Adopted Levels:not observed

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	31-Mar-2015

S(n)=13900 *CA*; S(p)=−1470 *SY*; Q(α)=2770 *SY* 1997Mo25,2012Wa38
S(p) and Qα from 2012Wa38, S(n) from theory (1997Mo25).
Estimated uncertainties (2012Wa38): 310 for S(n), 360 for Qα.
S(2n)=26030 (1997Mo25,theory). S(2p)=2140 *420*, Q(εp)=7230 *300* (syst,2012Wa38).
2013Su23: search for ^{103}Sb nuclide in Be(^{124}Xe,X), E(^{124}Xe)=345 MeV/nucleon beam produced by the cascade operation of the RBIF accelerator complex of the linear accelerators RILAC and RILAC-II and the four cyclotrons, RRC, fRC, IRC, and SRC. ^{103}Sb nuclei were not detected on the basis of magnetic rigidity, time-of-flight and energy loss (TOF-Bρ-ΔE method) of the fragments using BigRIPS fragment separator, atomic number Z of fragment by TOF and ΔE, and A/Q (atomic mass/charge state) of fragment by Bρ and TOF. Time-of-flight was measured using thin plastic scintillators, ΔE by MUSIC ionization chambers, and Bρ by particle trajectory reconstructions. Experiments were performed at RIBF-RIKEN facility. Measured A/Q versus Z distributions, deduced no observation of ^{103}Sb nuclei. Theoretical calculations were performed using fission model based LISE^{++} code, and empirical calculations were made using EPAX3.01 and EPAX2.15 codes.
Deduced particle-unbound nature of ^{103}Sb, a drip-line nuclide.
Earlier studies:
1995Ry03 (also 1995Le14): Ni(^{112}Sn,X),E=58, 62 MeV/nucleon; measured heavy fragments energy loss, total kinetic energy; deduced evidence for ^{103}Sb, estimated half-life from time-of-flight. Experiments performed at GANIL using LISE3 spectrometer.

^{103}Sb Levels

E(level)	$T_{1/2}$	Comments
0?	<49 ns	%p=? $T_{1/2}$: from time-of-flight and expected 560 counts from cross section calculations, but none observed. Others: >1.5 μs (1995Ry03); <50 ns (quoted by 2012Au07 from Hinke et al., Leuven conference 2011, p200; <200 ns (quoted by 2012Au07 from Straub et al., GSI report 2010, p151). J^π: $1/2^+$ in theoretical calculations (1997Mo25); $5/2^+$ from systematics in 2012Au07.