Adopted Levels

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 195,1 (2024)	19-Sep-2023

Q(β^-)=8340 *syst*; S(n)=4030 *syst*; S(p)=11100 *syst*; Q(α)=−4320 *syst*   2021Wa16
ΔQ(β^-)=300, ΔS(n)=300, ΔS(p)=500, ΔQ(α)=420 (syst,2021Wa16).
S(2n)=9290 *300*, S(2p)=24420 *500*, Q(β^-n)=2560 *300* (syst,2021Wa16).
2022Ki23 compiled for XUNDL database by B. Singh (McMaster).
2017Wu04 compiled for XUNDL database by F.G. Kondev (ANL) (including *Supplemental Material* table of 94 measured
    β-decay half-lives).
2022Ki23: ^{162}Pm nuclide produced in ^{9}Be(^{238}U,F),E(^{238}U)=345 MeV/nucleon reaction at RIBF-RIKEN. Used energy loss (ΔE),
    magnetic rigidity (Bρ) and time-of-flight (tof) with BigRIPS separator, multisampling ionization chambers (MUSIC), parallel-plate
    avalanche counters (PPACs) and plastic scintillators for separating fission fragments. Radioactive ions implanted in Advanced
    Implantation Detector Array (AIDA) (a stack of six double-sided silicon strip detectors (DSSSDs)), centered in the BRIKEN
    neutron detector (140 ^{3}He-filled proportional counters embedded in large polyethylene moderator matrix). Measured γ, nγ-coin,
    (implanted ions)(β^-) correlations, and (implanted ions)(β^-)(neutron) correlations. Deduced $T_{1/2}$ and %β^-n.
2017Wu04: ^{162}Pm nuclide produced at RIBF-RIKEN facility using ^{9}Be(^{238}U,F) reaction at E=345 MeV/nucleon. Two
    experiments, optimized for the transmission of ^{158}Nd and ^{170}Dy ions, were carried out with average beam intensities of 7 pnA and
    12 pnA, respectively. Identification of the nuclide of interest was made in the BigRIPS separator by determining the atomic number
    and the mass-to-charge ratio of the ion using the tof-Bρ-ΔE method. Reaction products were transported through the ZeroDegree
    Spectrometer and implanted into the beta-counting system WAS3ABi that was surrounded by EURICA array comprising of 84
    HPGe detectors. Typical implantation rate about 100 ions/s. Measured: implanted ion-β^--t, implanted ion-β^--γ-t and implanted
    ions-γ-t correlations. Deduced $T_{1/2}$.
2012Ku26: ^{162}Pm produced and identified in ^{9}Be(^{238}U,F), E=1 GeV/nucleon reaction using SIS-18 synchrotron facility at GSI.
    Target=1.6 g/cm^2 ^{9}Be placed at the entrance of projectile Fragment Separator (FRS). Particle identification achieved by
    event-by-event in-flight analysis of time-of-flight, energy loss measurement, and magnetic rigidity (tof-ΔE′-Bρ). Time-of-flight
    measured using two plastic scintillation detectors, energy loss or deposit by ionization chambers (MUSIC), and magnetic rigidity by
    four time-projection chambers (TPC), which also provided energy deposit information. Isomer tagging method for known μs
    isomers was used to verify event-by-event identification and in-flight separation of new isotopes. Gamma rays from known isomers
    were recorded in coincidence with the incoming ions using either the RISING array of Ge detectors at GSI or only two Ge
    detectors, a stopper foil and a scintillator for veto signal. Measured production cross section. Comparison of measured σ with
    predictions from ABRABLA model and EPAX-3 model.

^{162}Pm Levels

E(level)	J$^\pi$	$T_{1/2}$	Comments
0	(2$^+$)	467 ms +*38−18*	%β^-=100; %β^-n=1.79 *19* (2022Ki23)
			J$^\pi$: From systematics of known quasiparticle states in neighboring nuclei and the proposed configuration (by the evaluator). The assignment is tentative.
			$T_{1/2}$: from 2022Ki23 by binned maximum likelihood fitting of the (implant)β correlated decay curve and using Bateman equations to account for parent, daughter, grand-daughter, and great-grand-daughter, as well as for β^--delayed neutron branch of the decay chain. Other: 630 ms *180* (2017Wu04, by least-squares and maximum-likelihood fitting of decay curves included contributions from parent, daughter and grand-daughter decays, plus constant background).
			configuration: From systematics of well-deformed nuclei in this mass region, the π5/2[532] and ν1/2[521] Nilsson orbitals are expected near the proton and neutron Fermi surfaces, respectively. Thus, using the Gallagher-Moszkowski rule, one may expect the K^π=2$^+$, π5/2[532]⊗ν1/2[521] configuration for the ground state. The assignment is made by the evaluator (F.G. Kondev).
			Production σ(at 1 GeV/nucleon)=25 nb *3* (2012Ku26).