Adopted Levels

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	30-Nov-2021

Q(β^-)=12460 *SY*; S(n)=4150 *SY*; S(p)=14300 *SY*; Q(α)=−9210 *SY* 2021Wa16

Estimated uncertainties (2021Wa16): 300 for Q(β^-), 360 for S(n), 500 for S(p), 300 for Q(α).

Q(β^-n)=9280 *300*, S(2n)=7060 *300*, S(2p)=32240 *580* (syst, 2021Wa16). Q(β^-2n)=3750 *300* (syst), Q(β^-3n)=−240 *300* (syst) deduced by evaluator from mass excesses in 2021Wa16.

1994Be24, 1997Be12: ^{89}As identified in Pb(^{238}U,F),E=750 MeV/nucleon reaction from measured fission fragment yields with a fragment separator (FRS) at GSI using time-of-flight technique.

Mass measurement: 2008Ha23.

Theoretical calculations: consult NSR database at www.nndc.bnl.gov/nsr/ or additional document records in this dataset for three primary references for half-life and β^-n decay mode of ^{89}As.

Additional information 1.

^{89}As Levels

E(level)	Comments
0	%β^-=100; %β^-n=?; %β^-2n=? Only β^- decay is possible, followed by delayed neutron emission, thus 100% β^- decay is assigned by inference. The β^-3n decay mode is unlikely as Q(β^-3n)=−240 *300* (syst). Theoretical $T_{1/2}$=58.9 ms, %β^-n=72, %β^-2n=0 (2019Mo01). Theoretical $T_{1/2}$=65.9 ms, %β^-n=61.8, %β^-2n=0.2 (2016Ma12). E(level): the observed fragments are assumed to belong to g.s. of ^{89}As. J^π: $5/2^-$ proposed from systematics (2021Ko07), $1/2^-$ in theoretical calculation (2019Mo01). $T_{1/2}$: half-life of decay of ^{89}As has not been measured. $T_{1/2}$>300 ns from time-of-flight of fission fragments (1997Be12), and >150 ns from time-of-flight in 1994Be24. General decreasing trend of half-lives with increasing neutron numbers in neutron-rich isotopes suggests $T_{1/2}$<200 ms from measured $T_{1/2}$=945 ms for ^{86}As, 484 ms for ^{87}As and 200 ms for ^{88}As. Values for ^{86,87,88}As are taken from ENSDF database (October 13, 2021 version). $T_{1/2}$=220 ms from systematics (2021Ko07).