^{81}Se IT decay (57.28 min) 1971Na18

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 109, 2257 (2008)	15-Aug-2008

Parent: ^{81}Se: E=103.00 *6*; $J^\pi=7/2^+$; $T_{1/2}$=57.28 min *2*; %IT decay=99.949 *14*

^{81}Se-%IT decay: Iγ normalization is from Ti(103)=100. Branching is from (Ti(IT) + Σ (I(γ+ce) to ^{81}Br g.s.))=100%, assuming $\alpha(103\gamma)$=6.79 and $\alpha(260\gamma)$=0.0456, and using I(260γ, ^{81}Br)/I(103γ, ^{81}Se)=0.0038 *10*, the weighted average of 0.0033 *3* (1971Do09) and 0.0059 *6* (1969Zo06). This leads to $\%\beta^-$=0.051 *14*.

Others: 1949Be59, 1952Ru10, 1955Dr43, 1968Ra35, 1969Zo06, 1971Do09, 1972De43, 1974Ch11, 1975Kr08.

^{81}Se Levels

E(level)[†]	J^π[‡]	$T_{1/2}$[‡]
0	$1/2^-$	18.45 min *12*
103.01 *6*	$7/2^+$	57.28 min *2*

† From Eγ.
‡ From Adopted Levels.

$\gamma(^{81}Se)$

Iγ normalization: Iγ normalization is from Ti(103)=100. Branching is from (Ti(IT) + Σ (I(γ+ce) to ^{81}Br g.s.))=100%, assuming $\alpha(103\gamma)$=6.79 and $\alpha(260\gamma)$=0.0456, and using I(260γ, ^{81}Br)/I(103γ, ^{81}Se)=0.0038 *10*, the weighted average of 0.0033 *3* (1971Do09) and 0.0059 *6* (1969Zo06). This leads to $\%\beta^-$=0.051 *14*.

E_γ[†]	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ	α[&]	Comments
103.01 *6*	100	103.01	$7/2^+$	0	$1/2^-$	E3(+M4)	<0.0057[#]	6.79	α(K)exp=7.1 *3*; α(L)exp=1.6 *3* α(K)=5.29 *8*; α(L)=1.283 *19*; α(M)=0.200 *3*; α(N+..)=0.01346 *20* α(N)=0.01346 *20* α(K)exp, α(L)exp: from simultaneous measurement of γ and electron spectra, respectively, withGe(Li) detector and Si(Li) spectrometer; system calibrated against ^{141}Ce(145 keV), ^{203}Hg(279 keV), ^{198}Au(442 keV), ^{137}Cs(662 keV) lines (1971Na18). Other: α(K)exp=8.6 *24* (1955Dr43); α(K)exp=8.3 *3* from I(K x ray)/I(103γ)=4.9 *2* and ω_K=0.589 (1968Ra35); α(K)exp/α(L+...)exp=3.9 (1949Be59), 4.0 (1955Dr43); α(K)exp/α(L)exp=3.0 (1952Ru10).

† Weighted average of 103.1 *1* (1969Zo06), 103.0 *2* (1971Do09), 102.89 *10* (1971Ra07), 103.0 *2* (1974Ch11), 102.9 *2* (1975Kr08), 103.3 *2* (1967Pr06).
‡ From α(K)exp, α(L)exp (1971Na18).
# From α(K)exp (1971Na18), abs(δ)=0.178 *15*; however, this exceeds RUL. Evaluator assumes α(K)exp datum is too large and adopts δ<0.0057 based on B(M4)(W.u.)<30. α(L)exp from 1971Na18 gives abs(δ)=0.15 *+6−10*.
@ For absolute intensity per 100 decays, multiply by 0.128 *3*.
& Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

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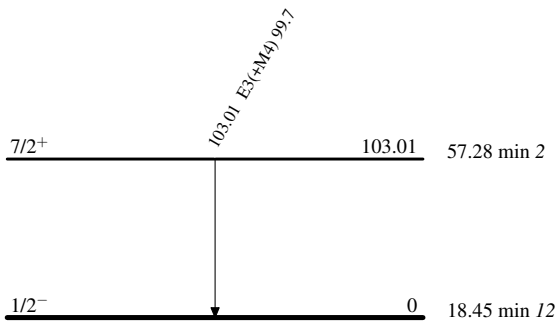
Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
%IT=99.949 *14*



$^{81}_{34}Se_{47}$