

Adopted Levels, Gammas

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	A. A. Sonzogni, M. Fadil, and B. Pfeiffer		NDS 110,2815 (2009)	30-Sep-2009

Q(β^-)=10094 4; S(n)=4256 5; S(p)=12166 4; Q(α)=-9055 5 [2012Wa38](#)

Note: Current evaluation has used the following Q record 10094 4 4256 4 12166 4 -9055 4 [2009AuZZ](#).

Q(β^-n)=1416 5 ([2009AuZZ](#)) The values in [2003Au03](#) are: Q(β^-)=9870 300, S(n)=4270 370, S(p)=12470 360, Q(α)=-9370 330, Q(β^-n)=1190 300; all from systematics.

⁸⁴As evaluated by **A.A. Sonzogni, M. Fadil, and B. Pfeiffer** .

See ⁸⁴Ge β^- decay for a list of unplaced gamma rays.

A 0.65 s 15 isomer based on observation of 408 γ (⁸⁴Se) and 882 γ (⁸⁴Br) in delayed separation of arsenic fraction was reported by [1974KrZG](#) (also quoted by [1975Kr08](#)). This activity was not seen by [1991Ho10](#) in neutron-induced fission of ²³⁵U and by [1996WaZX](#) in proton-induced fission of ²³²Th. The experimental conditions in [1991Ho10](#) were different from those in [1974KrZG](#) and no details are provided in [1996WaZX](#). At this stage it can only be left as an open question whether this isomeric activity exists.

Precise atomic mass measurement: [2008Ha23](#) (Penning-trap system). Other: [2006Ha62](#) (note misprint of mass excess, it should be -75.7 MeV instead of quoted -65.7 MeV, as per e-mail reply from authors to Bernd Pfeiffer in April 2009.).

⁸⁴As Levels

Cross Reference (XREF) Flags

- A ⁸⁴Ge β^- decay
- B ⁸⁵Ge β^-n decay

E(level) [†]	J ^{π}	T _{1/2}	XREF	Comments
0.0	(3 ⁻)	4.2 s 5	AB	% β^- =100; % β^-n =0.18 10 (2002Pf04) J ^{π} : strong feeding of 2 ⁺ , (4 ⁺) levels, log ft=6.4, 6.5, respectively. Negative parity is suggested by shell model. T _{1/2} : weighted average of 4.5 s 2 (1991Om01), 5.3 s 4 (1975Kr08), 3.24 s 26 (1996WaZX). Others: 5.8 s 5 (1968De19) and 4.02 s 3 (1993Ru01). % β^-n from 2002Pf04 ; others: 0.28 4 (1993Ru01), 0.13 6 (1973Kr06), 0.06 3 (1976NiZZ).
99.9 3			A	
142.6 4			A	
242.4 3			A	
589.5 7			A	
1198.3 9			A	

[†] From least-squares fit to E γ .

γ (⁸⁴As)

E _i (level)	E γ [†]	I γ	E _f	J ^{π} _f
99.9	99.9 3	100	0.0	(3 ⁻)
142.6	42.7 3	100	99.9	
242.4	242.4 3	100	0.0	(3 ⁻)
589.5	347.1 6	100	242.4	
1198.3	608.8 6	100	589.5	

[†] From ⁸⁴Ge β^- decay.

Adopted Levels, GammasLevel Scheme

Intensities: Relative photon branching from each level

