$^9\text{Be}(^{238}\text{U,X}\gamma)$ 2014Go20

	Type	Author	History Citation	Literature Cutoff Date
	Full Evaluation	Balraj Singh	NDS 147, 382 (2018)	1-Dec-2017

2014Go20: E(^{238}U)=1 GeV/nucleon from UNILAC-SIS-18 accelerator facility at GSI. Reaction products separated in mass and atomic number by FRS magnetic spectrometer. Fragment identification achieved by measurement of magnetic rigidity and time-of-flight employing plastic scintillators and ionization chambers. Isotopes are separated by Z and A/q ratio with only the fully ionized (bare) ions selected. Separated fragments of interest are implanted in double-sided silicon strip (DSSSD) detectors. The gamma rays are detected by RISING array of 15 Ge Clusters, each cluster with seven elements. Measured Eγ, Iγ, $\gamma\gamma$-coin, half-life of an isomer. Deduced levels, J, π, isomer, configuration. Comparison with large-scale shell model calculations. Discussed B(E2) values.

^{217}Bi Levels

E(level)[†]	J$^{\pi}$[#]	T$_{1/2}$	Comments
0[‡]	(9/2$^-$)	98.5 s _13_	T$_{1/2}$: from Adopted Levels.
744[‡] _1_	(13/2$^-$)		
1236[‡] _1_	(17/2$^-$)		
1429 _2_	(15/2$^-$,17/2$^-$)		
1436[‡] _2_	(21/2$^-$)		
1436+x[‡]	(25/2$^-$)	3.0 μs _2_	%IT=100
			Configuration=$\pi h_{9/2} \otimes \nu(2g_{9/2}^2)_{8^+}$.
			E(level): x=20-90 keV (2014Go20) based on no K-x rays which can be assigned to a transition from this level, and systematics of neighboring nuclides.
			T$_{1/2}$: average of time distributions and exponential fits for 200- and 492-keV γ rays (2014Go20). Other: 2.9 μs _2_ and 2.8 μs _1_ from decay curves for 492γ and 744γ, respectively (2014Go20).

[†] From Eγ data, assuming 1 keV energy uncertainty for each γ ray.
[‡] Member of multiplet with configuration=$\pi h_{9/2} \otimes (^{216}\text{Pb core})$.
[#] From 2014Go20 for excited states based on systematics of lighter even-odd Bi isotopes.

$\gamma(^{217}\text{Bi})$

E$_\gamma$	I$_\gamma$[‡]	E$_i$(level)	J$_i^{\pi}$	E$_f$	J$_f^{\pi}$	Mult.	α[#]	I$_{(\gamma+ce)}$[†]	Comments
x		1436+x	(25/2$^-$)	1436	(21/2$^-$)				E$_\gamma$: x=20-90 keV (2014Go20) based on no K-x rays which can be assigned to a transition from this level, and systematics of neighboring nuclides.
200	63 _6_	1436	(21/2$^-$)	1236	(17/2$^-$)	[E2]	0.449	92 _9_	
492	84 _8_	1236	(17/2$^-$)	744	(13/2$^-$)	[E2]	0.0319	87 _8_	
685	14 _4_	1429	(15/2$^-$,17/2$^-$)	744	(13/2$^-$)	[M1,E2]	0.033 _18_	14 _4_	α: value overlaps M1 and E2.
744	99 _11_	744	(13/2$^-$)	0	(9/2$^-$)	[E2]	0.0127	100 _11_	

[†] From 2014Go20.
[‡] Deduced by evaluator from transition intensities and conversion coefficients.
[#] 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.

^{9}**Be**(^{238}**U,X**γ)   **2014Go20**

Level Scheme

Intensities: Relative I$_\gamma$

Legend

→ I$_\gamma$ < 2%×I$_\gamma^{max}$
→ I$_\gamma$ < 10%×I$_\gamma^{max}$
→ I$_\gamma$ > 10%×I$_\gamma^{max}$
● Coincidence

$^{217}_{83}$Bi$_{134}$