$^{124}_{53}\mathrm{I}_{71}$

1 Decay Scheme

I-124 decays by electron capture (EC) and beta+ emission to a total of 28 levels in Te-124, including the stable ground state.

L'iode 124 se désintègre par capture électronique et bêta plus vers 28 niveaux du tellure 124, y compris le niveau fondamental, qui est stable.

2 Nuclear Data

$T_{1/2}(^{124}\mathrm{I}\ )$: 4,17600 (29) d
$Q^{+}(^{124}\mathrm{I}\ )$: 3159,6 (19) keV

2.1 Electron Capture Transitions

	Energy (keV)	Probability (%)	Nature	lg ft	P_K	P_L	P_M
$\epsilon_{0,28}$	158,5 (19)	0,34 (1)	Allowed	6,8	0,8032 (12)	0,1527 (8)	0,03494 (32)
$\epsilon_{0,27}$	171,4 (19)	0,026 (3)	1st Forbidden	8,0	0,8083 (11)	0,1488 (7)	0,03393 (29)
$\epsilon_{0,26}$	214,0 (19)	0,029 (3)	1st Forbidden	8,2	0,8201 (8)	0,13995 (43)	0,03161 (22)
$\epsilon_{0,25}$	273,5 (19)	1,12 (6)	Allowed	6,9	0,8296 (6)	0,13285 (29)	0,02976 (18)
$\epsilon_{0,24}$	300,7 (19)	0,003 (1)	1st Forbidden	9,5	0,8325 (5)	0,13067 (26)	0,02920 (16)
$\epsilon_{0,23}$	324,7 (19)	4,22 (7)	Allowed	6,4	0,83460 (48)	0,12908 (24)	0,02879 (16)
$\epsilon_{0,22}$	342,1 (19)	0,006 (1)	1st Forbidden	9,3	0,83592 (46)	0,12808 (22)	0,02853 (15)
$\epsilon_{0,21}$	412,6 (19)	0,577 (18)	Allowed	7,5	0,84003 (41)	0,12499 (19)	0,02773 (14)
$\epsilon_{0,20}$	458,0 (19)	1,98 (3)	Allowed	7,1	0,84195 (38)	0,12354 (17)	0,02736 (14)
$\epsilon_{0,19}$	465,9 (19)	0,94 (3)	Allowed	7,4	0,84224 (38)	0,12332 (17)	0,02730 (13)
$\epsilon_{0,18}$	478,1 (19)	0,39 (2)	1st Forbidden	7,8	0,84267 (38)	0,12299 (17)	0,02722 (13)
$\epsilon_{0,17}$	518,4 (19)	0,404 (15)	1st Forbidden	7,9	0,84394 (36)	0,12203 (16)	0,02697 (13)
$\epsilon_{0,16}$	638,3 (19)	0,173 (6)	1st Forbidden	8,5	0,84671 (34)	0,11995 (14)	0,02644 (12)
$\epsilon_{0,15}$	676,2 (19)	0,014 (7)	1st Forbidden Unique	9,8	0,83184 (41)	0,13127 (18)	0,02928 (14)
$\epsilon_{0,14}$	705,5 (19)	0,311 (29)	1st Forbidden	8,3	0,84783 (33)	0,11910 (14)	0,02622 (12)
$\epsilon_{0,13}$	824,6 (19)	0,02 (1)	2nd Forbidden Unique	10,4	0,82099 (43)	0,13959 (19)	0,03135 (15)
$\epsilon_{0,12}$	836,7 (19)	0,201 (12)	1st Forbidden	8,6	0,84947 (32)	0,11787 (13)	0,02590 (12)
$\epsilon_{0,11}$	851,2 (19)	0,009 (2)	1st Forbidden Unique	10,4	0,83827 (36)	0,12638 (15)	0,02805 (13)
$\epsilon_{0,10}$	865,9 (19)	11,54 (25)	Allowed	6,9	0,84976 (32)	0,11765 (13)	0,02585 (12)
$\epsilon_{0,9}$	934,6 (19)	0,005 (2)	1st Forbidden Unique	10,8	0,84035 (35)	0,12480 (14)	0,02765 (13)

	Energy (keV)	Probability (%)	Nature	lg ft	P_K	P_L	P_M
$\epsilon_{0,8}$	1068,0 (19)	0,192 (8)	1st Forbidden	8,8	0,85134 (31)	0,11646 (12)	0,02554 (12)
$\epsilon_{0,7}$	1120,3 (19)	0,026 (16)	1st Forbidden	9,8	0,85165 (31)	0,11622 (12)	0,02548 (12)
$\epsilon_{0,5}$	1276,7 (19)	0,025 (16)	1st Forbidden Unique	10,7	0,84568 (32)	0,12076 (13)	0,02663 (12)
$\epsilon_{0,4}$	1502,3 (19)	0,106 (8)	1st Forbidden Unique	10,4	0,84772 (31)	0,11921 (12)	0,02623 (12)
$\epsilon_{0,3}$	1834,1 (19)	5,43 (18)	1st Forbidden	7,9	0,85408 (29)	0,11439 (11)	0,02501 (11)
$\epsilon_{0,2}$	1911,0 (19)	0,0118 (10)	1st Forbidden Unique	11,7	0,85007 (30)	0,11743 (12)	0,02578 (12)
$\epsilon_{0,1}$	2556,9 (19)	25,55 (37)	1st Forbidden	7,5	0,85512 (29)	0,11360 (11)	0,02481 (11)
$\epsilon_{0,0}$	3159,6 (19)	24,08 (33)	1st Forbidden Unique	9,3	0,85325 (29)	0,11502 (11)	0,02517 (11)

2.2 β^+ Transitions

	Energy (keV)	Probability (%)	Nature	lg ft
$\beta^+_{0,4}$	480,3 (19)	0,000121 (10)	1st Forbidden Unique	10,4
$\beta^+_{0,3}$	812,1 (19)	0,287 (10)	1st Forbidden	7,9
$\beta^+_{0,2}$	889,0 (19)	0,000188 (16)	1st Forbidden Unique	11,7
$\beta^+_{0,1}$	1534,9 (19)	11,45 (15)	1st Forbidden	7,5
$\beta^+_{0,0}$	2137,6 (19)	10,32 (13)	1st Forbidden Unique	9,3

2.3 Gamma Transitions and Internal Conversion Coefficients

	Energy (keV)	$P_{\gamma+ce}$ (%)	Multipolarity	α_K (10^{-4})	α_L (10^{-4})	α_M (10^{-4})	α_T (10^{-4})	α_π (10^{-4})
$\gamma_{28,23}$(Te)	166,222 (36)	0,0081 (29)	E1	407 (6)	51,3 (8)	10,17 (15)	471 (7)	
$\gamma_{28,19}$(Te)	307,441 (30)	0,0166 (27)	E1	76,9 (11)	9,49 (14)	1,88 (3)	88,7 (13)	
$\gamma_{10,6}$(Te)	335,809 (9)	0,0176 (25)	E1	61,2 (9)	7,54 (11)	1,494 (21)	70,6 (10)	
$\gamma_{23,15}$(Te)	351,536 (24)	0,0148 (19)	E1	54,5 (8)	6,7 (1)	1,328 (19)	62,8 (9)	
$\gamma_{19,12}$(Te)	370,729 (30)	0,0025 (12)	E1	47,6 (7)	5,85 (9)	1,159 (17)	54,9 (8)	
$\gamma_{25,15}$(Te)	402,688 (33)	0,0135 (25)	M1	139,4 (20)	17,41 (25)	3,47 (5)	161,0 (23)	
$\gamma_{15,7}$(Te)	444,02 (6)	0,0370 (27)	E2	97,3 (14)	14,0 (2)	2,82 (4)	114,8 (16)	
$\gamma_{19,9}$(Te)	468,725 (16)	0,0075 (44)	E1	26,8 (4)	3,27 (5)	0,649 (9)	30,9 (5)	
$\gamma_{26,14}$(Te)	491,52 (6)	0,0283 (31)	M1+E2	78,9 (11)	10,39 (15)	2,08 (3)	91,8 (13)	
$\gamma_{28,15}$(Te)	517,758 (33)	0,0230 (27)	E2	63,1 (9)	8,76 (13)	1,757 (25)	74,0 (11)	
$\gamma_{15,6}$(Te)	525,460 (15)	0,0283 (30)	M1+E2	66 (6)	8,7 (3)	1,73 (6)	77 (7)	
$\gamma_{23,10}$(Te)	541,187 (20)	0,2082 (32)	M1+E2	62 (6)	8,0 (4)	1,60 (6)	71 (6)	
$\gamma_{25,13}$(Te)	551,020 (32)	0,007 (22)	E1	18,4 (3)	2,24 (4)	0,443 (7)	21,2 (3)	
$\gamma_{5,3}$(Te)	557,407 (30)	0,024 (16)	E2	51,6 (8)	7,06 (10)	1,415 (20)	60,4 (9)	
$\gamma_{25,10}$(Te)	592,339 (30)	0,1110 (35)	M1+E2	49 (5)	6,3 (4)	1,26 (7)	57 (6)	
$\gamma_{1,0}$(Te)	602,7271 (21)	62,6 (6)	E2	42,0 (6)	5,66 (8)	1,132 (16)	49,0 (7)	
$\gamma_{23,9}$(Te)	609,944 (25)	0,1496 (22)	E1	14,68 (21)	1,775 (25)	0,352 (5)	16,89 (24)	
$\gamma_{2,1}$(Te)	645,8540 (33)	0,981 (6)	E2	35,1 (5)	4,67 (7)	0,935 (13)	40,9 (6)	
$\gamma_{25,9}$(Te)	661,096 (34)	0,0112 (19)	E1	12,32 (18)	1,485 (21)	0,294 (5)	14,16 (20)	
$\gamma_{20,7}$(Te)	662,27 (7)	0,0534 (13)	E1	12,27 (18)	1,479 (21)	0,293 (5)	14,11 (20)	
$\gamma_{28,12}$(Te)	678,170 (42)	0,0037 (12)	M1+E2	35 (4)	4,4 (4)	0,89 (7)	41 (5)	
$\gamma_{28,10}$(Te)	707,409 (30)	0,0916 (14)	E1	10,66 (15)	1,283 (18)	0,254 (4)	12,26 (18)	
$\gamma_{6,2}$(Te)	709,321 (8)	0,0450 (13)	M1+E2	34,9 (5)	4,29 (7)	0,853 (13)	40,2 (6)	
$\gamma_{7,3}$(Te)	713,83 (6)	0,0770 (16)	E2	27,3 (4)	3,58 (5)	0,715 (10)	31,8 (5)	
$\gamma_{3,1}$(Te)	722,7860 (32)	10,27 (6)	M1+E2	27,1 (4)	3,52 (5)	0,702 (10)	31,4 (5)	

	Energy (keV)	$P_{\gamma+ce}$ (%)	Multipolarity	α_K (10^{-4})	α_L (10^{-4})	α_M (10^{-4})	α_T (10^{-4})	α_π (10^{-4})
$\gamma_{19,6}$(Te)	735,777 (9)	0,006 (1)	E1	9,82 (14)	1,180 (17)	0,234 (4)	11,28 (16)	
$\gamma_{23,8}$(Te)	743,295 (26)	0,0128 (8)	E1	9,61 (14)	1,155 (17)	0,229 (4)	11,05 (16)	
$\gamma_{8,3}$(Te)	766,090 (17)	0,0048 (12)	M1+E2	26 (4)	3,3 (3)	0,65 (6)	30 (4)	
$\gamma_{28,9}$(Te)	776,166 (34)	0,0121 (8)	E2	22,3 (4)	2,89 (4)	0,576 (8)	25,9 (4)	
$\gamma_{7,2}$(Te)	790,76 (6)	0,0255 (10)	E2	21,3 (3)	2,76 (4)	0,550 (8)	24,8 (4)	
$\gamma_{25,8}$(Te)	794,447 (34)	0,0025 (6)	E1	8,38 (12)	1,005 (14)	0,199 (3)	9,63 (14)	
$\gamma_{23,7}$(Te)	795,56 (6)	0,0366 (10)	E1	8,36 (12)	1,002 (14)	0,198 (3)	9,61 (14)	
$\gamma_{14,4}$(Te)	796,786 (30)	0,0037 (19)	E2	21,0 (3)	2,70 (4)	0,539 (8)	24,3 (4)	
$\gamma_{25,7}$(Te)	846,71 (7)	0,0040 (11)	E1	7,38 (11)	0,882 (13)	0,1747 (25)	8,47 (12)	
$\gamma_{23,6}$(Te)	876,996 (22)	0,0226 (9)	E1	6,88 (10)	0,822 (12)	0,1628 (23)	7,90 (11)	
$\gamma_{9,3}$(Te)	899,441 (15)	0,0221 (9)	E2	15,84 (23)	2,01 (3)	0,401 (6)	18,3 (3)	
$\gamma_{25,6}$(Te)	928,148 (31)	0,002 (1)	E1	6,16 (9)	0,735 (11)	0,1454 (21)	7,07 (10)	
$\gamma_{28,7}$(Te)	961,78 (7)	0,0181 (10)	M1+E2	15,5 (19)	1,91 (20)	0,38 (4)	17,9 (22)	
$\gamma_{10,3}$(Te)	968,1979 (38)	0,4378 (35)	E1+M2	5,69 (9)	0,678 (11)	0,1343 (22)	6,53 (11)	
$\gamma_{9,2}$(Te)	976,373 (15)	0,0998 (23)	M1+E2	15,6 (3)	1,92 (3)	0,381 (6)	18,0 (3)	
$\gamma_{17,4}$(Te)	983,87 (7)	0,0143 (31)	E2	12,97 (19)	1,630 (23)	0,324 (5)	14,99 (21)	
$\gamma_{12,3}$(Te)	997,437 (30)	0,026 (2)	M1+E2	14,3 (18)	1,76 (19)	0,35 (4)	16,5 (20)	
$\gamma_{10,2}$(Te)	1045,1299 (39)	0,4266 (36)	E1+M2	4,94 (9)	0,587 (11)	0,1163 (21)	5,67 (10)	
$\gamma_{4,1}$(Te)	1054,556 (22)	0,1225 (15)	E2	11,15 (16)	1,392 (20)	0,277 (4)	12,88 (18)	
$\gamma_{13,2}$(Te)	1086,449 (10)	0,0153 (12)	E1	4,57 (7)	0,543 (8)	0,1074 (15)	5,24 (8)	
$\gamma_{14,3}$(Te)	1128,556 (21)	0,0453 (7)	M1+E2	10,9 (13)	1,33 (14)	0,26 (3)	12,5 (14)	0,0112 (7)
$\gamma_{16,3}$(Te)	1195,817 (30)	0,0038 (18)	M1+E2	9,6 (11)	1,17 (12)	0,233 (23)	11,1 (12)	0,059 (4)
$\gamma_{14,2}$(Te)	1205,488 (21)	0,0224 (31)	E2	8,41 (12)	1,037 (15)	0,206 (3)	9,78 (14)	0,0739 (11)
$\gamma_{17,3}$(Te)	1315,64 (7)	0,0288 (12)	M1+E2	7,84 (11)	0,951 (14)	0,189 (3)	9,26 (13)	0,247 (4)
$\gamma_{3,0}$(Te)	1325,5131 (24)	1,557 (14)	M1+E2	7,7 (8)	0,94 (9)	0,186 (18)	9,1 (9)	0,268 (12)
$\gamma_{6,1}$(Te)	1355,175 (8)	0,0360 (13)	E2+M3	9,2 (21)	1,1 (3)	0,23 (6)	10,9 (24)	0,322 (25)
$\gamma_{19,3}$(Te)	1368,166 (6)	0,2928 (26)	E1+M2	3,03 (5)	0,358 (6)	0,0709 (10)	4,78 (7)	1,298 (19)
$\gamma_{20,3}$(Te)	1376,097 (30)	1,752 (12)	E1+M2	3,00 (5)	0,354 (6)	0,0701 (12)	4,79 (7)	1,355 (19)
$\gamma_{17,2}$(Te)	1392,57 (7)	0,014 (3)	E2	6,28 (9)	0,766 (11)	0,1521 (22)	7,69 (11)	0,455 (7)
$\gamma_{7,1}$(Te)	1436,61 (6)	0,0750 (21)	E2	5,91 (9)	0,719 (10)	0,1427 (20)	7,39 (11)	0,590 (9)
$\gamma_{19,2}$(Te)	1445,098 (6)	0,0372 (15)	E1+M2	2,9 (4)	0,34 (4)	0,067 (8)	5,2 (4)	1,84 (5)
$\gamma_{8,1}$(Te)	1488,876 (17)	0,1986 (38)	M1+E2	6,59 (14)	0,792 (16)	0,157 (3)	8,29 (16)	0,717 (11)
$\gamma_{23,3}$(Te)	1509,385 (20)	3,162 (26)	E1	2,56 (4)	0,302 (5)	0,0597 (9)	5,28 (8)	2,34 (4)
$\gamma_{25,3}$(Te)	1560,537 (30)	0,1617 (30)	E1+M2	2,8 (11)	0,34 (13)	0,07 (3)	5,9 (10)	2,63 (24)
$\gamma_{23,2}$(Te)	1586,317 (20)	0,009 (3)	E1+M2	2,46 (11)	0,290 (13)	0,057 (3)	5,71 (12)	2,89 (5)
$\gamma_{9,1}$(Te)	1622,227 (15)	0,0484 (16)	E2	4,67 (7)	0,564 (8)	0,1118 (16)	6,64 (10)	1,269 (18)
$\gamma_{25,2}$(Te)	1637,469 (30)	0,2009 (27)	E1	2,24 (4)	0,263 (4)	0,0521 (8)	5,87 (9)	3,31 (5)
$\gamma_{27,3}$(Te)	1662,73 (5)	0,0025 (6)	M1	5,22 (8)	0,625 (9)	0,1240 (18)	7,37 (11)	1,377 (20)
$\gamma_{28,3}$(Te)	1675,607 (30)	0,1069 (22)	M1+E2	4,8 (4)	0,57 (5)	0,113 (9)	6,9 (4)	1,46 (4)
$\gamma_{10,1}$(Te)	1690,9839 (37)	10,90 (7)	E1+M2	2,13 (3)	0,250 (4)	0,0494 (7)	6,15 (9)	3,71 (6)
$\gamma_{11,1}$(Te)	1705,69 (9)	0,0092 (15)	E2	4,24 (6)	0,511 (8)	0,1013 (15)	6,50 (9)	1,621 (23)
$\gamma_{12,1}$(Te)	1720,223 (30)	0,1936 (36)	M1+E2	4,84 (10)	0,579 (11)	0,1148 (22)	7,18 (13)	1,622 (24)
$\gamma_{28,2}$(Te)	1752,539 (30)	0,0522 (10)	E2+M3	4,16 (15)	0,502 (18)	0,099 (4)	6,60 (17)	1,82 (3)
$\gamma_{14,1}$(Te)	1851,342 (21)	0,2124 (22)	M2+E3	7,5 (12)	0,92 (13)	0,18 (3)	9,8 (13)	1,14 (7)
$\gamma_{16,1}$(Te)	1918,603 (30)	0,1673 (27)	M1+E2	3,87 (6)	0,462 (7)	0,0916 (13)	6,98 (10)	2,54 (4)
$\gamma_{17,1}$(Te)	2038,42 (7)	0,3446 (47)	M1+E2	3,23 (19)	0,386 (23)	0,076 (5)	6,85 (21)	3,14 (6)
$\gamma_{18,1}$(Te)	2078,733 (40)	0,3560 (43)	M1+E2	3,27 (5)	0,390 (6)	0,0773 (11)	7,07 (10)	3,31 (5)
$\gamma_{19,1}$(Te)	2090,952 (5)	0,597 (6)	E1+M2	1,522 (23)	0,178 (3)	0,0352 (6)	8,38 (12)	6,64 (10)
$\gamma_{20,1}$(Te)	2098,883 (30)	0,1517 (10)	E1	1,509 (22)	0,1766 (25)	0,0349 (5)	8,42 (12)	6,7 (1)
$\gamma_{21,1}$(Te)	2144,313 (40)	0,1029 (14)	E1	1,460 (21)	0,1708 (24)	0,0338 (5)	8,68 (13)	7,01 (10)
$\gamma_{22,1}$(Te)	2214,75 (11)	0,006 (1)	M1+E2	2,75 (14)	0,328 (17)	0,065 (4)	7,16 (17)	4,00 (6)
$\gamma_{23,1}$(Te)	2232,171 (20)	0,580 (29)	E1+M2	1,38 (5)	0,161 (7)	0,0318 (13)	9,17 (13)	7,59 (13)
$\gamma_{24,1}$(Te)	2256,17 (15)	0,0036 (11)	M1+E2	2,66 (13)	0,316 (15)	0,063 (3)	7,26 (17)	4,21 (6)
$\gamma_{25,1}$(Te)	2283,323 (30)	0,651 (8)	E1+M2	1,341 (22)	0,157 (3)	0,0310 (6)	9,45 (14)	7,91 (12)
$\gamma_{10,0}$(Te)	2293,711 (3)	0,0104 (20)	M3	8,70 (13)	1,078 (15)	0,215 (3)	11,62 (17)	1,588 (23)
$\gamma_{27,1}$(Te)	2385,51 (5)	0,0153 (26)	M1+E2	2,39 (10)	0,284 (12)	0,0562 (24)	7,58 (15)	4,84 (7)
$\gamma_{14,0}$(Te)	2454,069 (21)	0,0539 (28)	E2	2,19 (3)	0,259 (4)	0,0513 (8)	7,68 (11)	5,17 (8)
$\gamma_{18,0}$(Te)	2681,46 (4)	0,0312 (18)	E2	1,87 (3)	0,222 (4)	0,0438 (7)	8,37 (12)	6,22 (9)
$\gamma_{21,0}$(Te)	2747,04 (4)	0,496 (12)	E2	1,80 (3)	0,212 (3)	0,0420 (6)	8,58 (12)	6,52 (10)
$\gamma_{27,0}$(Te)	2988,24 (5)	0,0087 (9)	M1+E2	1,58 (3)	0,186 (4)	0,0369 (8)	9,46 (16)	7,65 (13)

3 Atomic Data

3.1 Te

ω_K	:	0,875	(4)
$\bar{\omega}_L$	:	0,0862	(35)
n_{KL}	:	0,917	(4)

3.1.1 X Radiations

	Energy (keV)	Relative probability
X_K		
$K\alpha_2$	27,202	53,7
$K\alpha_1$	27,4726	100
$K\beta_3$	30,9446	28,6183
$K\beta_1$	30,996	
$K\beta_5''$	31,236	
$K\beta_2$	31,7008	6,2102
$K\beta_4$	31,774	
$KO_{2,3}$	31,812	
X_L		
$L\ell$	3,3348	
$L\alpha$	3,7595 - 3,7697	
$L\eta$	3,6052	
$L\beta$	4,0299 - 4,3661	
$L\gamma$	4,4448 - 4,8228	

3.1.2 Auger Electrons

	Energy (keV)	Relative probability
Auger K		
KLL	21,804 - 22,989	100
KLX	25,814 - 27,470	45,3
KXY	29,80 - 31,81	5,13
Auger L	2,3294 - 4,8596	

4 Electron Emissions

		Energy (keV)	Electrons (per 100 disint.)
e_{AL}	(Te)	2,3294 - 4,8596	64,1 (4)
e_{AK}	(Te)		
	KLL	21,804 - 22,989	8,31 (28)
	KLX	25,814 - 27,470	
	KXY	29,80 - 31,81	
$ec_{1,0\ T}$	(Te)	570,9133 - 602,7248	0,305 (5)
$ec_{1,0\ K}$	(Te)	570,9133 (21)	0,2617 (45)
$ec_{1,0\ L}$	(Te)	597,7879 - 598,3857	0,0353 (6)
$ec_{3,1\ T}$	(Te)	690,972 - 722,784	0,0322 (5)
$ec_{3,1\ K}$	(Te)	690,9722 (32)	0,02775 (44)
$\beta^+_{0,4}$	max:	480,3 (19)	0,000121 (10)
	avg:	238,4 (9)	
$\beta^+_{0,3}$	max:	812,1 (19)	0,287 (10)
	avg:	365,7 (8)	
$\beta^+_{0,2}$	max:	889,0 (19)	0,000188 (16)
	avg:	420,4 (8)	
$\beta^+_{0,1}$	max:	1534,9 (19)	11,45 (15)
	avg:	681,9 (8)	
$\beta^+_{0,0}$	max:	2137,6 (19)	10,32 (13)
	avg:	975,2 (8)	

5 Photon Emissions

5.1 X-Ray Emissions

		Energy (keV)	Photons (per 100 disint.)	
XL	(Te)	3,3348 - 4,8228	5,95 (12)	
$XK\alpha_2$	(Te)	27,202	16,56 (18)	$K\alpha$
$XK\alpha_1$	(Te)	27,4726	30,85 (29)	
$XK\beta_3$	(Te)	30,9446	8,83 (13)	$K'\beta_1$
$XK\beta_1$	(Te)	30,996		
$XK\beta''_5$	(Te)	31,236		
$XK\beta_2$	(Te)	31,7008	1,92 (6)	$K'\beta_2$
$XK\beta_4$	(Te)	31,774		
$XKO_{2,3}$	(Te)	31,812		

5.2 Gamma Emissions

	Energy (keV)	Photons (per 100 disint.)
$\gamma_{28,23}$(Te)	166,222 (36)	0,0077 (28)
$\gamma_{28,19}$(Te)	307,441 (30)	0,0165 (27)
$\gamma_{10,6}$(Te)	335,809 (9)	0,0175 (25)
$\gamma_{23,15}$(Te)	351,536 (24)	0,0147 (19)
$\gamma_{19,12}$(Te)	370,729 (30)	0,0025 (12)
$\gamma_{25,15}$(Te)	402,688 (33)	0,0133 (25)
$\gamma_{15,7}$(Te)	444,02 (6)	0,0366 (27)
$\gamma_{19,9}$(Te)	468,725 (16)	0,0075 (44)
$\gamma_{26,14}$(Te)	491,52 (6)	0,0280 (31)
$\gamma^{\pm}$	511	44,11 (40)
$\gamma_{28,15}$(Te)	517,757 (33)	0,0228 (27)
$\gamma_{15,6}$(Te)	525,459 (15)	0,0281 (30)
$\gamma_{23,10}$(Te)	541,186 (20)	0,2067 (32)
$\gamma_{25,13}$(Te)	551,019 (32)	0,007 (22)
$\gamma_{5,3}$(Te)	557,406 (30)	0,024 (16)
$\gamma_{25,10}$(Te)	592,337 (30)	0,1104 (35)
$\gamma_{1,0}$(Te)	602,7255 (21)	62,3 (6)
$\gamma_{23,9}$(Te)	609,942 (25)	0,1493 (22)
$\gamma_{2,1}$(Te)	645,8522 (33)	0,977 (6)
$\gamma_{25,9}$(Te)	661,094 (34)	0,0112 (19)
$\gamma_{20,7}$(Te)	662,27 (7)	0,0533 (13)
$\gamma_{28,12}$(Te)	678,168 (42)	0,0037 (12)
$\gamma_{28,10}$(Te)	707,407 (30)	0,0915 (14)
$\gamma_{6,2}$(Te)	709,319 (8)	0,0448 (13)
$\gamma_{7,3}$(Te)	713,82 (6)	0,0768 (16)
$\gamma_{3,1}$(Te)	722,7838 (32)	10,24 (6)
$\gamma_{19,6}$(Te)	735,775 (9)	0,006 (1)
$\gamma_{23,8}$(Te)	743,293 (26)	0,0128 (8)
$\gamma_{8,3}$(Te)	766,087 (17)	0,0048 (12)
$\gamma_{28,9}$(Te)	776,163 (34)	0,0121 (8)
$\gamma_{7,2}$(Te)	790,76 (6)	0,0254 (10)
$\gamma_{25,8}$(Te)	794,444 (34)	0,0025 (6)
$\gamma_{23,7}$(Te)	795,56 (6)	0,0366 (10)
$\gamma_{14,4}$(Te)	796,783 (30)	0,0037 (19)
$\gamma_{25,7}$(Te)	846,71 (7)	0,0040 (11)
$\gamma_{23,6}$(Te)	876,993 (22)	0,0226 (9)
$\gamma_{9,3}$(Te)	899,437 (15)	0,0221 (9)
$\gamma_{25,6}$(Te)	928,144 (31)	0,002 (1)
$\gamma_{28,7}$(Te)	961,78 (7)	0,0181 (10)
$\gamma_{10,3}$(Te)	968,1939 (38)	0,4375 (35)
$\gamma_{9,2}$(Te)	976,369 (15)	0,0996 (23)
$\gamma_{17,4}$(Te)	983,86 (7)	0,0143 (31)
$\gamma_{12,3}$(Te)	997,433 (30)	0,026 (2)
$\gamma_{10,2}$(Te)	1045,1252 (39)	0,4264 (36)
$\gamma_{4,1}$(Te)	1054,551 (22)	0,1223 (15)
$\gamma_{13,2}$(Te)	1086,444 (10)	0,0153 (12)

	Energy (keV)	Photons (per 100 disint.)
$\gamma_{14,3}$(Te)	1128,550 (21)	0,0452 (7)
$\gamma_{16,3}$(Te)	1195,811 (30)	0,0038 (18)
$\gamma_{14,2}$(Te)	1205,482 (21)	0,0224 (31)
$\gamma_{17,3}$(Te)	1315,63 (7)	0,0288 (12)
$\gamma_{3,0}$(Te)	1325,5055 (24)	1,556 (14)
$\gamma_{6,1}$(Te)	1355,167 (8)	0,0360 (13)
$\gamma_{19,3}$(Te)	1368,158 (6)	0,2926 (26)
$\gamma_{20,3}$(Te)	1376,089 (30)	1,751 (12)
$\gamma_{17,2}$(Te)	1392,56 (7)	0,014 (3)
$\gamma_{7,1}$(Te)	1436,60 (6)	0,0749 (21)
$\gamma_{19,2}$(Te)	1445,089 (6)	0,0372 (15)
$\gamma_{8,1}$(Te)	1488,866 (17)	0,1984 (38)
$\gamma_{23,3}$(Te)	1509,375 (20)	3,160 (26)
$\gamma_{25,3}$(Te)	1560,526 (30)	0,1616 (30)
$\gamma_{23,2}$(Te)	1586,306 (20)	0,009 (3)
$\gamma_{9,1}$(Te)	1622,216 (15)	0,0484 (16)
$\gamma_{25,2}$(Te)	1637,457 (30)	0,2007 (27)
$\gamma_{27,3}$(Te)	1662,72 (5)	0,0025 (6)
$\gamma_{28,3}$(Te)	1675,595 (30)	0,1068 (22)
$\gamma_{10,1}$(Te)	1690,9716 (37)	10,89 (7)
$\gamma_{11,1}$(Te)	1705,68 (9)	0,0092 (15)
$\gamma_{12,1}$(Te)	1720,21 (3)	0,1934 (36)
$\gamma_{28,2}$(Te)	1752,526 (30)	0,0522 (10)
$\gamma_{14,1}$(Te)	1851,327 (21)	0,2122 (22)
$\gamma_{16,1}$(Te)	1918,587 (30)	0,1671 (27)
$\gamma_{17,1}$(Te)	2038,41 (7)	0,3443 (47)
$\gamma_{18,1}$(Te)	2078,714 (40)	0,3556 (43)
$\gamma_{19,1}$(Te)	2090,933 (5)	0,596 (6)
$\gamma_{20,1}$(Te)	2098,864 (30)	0,1515 (10)
$\gamma_{21,1}$(Te)	2144,293 (40)	0,1027 (14)
$\gamma_{22,1}$(Te)	2214,73 (11)	0,006 (1)
$\gamma_{23,1}$(Te)	2232,149 (20)	0,579 (29)
$\gamma_{24,1}$(Te)	2256,15 (15)	0,0036 (11)
$\gamma_{25,1}$(Te)	2283,30 (3)	0,650 (8)
$\gamma_{10,0}$(Te)	2293,6884 (30)	0,0104 (20)
$\gamma_{27,1}$(Te)	2385,49 (5)	0,0153 (26)
$\gamma_{14,0}$(Te)	2454,043 (21)	0,0538 (28)
$\gamma_{18,0}$(Te)	2681,429 (40)	0,0312 (18)
$\gamma_{21,0}$(Te)	2747,008 (40)	0,495 (12)
$\gamma_{27,0}$(Te)	2988,20 (5)	0,0087 (9)

6 Main Production Modes

$\left\{ \begin{array}{l} \mathrm{Te-124(d,2n)I-124} \\ \text{Possible impurities: I} - 125 \end{array} \right.$

$\left\{ \begin{array}{l} \mathrm{Te-124(p,n)I-124} \\ \text{Possible impurities: I} - 123, \text{ I} - 125 \end{array} \right.$

$\left\{ \begin{array}{l} \mathrm{Te-125(p,2n)I-124} \\ \text{Possible impurities: I} - 123, \text{ I} - 125 \end{array} \right.$

$\left\{ \begin{array}{l} \mathrm{Te-126(p,3n)I-124} \\ \text{Possible impurities: I} - 123, \text{ I} - 125, \text{ I} - 126 \end{array} \right.$

$\left\{ \begin{array}{l} \mathrm{Sb-nat(\alpha,xn)I-124} \\ \text{Possible impurities: I} - 123, \text{ I} - 125, \text{ I} - 126 \end{array} \right.$

$\left\{ \begin{array}{l} \mathrm{Sb-121(\alpha,n)I-124} \\ \text{Possible impurities: I} - 123, \text{ I} - 125, \text{ I} - 126 \end{array} \right.$

$\left\{ \begin{array}{l} \mathrm{Sb-nat(H-3,n)I-124} \\ \text{Possible impurities: I} - 123, \text{ I} - 125, \text{ I} - 126 \end{array} \right.$

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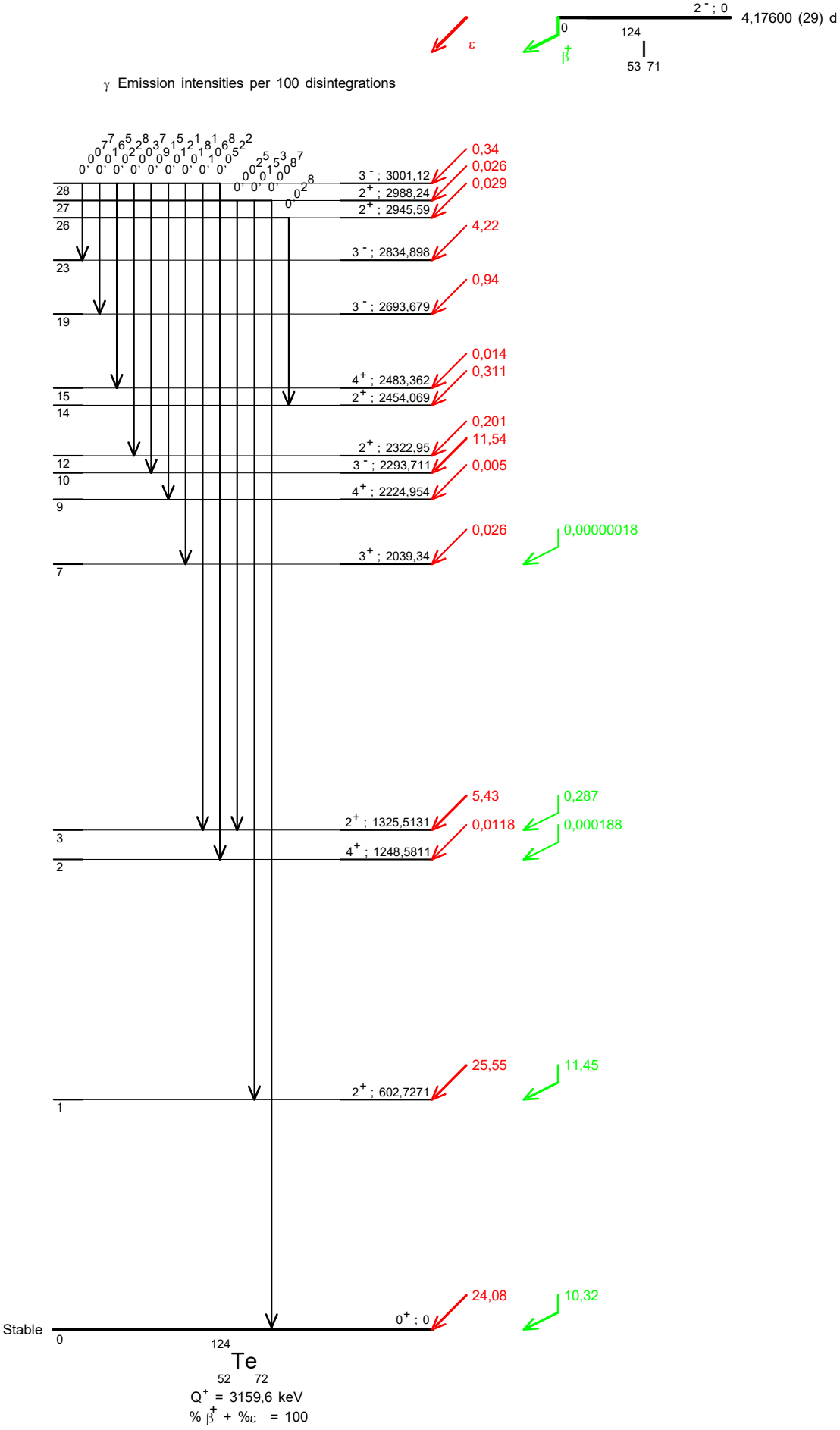
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4,17600 (29) d
0
124
53 71
ε
β+
γ Emission intensities per 100 disintegrations
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2 + ; 2988,24
2 + ; 2945,59
3 - ; 2834,898
3 - ; 2693,679
4 + ; 2483,362
2 + ; 2454,069
2 + ; 2322,95
3 - ; 2293,711
4 + ; 2224,954
3 + ; 2039,34
2 + ; 1325,5131
4 + ; 1248,5811
2 + ; 602,7271
0 + ; 0
0,34
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0,029
4,22
0,94
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0,311
0,201
11,54
0,005
0,026
0,00000018
5,43
0,287
0,0118
0,000188
25,55
11,45
24,08
10,32
28
27
26
23
19
15
14
12
10
9
7
3
2
1
Stable
0
124
Te
52 72
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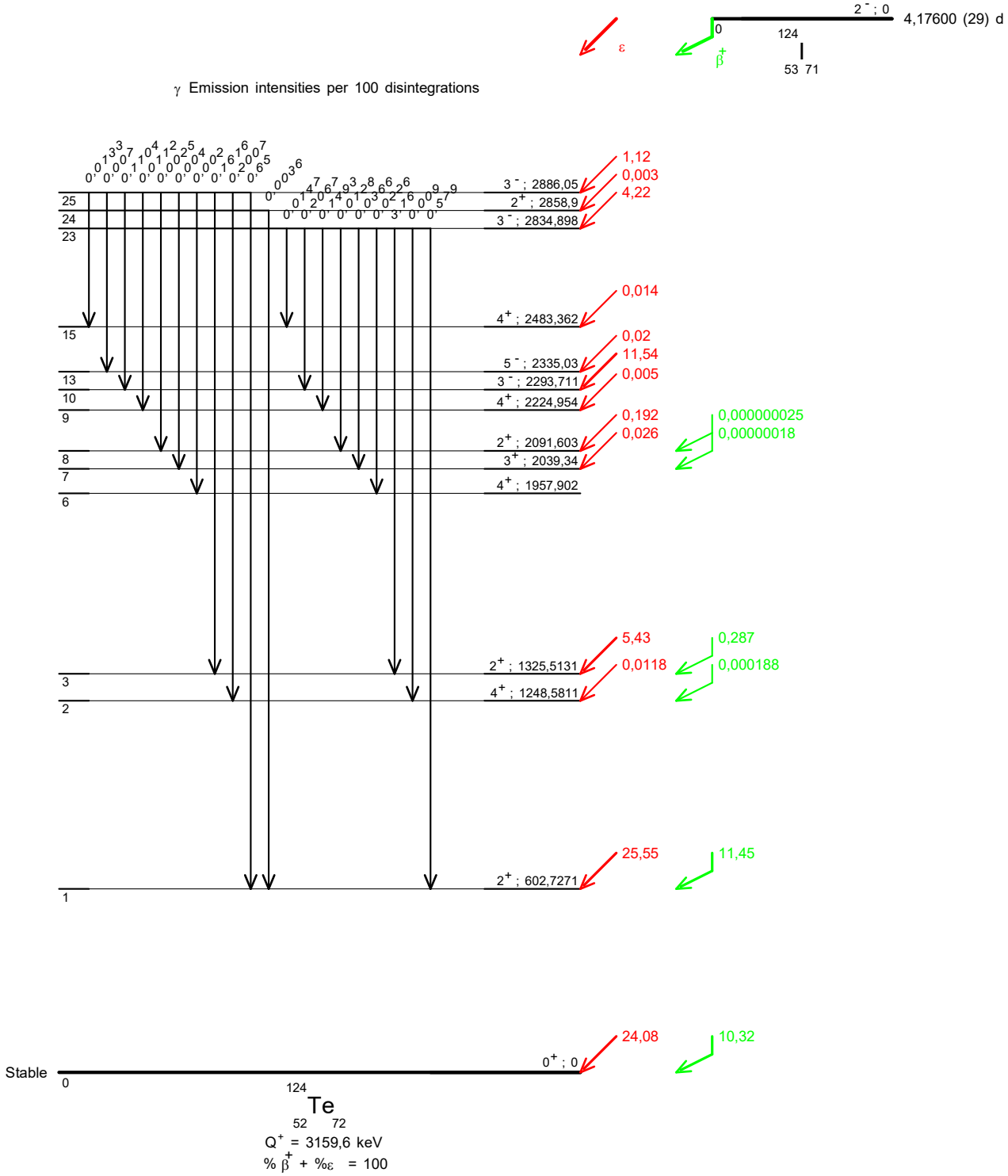
% β+ + %ε = 100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4,17600 (29) d
ε
β+
0
124
I
53 71
γ Emission intensities per 100 disintegrations
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4,22
4⁺; 2483,362
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5⁻; 2335,03
3⁻; 2293,711
4⁺; 2224,954
0,02
11,54
0,005
2⁺; 2091,603
3⁺; 2039,34
4⁺; 1957,902
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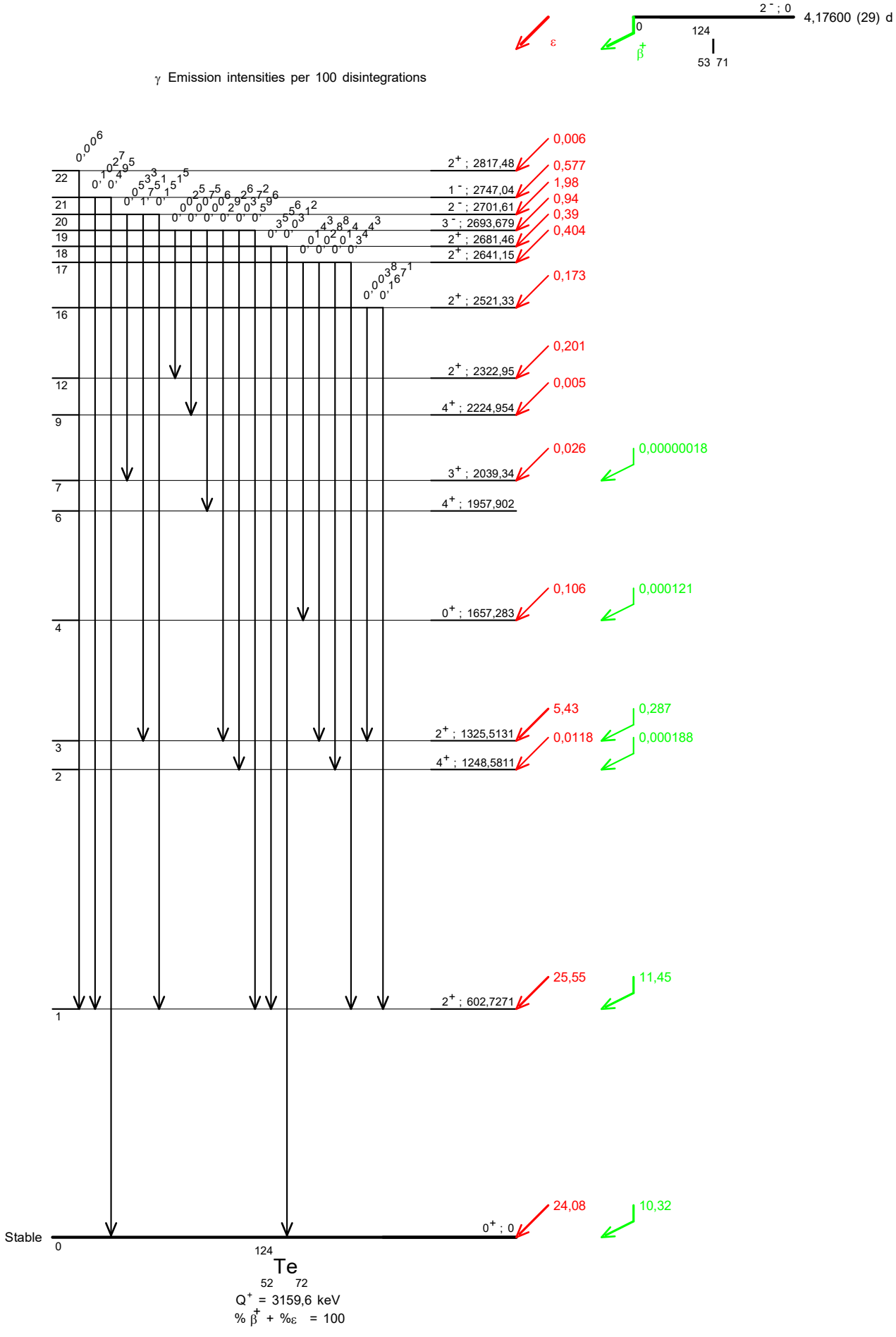
0,026
0,000000025
0,00000018
2⁺; 1325,5131
4⁺; 1248,5811
5,43
0,0118
0,287
0,000188
2⁺; 602,7271
25,55
11,45
0⁺; 0
24,08
10,32
Stable
124
Te
52 72
Q⁺ = 3159,6 keV
% β⁺ + %ε = 100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ε
β+
124
53 71
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3⁻ ; 2693,679
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4+ ; 1248,5811
2+ ; 602,7271
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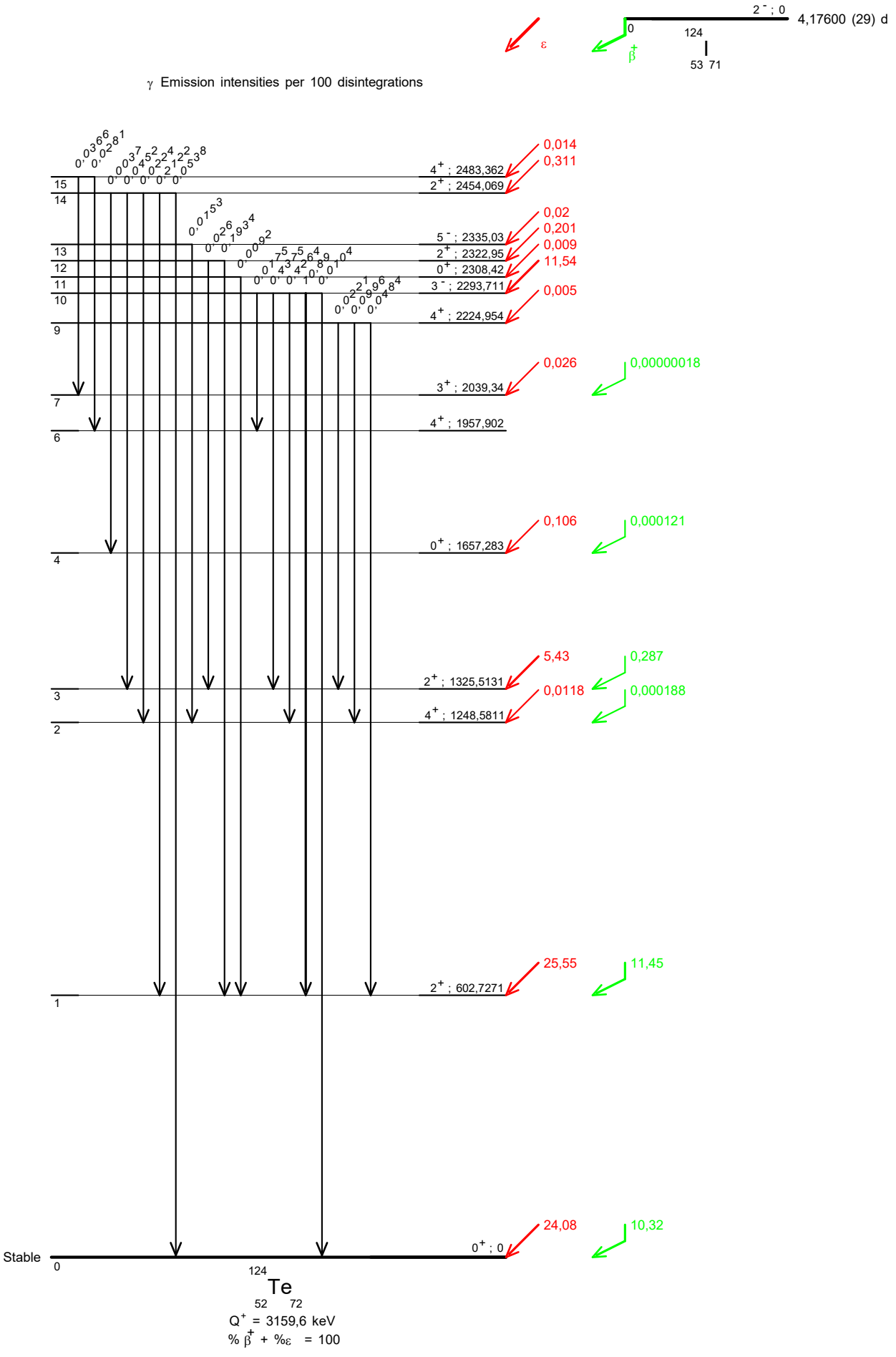
25,55
11,45
24,08
10,32
Stable
124
52 72
Te
Q+ = 3159,6 keV
% β+ + %ε = 100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γ Emission intensities per 100 disintegrations
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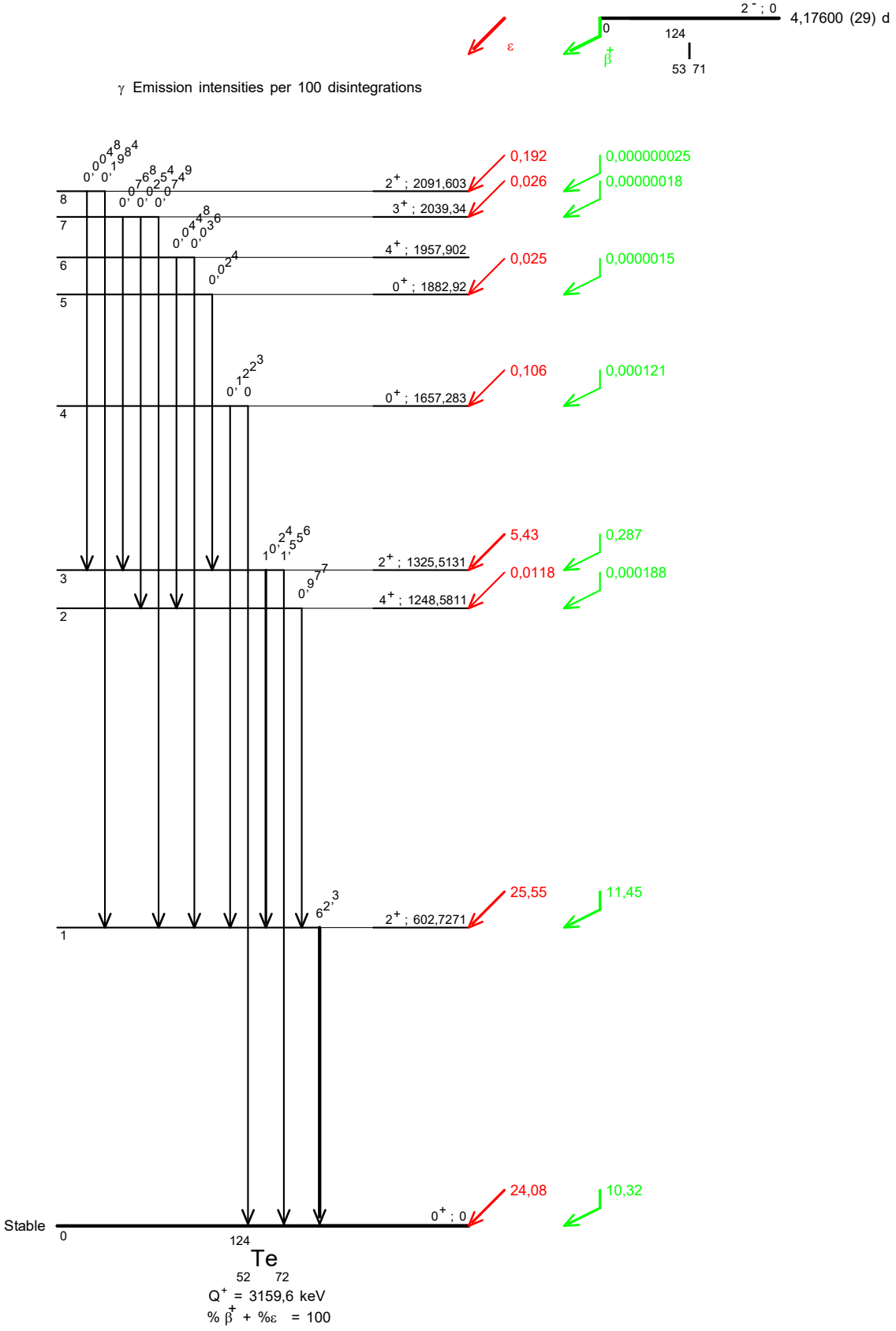
1
Stable
0
124
Te
52 72
Q+ = 3159,6 keV
% β+ + %ε = 100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4,17600 (29) d
124
53 71
ε
β+
γ Emission intensities per 100 disintegrations
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4+ ; 1957,902
0+ ; 1882,92
0+ ; 1657,283
2+ ; 1325,5131
4+ ; 1248,5811
2+ ; 602,7271
0+ ; 0
0,192
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5,43
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24,08
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10,32
Stable
124
Te
52 72
Q+ = 3159,6 keV
% β+ + %ε = 100