Adopted Levels

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

Q(β^-)=15880 *syst*; S(n)=1730 *syst*; S(p)=20460 *syst*; Q(α)=−14100 *syst* 2021Wa16
ΔQ(β^-)=610, ΔS(n)=640, ΔS(p)=780, ΔQ(α)=780 (syst,2021Wa16).
S(2n)=5630 *580*, S(2p)=39450 *940*, Q(β^-n)=11280 *570* (syst,2021Wa16).
2009Ta05,2009Ta24: ^{63}Ti was produced and identified by fragmentation of ^{76}Ge beam at 132 MeV/nucleon at NSCL facility using A1900 fragment separator combined with S800 analysis beam line to form a two stage separator system. The transmitted fragments were analyzed event-by-event in momentum and particle identification. The nuclei of interest were stopped in eight Si diodes which provided measurement of energy loss, nuclear charge and total kinetic energy. The time-of-flight of each particle that reached the detector stack was measured in four different ways using plastic scintillators, Si detectors, and parallel-plate avalanche counters. The simultaneous measurement of ΔE signals, the magnetic rigidity, total kinetic energy and the time-of-flight (tof) provided unambiguous identification of the atomic number, charge state and mass number. Measured cross sections.
Theoretical calculations:
2023Ta03: calculated isotope production cross sections.
2011Gu03: calculated rms radii of p-wave valence neutron distribution.
1985Bu27,1971Pe16: calculated isomeric state single nucleon decay $T_{1/2}$.

^{63}Ti Levels

E(level)	Comments
0	%β^-=?; %β^-n=? σ=10^{-11} mb *+2−1* (read by the evaluator from figure 2 of 2009Ta05 and also figure 8 and 9 of 2009Ta24). E(level): fragment observed by 2009Ta05 is assumed to be in the ground state of ^{63}Ti. J^π: $1/2^-$ (syst,2021Ko07), $9/2^+$ (theory,2019Mo01). $T_{1/2}$: >360 ns estimated from time-of-flight of ≈360 ns for ^{60}Ge and ^{64}Se as in 2005St29 (from the same lab as 2009Ta05). Actual half-life is expected to be much longer as suggested by systematics value of 10 ms (2021Ko07) and calculated values from 2019Mo01 and 2021Mi17. Calculated %β^-1n=32, %β^-2n=3 (2019Mo01). Calculated %β^-1n=12.03, %β^-2n=2.17, %β^-3n=0.004 (2021Mi17). Calculated $T_{1/2}$(β decay)=12.3 ms (2019Mo01), 11.1 ms (2021Mi17).