

**Adopted Levels: not observed**

<u>Type</u>	<u>Author</u>	<u>History Citation</u>	<u>Literature Cutoff Date</u>
Full Evaluation	Jun Chen	NDS 196,17 (2024)	30-Sep-2023

$Q(\beta^-) = -16650$  syst;  $S(n) = 17150$  syst;  $S(p) = -1350$  syst;  $Q(\alpha) = -2170$  syst [2021Wa16](#)

$\Delta Q(\beta^-) = 540$ ,  $\Delta S(n) = 360$ ,  $\Delta S(p) = 240$ ,  $\Delta Q(\alpha) = 260$  (syst, [2021Wa16](#)).

$S(2n) = 32440$  360,  $S(2p) = 940$  200,  $Q(\epsilon p) = 11200$  200 (syst, [2021Wa16](#)).

[1991Mo10](#), [1993Wi03](#), [1993Wi18](#): <sup>58</sup>Ni(<sup>78</sup>Kr,X) at E=65 MeV/nucleon. Identification of new nuclei near proton-drip line  $31 \leq Z \leq 38$  at NSCL. No identification of <sup>63</sup>As.

[2005St29](#), [2005St34](#): <sup>9</sup>Be(<sup>78</sup>Kr,X) <sup>63</sup>As isotope was searched in fragmentation of <sup>78</sup>Kr<sup>34+</sup> beam on a <sup>9</sup>Be target at E=140 MeV/nucleon. Reaction products selected according to their momentum/charge ratio using the A1900 spectrometer of the National Superconducting Cyclotron Laboratory (NSCL). Measured fragments, tof and energy losses, timing scintillator (SCI), a position-sensitive parallel-plate avalanche counter (PPAC) and three silicon detectors (PIN). Half-life deduced from production yields.

Theoretical calculations:

[2021KI02](#), [2019Zo02](#), [1998Ra28](#): calculated mass excess, S(p), S(2p).

[2016Me17](#): calculated magnetic dipole moment of ground state.

[2002La37](#), [2001La01](#): calculated S(p), deformation parameter.

[1997Or04](#): calculated binding energy.

<sup>63</sup>As Levels

<u>E(level)</u>	<u>T<sub>1/2</sub></u>	<u>Comments</u>
0?	<43 ns	%p=? J <sup>π</sup> : 3/2 <sup>-</sup> from theory in <a href="#">2019Mo01</a> and systematics in <a href="#">2021Ko07</a> . T <sub>1/2</sub> : estimated by <a href="#">2005St29</a> from a time-of-flight of 363 ns and an expectation of 340 <sup>63</sup> As to be observed at the focal plane. No events could be assigned to <sup>63</sup> As, implying that <sup>63</sup> As is unbound towards proton emission ( <a href="#">2005St29</a> ). Calculated T <sub>1/2</sub> (β decay)=86 ms ( <a href="#">2019Mo01</a> ).