

²⁰⁴Hg(d,p) 1972Mo12

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 166, 1 (2020)	20-Apr-2020

1972Mo12:E(d)=17 MeV; ²⁰⁴Hg enriched to 95.8%; Detectors: photographic emulsions, split-pole spectrograph, FWHM=10-14 keV.
Other: 1970An14.

²⁰⁵Hg Levels

E(level) [†]	J ^π [‡]	L	S [#]	Comments
0	1/2 ⁻	1	0.55	S=0.5 (1970An14). configuration: ν(p _{1/2} ⁻¹).
381	5/2 ⁻	(1,3)	0.06,0.14	J ^π : From Adopted Levels. E=376 keV (1970An14). S: Using J=3/2 and 5/2, respectively.
469	3/2 ⁻	3,(1)	0.33,0.15	configuration: ν(f _{5/2} ⁻¹).
1352				J ^π : From Adopted Levels. E=468 keV (1970An14). S: Using J=5/2 and 3/2, respectively.
1855	9/2 ⁺	4	0.50	configuration: ν(p _{3/2} ⁻¹).
2337				E=1853 keV; S=0.8 (1970An14). configuration: ν(g _{9/2} ⁺¹).
2540				
2566	+	(4)	0.07	configuration: ν(g _{9/2} ⁺¹).
2591	+	4	0.17	configuration: ν(g _{9/2} ⁺¹).
2668				
2920	+	2,(4)	0.10,0.18	E=2917 keV (1970An14). S: Using J=5/2 and 9/2, respectively.
2956	+	2,(4)	0.20,0.33	E=2952 keV (1970An14). S: Using J=5/2 and 9/2, respectively.
3026				
3070				
3095				
3163				
3187				
3332	+	(2)	0.02	configuration: ν(d _{5/2} ⁻¹).
3366				
3488	+	(2)	0.01	configuration: ν(d _{5/2} ⁻¹).
3593	+	2	0.46	E=3576 keV (1970An14). configuration: ν(d _{5/2} ⁻¹).
3693				
3720				
3838	1/2 ⁺	0	0.28	configuration: ν(s _{1/2} ⁻¹).
3912				
3942				
3989				
4022				
4037	1/2 ⁺	0	0.29	configuration: ν(s _{1/2} ⁻¹).
4101				
4140	+	2,(4)	0.34,0.61	S: Using J=3/2 and 7/2, respectively.
4170	+	2,4	0.12,0.18	S: Using J=3/2 and 7/2, respectively.
4198	+	2,(4)	0.19,0.32	S: Using J=3/2 and 7/2, respectively.
4238				
4313				
4375	+	2,(4)	0.07,0.11	S: Using J=3/2 and 7/2, respectively.

Continued on next page (footnotes at end of table)

$^{204}\text{Hg}(\text{d,p})$ 1972Mo12 (continued) ^{205}Hg Levels (continued)

<u>E(level)[†]</u>	<u>J^{π‡}</u>	<u>L</u>	<u>S[#]</u>	<u>Comments</u>
4436	+	2,4	0.16,0.26	S: Using J=3/2 and 7/2, respectively.
4453	+	2,(4)	0.15,0.25	S: Using J=3/2 and 7/2, respectively.
4475	+	4,2	0.15,0.09	S: Using J=7/2 and 3/2, respectively.
4507				
4551				
4627	+	4,2	0.15,0.09	S: Using J=7/2 and 3/2, respectively.
4660				
4725				
4779				
4853?				
4915				
4978				
4994				

[†] From 1972Mo12. $\Delta E=0.4\%$ for well-resolved peaks.

[‡] From the deduced L values and spectroscopic factors (1972Mo12), unless otherwise stated.

[#] S is defined by $d\sigma/d\Omega(\text{exp})=1.5 \times (2j+1) \times S \times \sigma(\text{DWBA})$ where j is the total angular momentum of the transferred neutron, $\sigma(\text{DWBA})$ is the DWBA cross section at the peak where $d\sigma/d\Omega(\theta)$ is measured.