^{206}Au β^- decay 2015Mo20

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 201,346 (2025)	21-Jan-2025

Parent: ^{206}Au: E=0.0; J^π=(5$^+$,6$^+$); $T_{1/2}$=40 s *15*; Q(β^-)=6760 *syst*; %β^- decay=100

^{206}Au-J^π,$T_{1/2}$: From Adopted Levels for ^{206}Au.

^{206}Au-Q(β^-): From 2021Wa16.

2015Mo20: ^{9}Be target, 2.5 g/cm^2 thick, was bombarded with a 1 GeV/nucleon ^{238}U pulsed beam at GSI in 3 and 4 s repetition cycles, and extraction times of 1 and 2 s respectively. The ^{206}Au recoiling nuclei were selected using the Fragment Separator (FRS) using three magnetic settings centered around ^{205}Pt, ^{215}Pb and ^{217}Pb. The ^{206}Au recoils were decelerated in an Al degrader before their implantation in an active stopper consisting of six DSSD detectors (256 pixels with 9 mm^2 active area), surrounded by an array of 15 HPGe detectors (RISING). Measured: Eγ, Iγ and $\beta\gamma$(t) with a coincidence window of 100 μs.

^{206}Hg Levels

E(level)[†]	J^π[‡]	$T_{1/2}$[‡]
0.0	0$^+$	8.32 min *13*
1068.20 *20*	2$^+$	1.27 ps *17*
2102.4 *3*	5$^-$	2.09 μs *2*

[†] From Eγ.
[‡] From Adopted Levels.

γ(^{206}Hg)

Iγ normalization: from I(γ+ce)(1034.2γ)=100 and by assuming no direct feeding to the ground state. Since the decay scheme is incomplete, the value should be considered as approximate.

E$_\gamma$[†]	I$_\gamma$[‡@]	E$_i$(level)	J_i^π	E$_f$	J_f^π	Mult.[†]	α[#]	Comments
1034.2 *2*	320 *50*	2102.4	5$^-$	1068.20	2$^+$	E3	0.01283 *18*	%Iγ≈99 α(K)=0.00969 *14*; α(L)=0.002390 *33*; α(M)=0.000581 *8* α(N)=0.0001455 *20*; α(O)=2.66×10^{-5} *4*; α(P)=1.442×10^{-6} *20*
1068.2 *2*	290 *50*	1068.20	2$^+$	0.0	0$^+$	E2	0.00531 *7*	%Iγ≈90 α(K)=0.00429 *6*; α(L)=0.000782 *11*; α(M)=0.0001840 *26* α(N)=4.60×10^{-5} *6*; α(O)=8.54×10^{-6} *12*; α(P)=5.62×10^{-7} *8*

[†] From adopted gammas.
[‡] From 2015Mo20.
[#] Additional information 1.
[@] For absolute intensity per 100 decays, multiply by ≈0.309.

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Decay Scheme

Intensities: I_γ per 100 parent decays