Adopted Levels

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. J. Chiara and F. G. Kondev	NDS 111,141 (2010)	1-Oct-2009

S(n)=1.069×10^4 *9*; S(p)=2118 *16*; Q(α)=7637 *7* 2012Wa38

Note: Current evaluation has used the following Q record 10650 *80* 2096 *22* 7636 8 2003Au03.

2005Uu02: Isotope produced by ^{141}Pr(^{65}Cu,2n) and ^{170}Yb(^{36}Ar,2n) reactions; 1-mg/cm^2 ^{141}Pr target and 0.5-mg/cm^2 ^{170}Yb target, enriched to 70%; gas-filled recoil separator RITU, 300 μm thick segmented Si detector with a total area of 35 by 80 mm^2; measured E(α), $T_{1/2}$(α), E(α_1)-E(α_2)-E(α_3)-times; observed ^{204}Ra – ^{200}Rn – ^{196}Po decay chain.

1995Le15,1996Le09: Isotope produced by ^{175}Lu(^{35}Cl,6n) and ^{170}Yb(^{40}Ar,6n) reactions. 320–μg/cm^2 ^{175}Lu target and 360–μg/cm^2 ^{170}Yb target, enriched to 72%; gas-filled recoil separator RITU, position sensitive PIPS detector; measured E(α), $T_{1/2}$(α), E(α_1)-E(α_2)-E(α_3)-times; Observed: ^{204}Ra – ^{200}Rn – ^{196}Po decay chain.

1995Le04: Isotope produced by ^{182}W(^{28}Si,6n) reaction at beam energies of 164 and 170 MeV; 1-mg/cm^2 ^{182}W target, enriched to 89%; gas-filled recoil separator RITU, 60 μm-thick DSSD with 48 strips on each side, parallel-plate avalanche counter detector for mass to charge identification; measured E(α), $T_{1/2}$(α), E(α_1)-E(α_2)-E(α_3)- times; Observed: ^{204}Ra – ^{200}Rn – ^{196}Po decay chain.

The assignment to ^{204}Ra by 2005Uu02, 1995Le15, 1996Le09 and 1995Le04 is based on spatial and time correlations between the implant residues and subsequent parent-daughter-grand-daughter α decays;

^{204}Ra Levels

E(level)	J^π	$T_{1/2}$	Comments
0	0^+	57 ms *+11–5*	%α≈100 $T_{1/2}$: Weighted average of 54 ms *+19–11* (2005Uu02), 59 ms *+12–9* (1996Le09), and 45 ms *+55–21* (1995Le04). Other: 72 ms *+24–14* (1995Le15). E(α)=7486 keV *8* (2005Uu02), 7484 keV *10* (1996Le09), 7488 keV *12* (1995Le04). Other: 7488 keV *25* (1995Le15).