8*	6497.4 *6*	1	5.0 fs *6*	7521.7 *7*	1	1.18 fs *21*
5842.0 *2*	1	3.28 fs *24*	6532.4 *3*	1	3.04 fs *29*	7546.5 *6*	1	1.59 fs *14*
5879.4 *6*	1	14.8 fs *19*	6550.7 *13*	1	11.0 fs *19*	7658.3 *12*	1	6.4 fs *10*
5892.1 *3*	1	3.4 fs *5*	6562.6 *19*	1	8.1 fs *15*	7698.2 *9*	1	2.22 fs *28*
5997.2 *4*	1,2	0.94 fs *21*	6570.1 *9*	1	4.8 fs *7*	7978.5 *8*	1	2.8 fs *6*
6035.4 *4*	1	6.1 fs *6*	6595.9 *7*	1	5.5 fs *7*	8197.0 *13*	1	0.76 fs *14*
6099.1 *4*	1	2.80 fs *32*	6608.2 *8*	1	6.0 fs *8*	8394.4 *10*	1	2.50 fs *35*
6131.2 *6*	1	11.5 fs *18*	6631.1 *4*	1	1.39 fs *28*	8526.6 *11*	1	0.49 fs *14*
6247.4 *9*	1	4.6 fs *6*	6691.2 *8*	1	9.6 fs *16*	8709.4 *13*	1	1.66 fs *28*
6254.0 *9*	1	5.5 fs *8*	6742.2 *4*	1	1.11 fs *14*			

† Spin from $\gamma(\theta)$ data in 2012Co17. Parity from Adopted Levels.
‡ Deduced by 2012Co17 from cross section and branching ratios, unless otherwise stated.
# From Adopted Levels.

$\gamma(^{76}Se)$

$R_{90°/130°}$ is approximately 2.2 and 0.71 for the spin sequences 0 -> 2 -> 0 and 0 -> 1 -> 0, respectively.
B(E1)↓ and B(M1)↓ values under comments are deduced from corresponding B(E1)↑ and B(M1)↑ values listed in table I of 2012Co17, which are calculated by the authors from their deduced lifetimes assuming pure E1 or M1.

E_γ	I_f^S†	E_i(level)	J_i^π	E_f	J_f^π	Comments
559.1‡		559.103	2^+	0.0	0^+	
657.0‡		1216.154	2^+	559.103	2^+	
1216.2‡		1216.154	2^+	0.0	0^+	
2391.9 *26*	1.7 *4*	2950.6	1^+	559.103	2^+	B(E1)↓=0.14×10^{-5} *5*; B(M1)↓=0.012 *4* $R_{90°/130°}$=0.3 *5*.
2542.6 *8*	2.7 *7*	3758.7	1	1216.154	2^+	B(E1)↓=0.40×10^{-5} *12*; B(M1)↓=0.037 *10* $R_{90°/130°}$=2.1 *9*.
2636.1 *6*	6.1 *9*	3758.7	1	1122.279	0^+	B(E1)↓=0.80×10^{-5} *15*; B(M1)↓=0.073 *14* $R_{90°/130°}$=0.42 *14*.
2654.3 *5*	5.2 *7*	3214.4	1,2	559.103	2^+	B(E1)↓=1.9×10^{-5} *7*; B(M1)↓=0.17 *7* $R_{90°/130°}$=0.85 *22*.
2950.6 *5*	3.7 *5*	2950.6	1^+	0.0	0^+	B(E1)↓=0.15×10^{-5} *2*; B(M1)↓=0.014 *2* $R_{90°/130°}$=0.60 *12*.
3112.4 *6*	8.1 *11*	4329.2	1,2	1216.154	2^+	B(E1)↓=1.8×10^{-5} *5*; B(M1)↓=0.17 *5* $R_{90°/130°}$=1.2 *3*.
3199.8 *3*	6.8 *7*	3758.7	1	559.103	2^+	B(E1)↓=0.50×10^{-5} *7*; B(M1)↓=0.045 *6* $R_{90°/130°}$=1.23 *17*.
3216.7 *8*	0.73 *25*	3214.4	1,2	0.0	0^+	B(E1)↓=0.15×10^{-5} *2*; B(M1)↓=0.014 *2* $R_{90°/130°}$=1.9 *11*.
3405.8 *7*	2.2 *4*	3405.8	1	0.0	0^+	B(E1)↓=0.054×10^{-5} *9*; B(M1)↓=0.0049 *8* $R_{90°/130°}$=0.66 *20*.

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^{76}Se(γ,γ') 2012Co17 (continued)

$\gamma(^{76}Se)$ (continued)

E_γ	$I_f^{S\dagger}$	E_i(level)	J_i^π	E_f	J_f^π	Comments
3528.6 *3*	8.4 *8*	3528.6	1	0.0	0^+	B(E1)↓=0.20×10^{-5} *2*; B(M1)↓=0.0178 *18* $R_{90°/130°}$=0.72 *8*.
3566.5 *10*	2.6 *4*	3566.5	1	0.0	0^+	B(E1)↓=0.06×10^{-5} *1*; B(M1)↓=0.0054 *9* $R_{90°/130°}$=0.84 *26*.
3604.3 *3*	7.3 *7*	3604.3	1^+	0.0	0^+	B(E1)↓=0.17×10^{-5} *2*; B(M1)↓=0.0151 *15* $R_{90°/130°}$=0.59 *7*.
3659.6 *1*	24.9 *19*	4218.7	1	559.103	2^+	B(E1)↓=1.53×10^{-5} *18*; B(M1)↓=0.138 *17* $R_{90°/130°}$=0.96 *7*.
3670.1 *4*	5.3 *6*	3670.1	1	0.0	0^+	B(E1)↓=0.12×10^{-5} *1*; B(M1)↓=0.0109 *12* $R_{90°/130°}$=0.62 *9*.
3752.0 *14*	2.1 *6*	3752.0	1	0.0	0^+	B(E1)↓=0.05×10^{-5} *1*; B(M1)↓=0.0042 *12* $R_{90°/130°}$=0.7 *4*.
3758.6 *3*	14.5 *13*	3758.7	1	0.0	0^+	B(E1)↓=0.67×10^{-5} *3*; B(M1)↓=0.060 *3* $R_{90°/130°}$=0.68 *8*.
3857.7 *11*	2.1 *4*	3857.7	1	0.0	0^+	B(E1)↓=0.04×10^{-5} *1*; B(M1)↓=0.0039 *9* $R_{90°/130°}$=0.47 *21*.
3922.9 *4*	8.2 *9*	3922.9	1	0.0	0^+	B(E1)↓=0.17×10^{-5} *2*; B(M1)↓=0.016 *2* $R_{90°/130°}$=0.70 *10*.
3977.2 *11*	6.1 *12*	4535.6	1	559.103	2^+	B(E1)↓=0.27×10^{-5} *8*; B(M1)↓=0.024 *8* $R_{90°/130°}$=0.70 *26*.
4023.1 *10*	3.4 *7*	5239.4	1	1216.154	2^+	B(E1)↓=0.15×10^{-5} *3*; B(M1)↓=0.014 *30* $R_{90°/130°}$=0.9 *4*.
4046.2 *3*	10.3 *10*	4046.2	1	0.0	0^+	B(E1)↓=0.21×10^{-5} *2*; B(M1)↓=0.019 *2* $R_{90°/130°}$=0.60 *7*.
4055.1 *2*	10.9 *10*	4055.1	1	0.0	0^+	B(E1)↓=0.22×10^{-5} *2*; B(M1)↓=0.020 *2* $R_{90°/130°}$=0.74 *8*.
4104.2 *5*	8.2 *11*	4662.9	1	559.103	2^+	B(E1)↓=0.28×10^{-5} *5*; B(M1)↓=0.026 *5* $R_{90°/130°}$=1.04 *24*.
4125.4 *10*	2.3 *4*	4125.4	1	0.0	0^+	B(E1)↓=0.05×10^{-5} *1*; B(M1)↓=0.004 *1* $R_{90°/130°}$=0.53 *19*.
4131.5 *9*	6.2 *10*	5346.8	1	1216.154	2^+	B(E1)↓=0.38×10^{-5} *8*; B(M1)↓=0.035 *8* $R_{90°/130°}$=0.74 *22*.
4160.7 *4*	8.8 *9*	4720.0	1	559.103	2^+	B(E1)↓=0.58×10^{-5} *10*; B(M1)↓=0.053 *9* $R_{90°/130°}$=0.78 *11*.
4175.0 *12*	2.6 *6*	5298.4	1	1122.279	0^+	B(E1)↓=0.10×10^{-5} *2*; B(M1)↓=0.0090 *21* $R_{90°/130°}$=1.2 *6*.
4218.8 *3*	23.7 *19*	4218.7	1	0.0	0^+	B(E1)↓=0.96×10^{-5} *5*; B(M1)↓=0.087 *5* $R_{90°/130°}$=0.60 *5*.
4329.7 *6*	2.4 *5*	4329.2	1,2	0.0	0^+	B(E1)↓=0.20×10^{-5} *2*; B(M1)↓=0.018 *2* $R_{90°/130°}$=1.6 *6*.
4426.1 *5*	8.6 *14*	4984.7	1	559.103	2^+	B(E1)↓=0.35×10^{-5} *8*; B(M1)↓=0.032 *8* $R_{90°/130°}$=0.65 *19*.
4451.5 *6*	11.1 *18*	5010.3	1	559.103	2^+	B(E1)↓=0.35×10^{-5} *8*; B(M1)↓=0.032 *8* $R_{90°/130°}$=0.62 *18*.
4515.8 *3*	16.0 *14*	5073.9	1	559.103	2^+	B(E1)↓=0.50×10^{-5} *5*; B(M1)↓=0.045 *5* $R_{90°/130°}$=0.94 *11*.
4535.4 *6*	9.0 *12*	4535.6	1	0.0	0^+	B(E1)↓=0.28×10^{-5} *3*; B(M1)↓=0.025 *3* $R_{90°/130°}$=0.41 *8*.
4635.1 *3*	20.6 *17*	5194.4	1	559.103	2^+	B(E1)↓=0.78×10^{-5} *10*; B(M1)↓=0.072 *8* $R_{90°/130°}$=0.68 *7*.
4662.7 *3*	25.9 *25*	4662.9	1	0.0	0^+	B(E1)↓=0.61×10^{-5} *5*; B(M1)↓=0.055 *5* $R_{90°/130°}$=0.53 *6*.

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^{76}Se(γ,γ') 2012Co17 (continued)

$\gamma(^{76}Se)$ (continued)

E_γ	$I_f^{S\dagger}$	E_i(level)	J_i^π	E_f	J_f^π	Comments
4720.5 *7*	5.7 *7*	4720.0	1	0.0	0^+	B(E1)↓=0.26×10^{-5} *2*; B(M1)↓=0.023 *2* $R_{90°/130°}$=0.63 *13*.
4739.6 *5*	10.1 *11*	5298.4	1	559.103	2^+	B(E1)↓=0.27×10^{-5} *3*; B(M1)↓=0.0242 *30* $R_{90°/130°}$=0.79 *13*.
4766.8 *3*	13.3 *11*	4766.8	1	0.0	0^+	B(E1)↓=0.23×10^{-5} *62*; B(M1)↓=0.021 *2* $R_{90°/130°}$=0.71 *8*.
4788.0 *3*	7.0 *10*	5346.8	1	559.103	2^+	B(E1)↓=0.28×10^{-5} *5*; B(M1)↓=0.026 *5* $R_{90°/130°}$=0.67 *17*.
4816.1 *2*	31.5 *24*	5375.3	1	559.103	2^+	B(E1)↓=1.48×10^{-5} *18*; B(M1)↓=0.133 *17* $R_{90°/130°}$=0.97 *9*.
4852.0 *3*	20.0 *17*	5411.2	1,2	559.103	2^+	B(E1)↓=2.0×10^{-5} *5*; B(M1)↓=0.18 *4* $R_{90°/130°}$=0.84 *9*.
4865.9 *2*	12.5 *13*	5425.0	1	559.103	2^+	B(E1)↓=0.53×10^{-5} *8*; B(M1)↓=0.048 *8* $R_{90°/130°}$=0.91 *14*.
4879.8 *4*	11.1 *11*	4879.8	1	0.0	0^+	B(E1)↓=0.19×10^{-5} *2*; B(M1)↓=0.017 *2* $R_{90°/130°}$=0.55 *8*.
4886.9 *6*	8.2 *10*	4886.9	1	0.0	0^+	B(E1)↓=0.14×10^{-5} *2*; B(M1)↓=0.013 *2* $R_{90°/130°}$=0.72 *15*.
4931.4 *17*	2.8 *7*	4931.4	1,2	0.0	0^+	B(E1)↓=0.05×10^{-5} *1*; B(M1)↓=0.004 *1* $R_{90°/130°}$=1.2 *6*.
4938.4 *15*	5.0 *9*	4938.4	1	0.0	0^+	B(E1)↓=0.08×10^{-5} *1*; B(M1)↓=0.008 *1* $R_{90°/130°}$=0.60 *22*.
4971.3 *17*	5.5 *10*	4971.3	$1^{(+)}$	0.0	0^+	B(E1)↓=0.09×10^{-5} *2*; B(M1)↓=0.008 *2* $R_{90°/130°}$=0.49 *20*.
4984.3 *4*	11.8 *11*	4984.7	1	0.0	0^+	B(E1)↓=0.033×10^{-5} *3*; B(M1)↓=0.030 *3* $R_{90°/130°}$=0.71 *10*.
5010.3 *2*	31.0 *22*	5010.3	1	0.0	0^+	B(E1)↓=0.70×10^{-5} *5*; B(M1)↓=0.063 *4* $R_{90°/130°}$=0.75 *7*.
5073.7 *1*	46 *3*	5073.9	1	0.0	0^+	B(E1)↓=1.02×10^{-5} *5*; B(M1)↓=0.092 *5* $R_{90°/130°}$=0.60 *5*.
5122.0 *2*	5.8 *13*	5122.0	1	0.0	0^+	B(E1)↓=0.09×10^{-5} *2*; B(M1)↓=0.008 *2* $R_{90°/130°}$=0.51 *24*.
5128.4 *1*	8.2 *14*	5128.4	1	0.0	0^+	B(E1)↓=0.13×10^{-5} *2*; B(M1)↓=0.012 *2* $R_{90°/130°}$=0.62 *20*.
5142.1 *7*	7.6 *9*	5142.1	1	0.0	0^+	B(E1)↓=0.12×10^{-5} *2*; B(M1)↓=0.011 *2* $R_{90°/130°}$=0.61 *13*.
5194.5 *2*	30.6 *22*	5194.4	1	0.0	0^+	B(E1)↓=0.82×10^{-5} *4*; B(M1)↓=0.074 *4* $R_{90°/130°}$=0.63 *6*.
5239.7 *12*	12.2 *22*	5239.4	1	0.0	0^+	B(E1)↓=0.25×10^{-5} *4*; B(M1)↓=0.022 *3* $R_{90°/130°}$=0.9 *3*.
5246.1 *14*	11.9 *23*	5803.7	1	559.103	2^+	B(E1)↓=0.58×10^{-5} *20*; B(M1)↓=0.053 *18* $R_{90°/130°}$=1.0 *4*.
5284.2 *3*	22.4 *17*	5284.2	1	0.0	0^+	B(E1)↓=0.35×10^{-5} *3*; B(M1)↓=0.032 *2* $R_{90°/130°}$=0.88 *9*.
5298.4 *1*	67 *4*	5298.4	1	0.0	0^+	B(E1)↓=1.24×10^{-5} *7*; B(M1)↓=0.112 *6* $R_{90°/130°}$=0.69 *5*.
5323.8 *3*	21.1 *17*	5323.8	1	0.0	0^+	B(E1)↓=0.33×10^{-5} *3*; B(M1)↓=0.030 *2* $R_{90°/130°}$=0.82 *10*.
5333.1 *4*	11.2 *15*	5892.1	1	559.103	2^+	B(E1)↓=0.38×10^{-5} *8*; B(M1)↓=0.035 *8* $R_{90°/130°}$=1.4 *3*.
5346.0 *4*	16.2 *14*	5346.8	1	0.0	0^+	B(E1)↓=0.46×10^{-5} *3*; B(M1)↓=0.041 *3* $R_{90°/130°}$=0.73 *9*.

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^{76}Se(γ,γ') 2012Co17 (continued)

$\gamma(^{76}Se)$ (continued)

E_γ	$I_f^{S\dagger}$	E_i(level)	J_i^π	E_f	J_f^π	Comments
5367.3 *13*	4.1 *9*	5367.3	1	0.0	0^+	B(E1)↓=0.06×10^{-5} *1*; B(M1)↓=0.006 *1* $R_{90°/130°}$=0.7 *3*.
5375.6 *3*	26.1 *20*	5375.3	1	0.0	0^+	B(E1)↓=0.89×10^{-5} *5*; B(M1)↓=0.080 *5* $R_{90°/130°}$=0.78 *8*.
5412.4 *14*	5.6 *14*	5411.2	1,2	0.0	0^+	B(E1)↓=0.39×10^{-5} *3*; B(M1)↓=0.036 *3* $R_{90°/130°}$=1.6 *7*.
5425.1 *5*	12.5 *12*	5425.0	1	0.0	0^+	B(E1)↓=0.38×10^{-5} *3*; B(M1)↓=0.035 *2* $R_{90°/130°}$=0.99 *15*.
5438.0 *4*	22.2 *20*	5997.2	1,2	559.103	2^+	B(E1)↓=0.24×10^{-5} *6*; B(M1)↓=0.21 *6* $R_{90°/130°}$=1.05 *13*.
5540.2 *7*	11.4 *15*	6099.1	1	559.103	2^+	B(E1)↓=0.32×10^{-5} *5*; B(M1)↓=0.028 *5* $R_{90°/130°}$=1.12 *25*.
5685.3 *3*	20.5 *18*	5685.3	1	0.0	0^+	B(E1)↓=0.30×10^{-5} *3*; B(M1)↓=0.027 *2* $R_{90°/130°}$=0.66 *8*.
5709.6 *4*	21.8 *20*	5709.6	1	0.0	0^+	B(E1)↓=0.32×10^{-5} *3*; B(M1)↓=0.029 *3* $R_{90°/130°}$=0.61 *9*.
5740.5 *3*	28.4 *23*	5740.5	1	0.0	0^+	B(E1)↓=0.41×10^{-5} *3*; B(M1)↓=0.037 *3* $R_{90°/130°}$=0.80 *9*.
5773.1 *9*	8.2 *14*	5773.1	1	0.0	0^+	B(E1)↓=0.12×10^{-5} *2*; B(M1)↓=0.011 *2* $R_{90°/130°}$=1.0 *3*.
5783.3 *3*	40 *3*	5783.3	1	0.0	0^+	B(E1)↓=0.58×10^{-5} *4*; B(M1)↓=0.052 *4* $R_{90°/130°}$=0.69 *7*.
5803.4 *7*	7.6 *13*	5803.7	1	0.0	0^+	B(E1)↓=0.28×10^{-5} *4*; B(M1)↓=0.025 *3* $R_{90°/130°}$=0.61 *20*.
5813.7 *5*	19.5 *19*	5813.7	1	0.0	0^+	B(E1)↓=0.28×10^{-5} *3*; B(M1)↓=0.025 *2* $R_{90°/130°}$=0.63 *9*.
5842.0 *2*	47 *3*	5842.0	1	0.0	0^+	B(E1)↓=0.67×10^{-5} *5*; B(M1)↓=0.060 *4* $R_{90°/130°}$=0.59 *5*.
5879.4 *6*	10.3 *13*	5879.4	1	0.0	0^+	B(E1)↓=0.15×10^{-5} *2*; B(M1)↓=0.013 *2* $R_{90°/130°}$=0.87 *19*.
5891.9 *5*	13.9 *15*	5892.1	1	0.0	0^+	B(E1)↓=0.35×10^{-5} *3*; B(M1)↓=0.032 *3* $R_{90°/130°}$=0.75 *13*.
5998.4 *14*	4.7 *11*	5997.2	1,2	0.0	0^+	B(E1)↓=0.37×10^{-5} *3*; B(M1)↓=0.034 *3* $R_{90°/130°}$=1.0 *4*.
6035.4 *4*	23.6 *22*	6035.4	1	0.0	0^+	B(E1)↓=0.32×10^{-5} *3*; B(M1)↓=0.029 *3* $R_{90°/130°}$=0.60 *8*.
6071.8 *8*	16 *6*	6631.1	1	559.103	2^+	B(E1)↓=0.40×10^{-5} *18*; B(M1)↓=0.037 *17* $R_{90°/130°}$=0.85 *19*.
6098.9 *5*	21.7 *23*	6099.1	1	0.0	0^+	B(E1)↓=0.45×10^{-5} *4*; B(M1)↓=0.041 *3* $R_{90°/130°}$=0.56 *9*.
6131.2 *6*	12.1 *19*	6131.2	1	0.0	0^+	B(E1)↓=0.16×10^{-5} *3*; B(M1)↓=0.015 *2* $R_{90°/130°}$=0.51 *14*.
6182.8 *7*	18 *3*	6742.2	1	559.103	2^+	B(E1)↓=0.37×10^{-5} *8*; B(M1)↓=0.033 *7* $R_{90°/130°}$=0.76 *16*.
6190.0 *6*	20 *5*	6748.7	1	559.103	2^+	B(E1)↓=0.48×10^{-5} *15*; B(M1)↓=0.043 *13* $R_{90°/130°}$=1.04 *21*.
6247.4 *9*	29 *3*	6247.4	1	0.0	0^+	B(E1)↓=0.39×10^{-5} *5*; B(M1)↓=0.035 *4* $R_{90°/130°}$=0.67 *14*.
6254.0 *9*	24 *3*	6254.0	1	0.0	0^+	B(E1)↓=0.32×10^{-5} *4*; B(M1)↓=0.029 *4* $R_{90°/130°}$=0.61 *16*.
6297.6 *14*	13.3 *19*	6297.6	1	0.0	0^+	B(E1)↓=0.18×10^{-5} *3*; B(M1)↓=0.016 *2* $R_{90°/130°}$=0.42 *12*.

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^{76}Se(γ,γ') 2012Co17 (continued)

$\gamma(^{76}Se)$ (continued)

E_γ	$I_f^{S\dagger}$	E_i(level)	J_i^π	E_f	J_f^π	Comments
6315.6 *3*	44 *4*	6315.6	1	0.0	0^+	B(E1)↓=0.58×10^{-5} *5*; B(M1)↓=0.053 *5* $R_{90°/130°}$=0.68 *8*.
6323.4 *6*	18 *5*	6881.9	1	559.103	2^+	B(E1)↓=0.52×10^{-5} *20*; B(M1)↓=0.047 *18* $R_{90°/130°}$=1.5 *4*.
6336.5 *20*	20 *4*	6336.5	1	0.0	0^+	B(E1)↓=0.26×10^{-5} *5*; B(M1)↓=0.024 *5* $R_{90°/130°}$=0.48 *23*.
6342.3 *11*	26 *4*	6342.3	1	0.0	0^+	B(E1)↓=0.34×10^{-5} *5*; B(M1)↓=0.030 *5* $R_{90°/130°}$=0.65 *18*.
6387.2 *14*	19 *3*	6387.2	1	0.0	0^+	B(E1)↓=0.25×10^{-5} *4*; B(M1)↓=0.023 *4* $R_{90°/130°}$=0.77 *27*.
6437.8 *19*	15 *4*	6437.8	1	0.0	0^+	B(E1)↓=0.20×10^{-5} *5*; B(M1)↓=0.018 *4* $R_{90°/130°}$=0.9 *4*.
6448.7 *20*	21 *4*	6448.7	1	0.0	0^+	B(E1)↓=0.27×10^{-5} *5*; B(M1)↓=0.024 *4* $R_{90°/130°}$=0.63 *20*.
6497.4 *6*	25 *3*	6497.4	1	0.0	0^+	B(E1)↓=0.32×10^{-5} *4*; B(M1)↓=0.029 *3* $R_{90°/130°}$=0.57 *10*.
6532.4 *3*	41 *4*	6532.4	1	0.0	0^+	B(E1)↓=0.51×10^{-5} *5*; B(M1)↓=0.046 *5* $R_{90°/130°}$=0.51 *7*.
6550.7 *13*	11.2 *20*	6550.7	1	0.0	0^+	B(E1)↓=0.14×10^{-5} *3*; B(M1)↓=0.013 *2* $R_{90°/130°}$=0.55 *19*.
6562.6 *19*	15 *3*	6562.6	1	0.0	0^+	B(E1)↓=0.19×10^{-5} *3*; B(M1)↓=0.017 *3* $R_{90°/130°}$=0.36 *16*.
6570.1 *9*	25 *3*	6570.1	1	0.0	0^+	B(E1)↓=0.32×10^{-5} *4*; B(M1)↓=0.029 *4* $R_{90°/130°}$=0.61 *15*.
6595.9 *7*	22 *3*	6595.9	1	0.0	0^+	B(E1)↓=0.28×10^{-5} *3*; B(M1)↓=0.025 *3* $R_{90°/130°}$=0.83 *18*.
6608.2 *8*	20 *3*	6608.2	1	0.0	0^+	B(E1)↓=0.25×10^{-5} *3*; B(M1)↓=0.023 *3* $R_{90°/130°}$=0.73 *17*.
6630.8 *4*	40 *9*	6631.1	1	0.0	0^+	B(E1)↓=0.77×10^{-5} *13*; B(M1)↓=0.069 *15* $R_{90°/130°}$=1.20 *11*.
6691.2 *8*	11.5 *19*	6691.2	1	0.0	0^+	B(E1)↓=0.14×10^{-5} *2*; B(M1)↓=0.013 *2* $R_{90°/130°}$=0.94 *27*.
6741.9 *4*	61 *5*	6742.2	1	0.0	0^+	B(E1)↓=0.96×10^{-5} *9*; B(M1)↓=0.087 *8* $R_{90°/130°}$=0.71 *8*.
6748.4 *5*	38 *7*	6748.7	1	0.0	0^+	B(E1)↓=0.72×10^{-5} *9*; B(M1)↓=0.065 *11* $R_{90°/130°}$=1.01 *18*.
6881.5 *14*	21 *3*	6881.9	1	0.0	0^+	B(E1)↓=0.47×10^{-5} *8*; B(M1)↓=0.042 *7* $R_{90°/130°}$=0.65 *20*.
6963.9 *13*	18 *4*	7521.7	1	559.103	2^+	B(E1)↓=0.40×10^{-5} *13*; B(M1)↓=0.037 *13* $R_{90°/130°}$=0.74 *22*.
6973.0 *8*	27 *3*	6973.0	1	0.0	0^+	B(E1)↓=0.32×10^{-5} *3*; B(M1)↓=0.029 *3* $R_{90°/130°}$=0.79 *13*.
6982.8 *15*	25 *6*	8197.0	1	1216.154	2^+	B(E1)↓=0.78×10^{-5} *30*; B(M1)↓=0.072 *27* $R_{90°/130°}$=0.9 *3*.
6992.5 *5*	31 *4*	6992.5	1	0.0	0^+	B(E1)↓=0.37×10^{-5} *5*; B(M1)↓=0.033 *5* $R_{90°/130°}$=1.01 *13*.
7241.2 *7*	21 *4*	7241.2	1	0.0	0^+	B(E1)↓=0.24×10^{-5} *5*; B(M1)↓=0.021 *4* $R_{90°/130°}$=1.2 *3*.
7457.6 *7*	19 *4*	7457.6	1	0.0	0^+	B(E1)↓=0.21×10^{-5} *4*; B(M1)↓=0.019 *4* $R_{90°/130°}$=0.8 *3*.
7508.0 *8*	23 *3*	7508.0	1	0.0	0^+	B(E1)↓=0.26×10^{-5} *3*; B(M1)↓=0.023 *3* $R_{90°/130°}$=0.80 *16*.

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^{76}Se(γ,γ') 2012Co17 (continued)

$\gamma(^{76}Se)$ (continued)

E_γ	$I_f^{S\dagger}$	E_i(level)	J_i^π	E_f	J_f^π	Comments
7521.3 *7*	32 *6*	7521.7	1	0.0	0^+	B(E1)↓=0.57×10^{-5} *10*; B(M1)↓=0.051 *9* $R_{90°/130°}$=0.57 *10*.
7546.5 *6*	57 *6*	7546.5	1	0.0	0^+	B(E1)↓=0.62×10^{-5} *6*; B(M1)↓=0.056 *6* $R_{90°/130°}$=0.84 *12*.
7658.3 *12*	13.9 *23*	7658.3	1	0.0	0^+	B(E1)↓=0.15×10^{-5} *2*; B(M1)↓=0.014 *2* $R_{90°/130°}$=0.79 *26*.
7698.2 *9*	37 *7*	7698.2	1	0.0	0^+	B(E1)↓=0.40×10^{-5} *7*; B(M1)↓=0.036 *7* $R_{90°/130°}$=0.56 *13*.
7970.8 *6*	36 *10*	8526.6	1	559.103	2^+	B(E1)↓=0.90×10^{-5} *33*; B(M1)↓=0.082 *30* $R_{90°/130°}$=0.93 *22*.
7978.5 *8*	25 *6*	7978.5	1	0.0	0^+	B(E1)↓=0.26×10^{-5} *6*; B(M1)↓=0.024 *6* $R_{90°/130°}$=0.54 *13*.
8196.5 *13*	27 *4*	8197.0	1	0.0	0^+	B(E1)↓=0.52×10^{-5} *9*; B(M1)↓=0.047 *8* $R_{90°/130°}$=0.78 *25*.
8394.4 *10*	30 *4*	8394.4	1	0.0	0^+	B(E1)↓=0.29×10^{-5} *4*; B(M1)↓=0.027 *4* $R_{90°/130°}$=0.88 *22*.
8526.1 *11*	35 *8*	8526.6	1	0.0	0^+	B(E1)↓=0.73×10^{-5} *12*; B(M1)↓=0.066 *11* $R_{90°/130°}$=0.55 *14*.
8709.4 *13*	42 *6*	8709.4	1	0.0	0^+	B(E1)↓=0.40×10^{-5} *6*; B(M1)↓=0.036 *6* $R_{90°/130°}$=0.72 *21*.

† Integrated cross section in eVb.
‡ Nominal values.

^{76}Se(γ,γ′) 2012Co17

Level Scheme

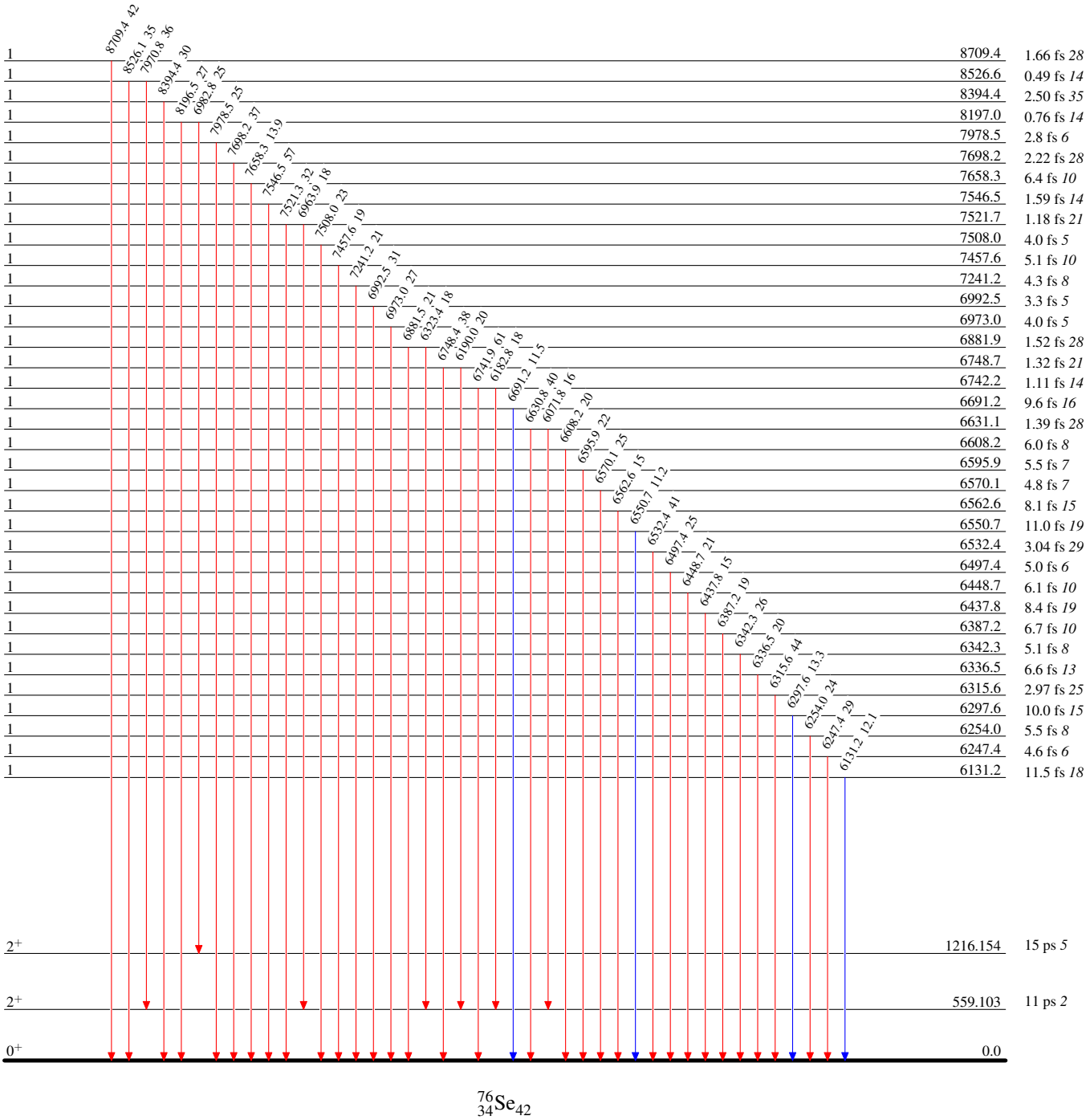
Intensities: Integrated σ (eVb)

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$

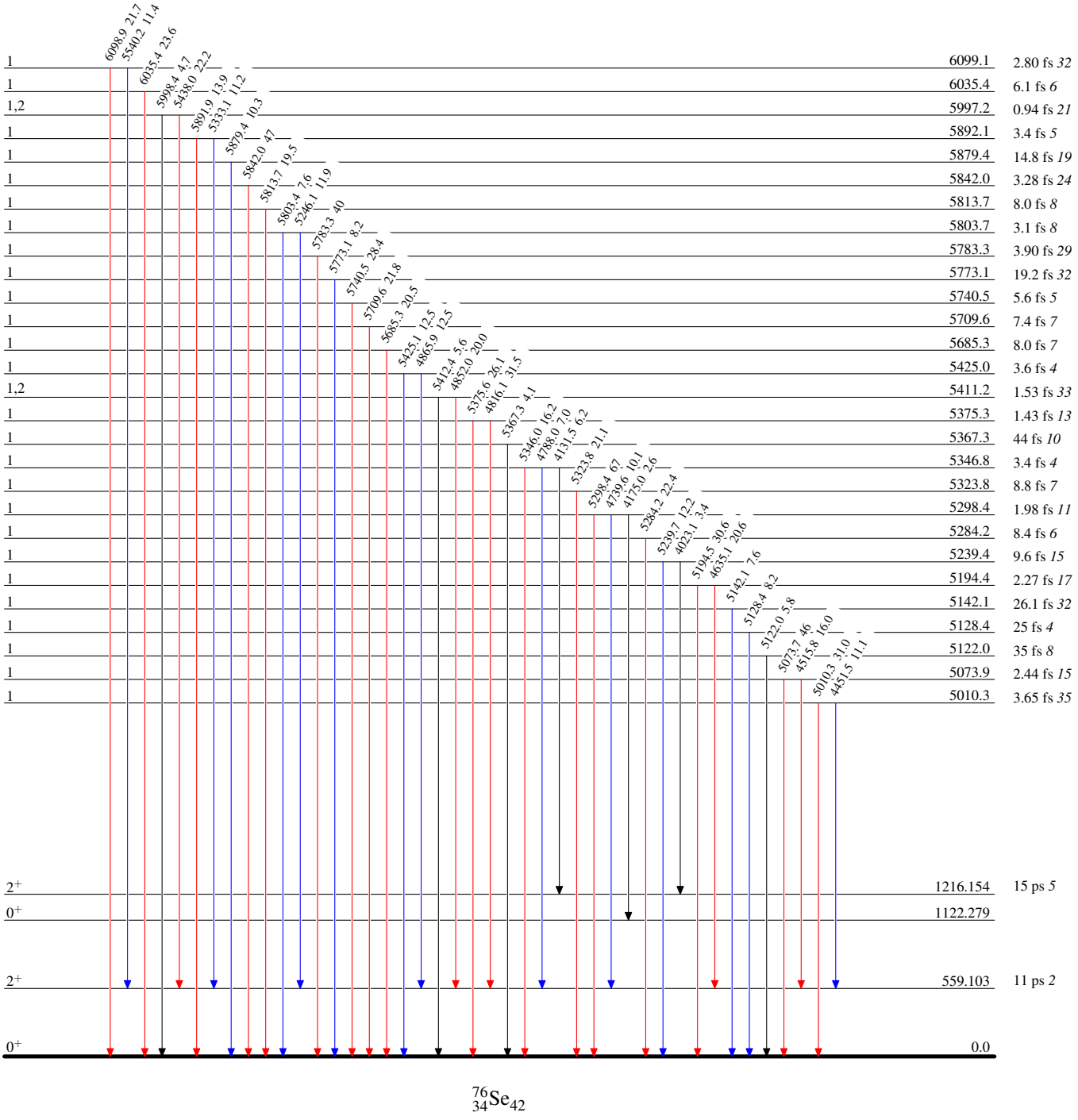


$^{76}_{34}Se_{42}$

^{76}Se(γ,γ′) 2012Co17

Level Scheme (continued)

Intensities: Integrated σ (eVb)



$^{76}_{34}Se_{42}$

^{76}Se(γ,γ′) 2012Co17

Level Scheme (continued)

Intensities: Integrated σ (eVb)