^{63}Ga ε decay 1971GiZP

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Huo Junde, Yang Dong, Huo Meirong,	ENSDF	28-Aug-2008

Parent: ^{63}Ga: E=0.0; $J^\pi=3/2^-$; $T_{1/2}$=32.4 s *5*; Q(ε)=5665.9 *21*; %ε+%$β^+$ decay=100.0
1971GiZP: Eγ, Iγ, γγ-coincidence, β-delayed α spectra.
1970Du05: ^{63}Ga from ^{64}Zn(p,2n), Eγ, Iγ.

^{63}Zn Levels

E(level)	J^π
0.0	$3/2^-$
192.94 *19*	$5/2^-$
247.97 *19*	$1/2^-$
627.05 *18*	$1/2^-$
637.06 *19*	$3/2^-$
650.18 *19*	$5/2^-$
1065.2 *4*	$1/2^-$
1395.49 *20*	$3/2^-$
1691.6 *4*	$5/2^-$

ε,$β^+$ radiations

E(decay)	E(level)	Iβ+ †	Iε†	Log *ft*	I(ε+β+)†	Comments
(3974.3 *21*)	1691.6	3.5 *9*	0.11 *3*	5.3 *1*	3.6 *9*	av Eβ=1260 *48*; εK=0.026 *3*; εL=0.0029 *4*; εM+=0.00052 *6*
(4270.4 *21*)	1395.49	6.7 *16*	0.15 *4*	5.2 *1*	6.9 *16*	av Eβ=1400 *48*; εK=0.0197 *20*; εL=0.00217 *22*; εM+=0.00039 *4*
(4600.7 *21*)	1065.2	2.5 *7*	0.041 *13*	5.8 *1*	2.5 *7*	av Eβ=1558 *48*; εK=0.0147 *14*; εL=0.00161 *15*; εM+=0.00029 *3*
(5015.7 *21*)	650.18	5.1 *11*	0.062 *14*	5.7 *1*	5.2 *11*	av Eβ=1757 *49*; εK=0.0105 *9*; εL=0.00115 *10*; εM+=0.000205 *17*
(5028.8 *21*)	637.06	11.2 *22*	0.13 *3*	5.4 *1*	11.3 *22*	av Eβ=1763 *49*; εK=0.0104 *9*; εL=0.00114 *10*; εM+=0.000203 *17*
(5038.9 *21*)	627.05	8.1 *17*	0.095 *22*	5.5 *1*	8.2 *17*	av Eβ=1768 *49*; εK=0.0103 *9*; εL=0.00113 *9*; εM+=0.000202 *17*
(5417.9 *21*)	247.97	2.7 *6*	0.024 *6*	6.2 *1*	2.7 *6*	av Eβ=1951 *49*; εK=0.0078 *6*; εL=0.00086 *7*; εM+=0.000153 *12*
(5473.0 *21*)	192.94	4.6 *10*	0.039 *9*	6.0 *1*	4.6 *10*	av Eβ=1978 *49*; εK=0.0075 *6*; εL=0.00083 *6*; εM+=0.000147 *11*
(5665.9 *21*)	0.0	55 *9*	0.41 *8*	5.0 *1*	55 *9*	av Eβ=2071 *49*; εK=0.0066 *5*; εL=0.00073 *5*; εM+=0.000129 *9*

† Absolute intensity per 100 decays.

γ(^{63}Zn)

Iγ normalization: from I($γ^±$)/I(627,637,650γ)=7.5 *12* (1970Du05).

E_γ	I_γ‡	E_i(level)	J_i^π	E_f	J_f^π	Mult.†	δ†	α#
193.0 *2*	51 *4*	192.94	$5/2^-$	0.0	$3/2^-$	M1+E2	+0.07 *3*	0.01116 *8*
248.0 *2*	30.6 *20*	247.97	$1/2^-$	0.0	$3/2^-$			
389.8 *7*	3.4 *17*	637.06	$3/2^-$	247.97	$1/2^-$	M1+E2	−0.05 *+3−4*	0.00201

Continued on next page (footnotes at end of table)

^{63}Ga ε decay 1971GiZP (continued)

γ(^{63}Zn) (continued)

E_γ	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	δ[†]	α[#]	Comments
415.0 *13*	2.6 *15*	1065.2	1/2−	650.18	5/2−				
457.9 *6*	5.4 *14*	650.18	5/2−	192.94	5/2−	M1+E2	−0.08 *+1−2*	0.00138	
627.1 *2*	92 *5*	627.05	1/2−	0.0	3/2−				
637.0 *2*	100	637.06	3/2−	0.0	3/2−	M1+E2	+0.04 *2*		
650.1 *2*	44 *3*	650.18	5/2−	0.0	3/2−	M1+E2	−0.57 *3*		
768.5 *2*	19.0 *23*	1395.49	3/2−	627.05	1/2−	D+Q			δ: +0.37 *+25−18* or ≥3.
1054.6 *9*	2.3 *12*	1691.6	5/2−	637.06	3/2−				
1065.2 *4*	20 *4*	1065.2	1/2−	0.0	3/2−				
1147.0 *8*	3.1 *7*	1395.49	3/2−	247.97	1/2−	D+Q			
1203.4 *20*	2.4 *12*	1395.49	3/2−	192.94	5/2−	D+Q			
1395.4 *3*	37 *7*	1395.49	3/2−	0.0	3/2−	M1+E2	+0.36 *+14−10*		
1498.5 *6*	2.9 *15*	1691.6	5/2−	192.94	5/2−	D+Q			δ: −0.2≤δ≤2.8.
1691.7 *5*	27 *5*	1691.6	5/2−	0.0	3/2−	M1+E2	−0.10 *3*		

[†] From adopted γ radiations.

[‡] For absolute intensity per 100 decays, multiply by 0.112 *21*.

[#] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

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Decay Scheme

Intensities: I_γ per 100 parent decays