Adopted Levels

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 178, 41 (2021).	12-Nov-2021

Q(β^-)=−12670 *SY*; S(n)=14100 *SY*; S(p)=−100 *SY*; Q(α)=−2370 *SY* 2021Wa16

Estimated uncertainties: ΔQ(β^-)=540, ΔS(n)=290, ΔS(p)=200, ΔQ(α)=290 (2021Wa16).

Q(ε)=14780 *200*, Q(εp)=9730 *200*, S(2n)=31260 *360*, S(2p)=2120 *200* (syst,2021Wa16).

1995Bl06: ^{64}As produced and identified in Ni(^{78}Kr,X), E=73 MeV/nucleon at GANIL using LISE3 separator and time-of-flight.

2002Bl17, 2002Lo13: later work by the same group as 1995Bl06, measured half-life, but the statistics were low.

2007Bl09: ^{64}As produced in Ni(^{70}Ge,X),E=71.6 MeV/nucleon at GANIL using LISE3 separator. Measured production σ.

2014Ro14: ^{64}As isotope produced in the fragmentation of 70 MeV/nucleon ^{78}Kr beam with Ni target. Fragments selected with the LISE3 separator at GANIL and identified by time-of-flight and energy loss. Measured half-life of ^{64}As ground-state decay by (fragment)β, (fragment)γ correlations using set of four Si detectors (an energy loss ΔE detector, a degrader, DSSD and Si(Li)) for particles surrounded by four HPGe Clover detectors, three EXOGAM and one mini-clover Ge detector for γ rays.

2017GoZT (thesis): ^{64}As produced in ^{9}Be(^{78}Kr,X), E(^{78}Kr)=345 MeV/nucleon reaction, followed by separation of fragments using BigRIPS and Zero Degree Spectrometers at RIBF-RIKEN. Measured half-life of the decay of ^{64}As.

Theory references: consult the NSR database at www.nndc.bnl.gov for six primary references dealing with nuclear structure calculations.

Additional information 1.

^{64}As Levels

E(level)	$T_{1/2}$	Comments
0	69.0 ms *14*	%ε+%β^+=100; %εp=? ^{64}Se is most likely stable towards proton decay, as S(p) is only marginally negative, and a large number of events are assigned to this isotope in A/Q Fig. 1 of 2016Bl05. As only the β^+ decay has been observed, %ε+%β^+=100 is assigned by inference. T_z=−1. E(level): the observed activity is assumed to correspond to the g.s. of ^{64}As. $T_{1/2}$: extracted from a fit to measured ^{64}As decay curve in 2020Gi02 and 2017GoZT by taking into account the contribution from decay of the ^{64}Ge daughter with $T_{1/2}$=63.7 s *25*. Others: 72 ms *6* measured by 2014Ro14 from (fragment)β^+-correlated decay curve. Value of 18 ms *+43−7* measured by 2002Lo13 is in disagreement with those from 2014Ro14 and 2020Gi02. J^π: 2021Ko07 suggest 0^+ from systematics. Production σ=0.3 pb *2* (2007Bl09) in Ni(^{70}Ge,X), E=71.6 MeV/nucleon.