^{9}Be(^{70}Se,^{70}Se′γ) 2014Ni09

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	G. Gürdal, E. A. Mccutchan	NDS 136, 1 (2016)	1-Jul-2016

2014Ni09: ^{70}Se beam from fragmentation of 150 MeV/nucleon ^{78}Kr beam on a ^{9}Be target, followed by separation using A1900 fragment separator at NSCL-MSU facility. Measured Eγ, Iγ, $T_{1/2}$ by RDDS technique using the TRIple plunger device (TRIPLEX) placed at the target position of S800 spectrograph. Calibration of distances was done using known lifetime of 4.2 ps *2* for first 2^+ state in ^{62}Zn, which was strongly populated in the reaction used. Gamma rays were detected gated on recoil particles using SeGA array of 15 segmented HPGe detectors.

^{70}Se Levels

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	Comments
0	0^+		
945	2^+	2.27 ps *26*	
1600	2^+	<5.2[@] ps	$T_{1/2}$: Upper limit from effective $T_{1/2}$ of 4.66 ps *51* (2014Ni09).
2038	4^+	<3.3[@] ps	$T_{1/2}$: Upper limit from effective $T_{1/2}$ of 3.04 ps *26* (2014Ni09).
2519	$3^{(-)}$	<1.7[@] ps	$T_{1/2}$: Upper limit from effective $T_{1/2}$ of 1.29 ps *40* (2014Ni09).

[†] From Eγ.
[‡] From the Adopted Levels.
[#] From Recoil-distance Doppler Shift (RDDS) method (2014Ni09).
[@] Effective half-life from recoil-distance Doppler Shift (RDDS) method (2014Ni09), not corrected for side feeding. Therefore true lifetime can be shorter than this value. The quoted value should be considered as an upper limit.

γ(^{70}Se)

E_γ[†]	I_γ[†]	E_i(level)	J^π_i	E_f	J^π_f
655	7.1 *10*	1600	2^+	945	2^+
945	100	945	2^+	0	0^+
1093	30.5 *16*	2038	4^+	945	2^+
1574	16.5 *13*	2519	$3^{(-)}$	945	2^+

[†] From 2014Ni09.

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Level Scheme

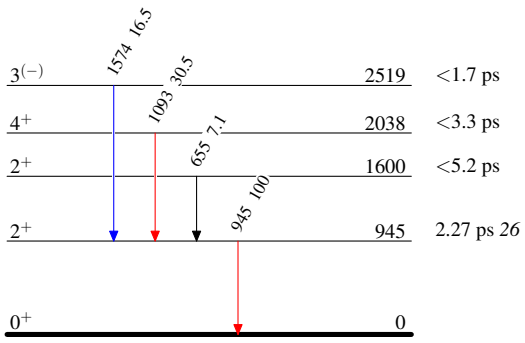
Intensities: Relative I_γ

Legend

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

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

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



$^{70}_{34}Se_{36}$