

$^{212}\text{At}$   $\alpha$  decay (0.314 s) **1976FrZO**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. J. Martin	NDS 108,1583 (2007)	1-Jun-2007

Parent:  $^{212}\text{At}$ :  $E=0.0$ ;  $J^\pi=(1^-)$ ;  $T_{1/2}=0.314$  s 2;  $Q(\alpha)=7817.2$  6;  $\% \alpha$  decay=100.0

$^{212}\text{At}-Q(\alpha)$ : See comment on  $E\alpha$ .

**1976FrZO**: FWHM =18 keV.

Other: **1970Re02**: FWHM $\approx$ 23 keV.

 $^{208}\text{Bi}$  Levels

E(level) <sup>†</sup>	$J^\pi$	$T_{1/2}$
0.0	5 <sup>+</sup>	$3.68 \times 10^5$ y 4
62.6 3	4 <sup>+</sup>	
510.7 6	6 <sup>+</sup>	
600.8 4	4 <sup>+</sup>	
632.1 5	3 <sup>+</sup>	
888 2	5 <sup>+</sup>	
928.7 12	2 <sup>+</sup>	
1067.6 8	3 <sup>+</sup>	

<sup>†</sup> From  $\Delta Q(\alpha)$  relative to the g.s.  $\alpha$  group.

 $\alpha$  radiations

$\alpha$  groups to the following levels were looked for by **1976FrZO** but not found: 628 ( $I\alpha < 0.3$ ), 651 ( $I\alpha < 0.1$ ), 936 ( $I\alpha < 0.03$ ), 959 ( $I\alpha < 0.01$ ), 1033 ( $I\alpha < 0.01$ ), 1095 ( $I\alpha < 0.02$ ), 1571 ( $I\alpha < 0.005$ ). **1970Re02** report  $I\alpha < 0.4$ ,  $< 0.1$ , 0.12 3, 0.06 2, 0.05 2, and  $< 0.02$  for the first six branches. They do not report a value for the 1571 level.

$E\alpha$ <sup>†</sup>	E(level)	$I\alpha$ <sup>‡@</sup>	HF <sup>#</sup>	Comments
6621.8 8	1067.6	0.135 6	30.6 15	$I\alpha$ : <b>1970Re02</b> report $I\alpha=0.15$ 1.
6758.1 12	928.7	0.07 2	203 59	$I\alpha$ : <b>1970Re02</b> report $I\alpha=0.04$ 3.
6798 2	888	0.048 5	409 43	$I\alpha$ : <b>1970Re02</b> report $I\alpha=0.26$ 3.
7049.1 4	632.1	0.40 2	384 20	$I\alpha$ : <b>1970Re02</b> report $I\alpha=0.50$ 8.
7079.8 3	600.8	0.59 1	334 8	$I\alpha$ : <b>1970Re02</b> report $I\alpha=0.63$ 6.
7168.2 5	510.7	0.150 7	$2.66 \times 10^3$ 13	$I\alpha$ : <b>1970Re02</b> report $I\alpha=0.26$ 6.
7607.9 2	62.6	15.4 6	686 29	$I\alpha$ : <b>1970Re02</b> report $I\alpha=17.0$ 5.
7669.3 2	0.0	83.2 6	197 3	$I\alpha$ : <b>1970Re02</b> report $I\alpha=80.9$ 8.

<sup>†</sup> The evaluator has increased the values of **1976FrZO** by 0.3 keV to account for a change in calibration energy. The authors used  $E\alpha=7450$  2 for their  $^{211}\text{Po}$  calibration source. The energy for this transition as recommended by **1991Ry01** is 7450.3 5. The uncertainty in this calibration energy is not included in the  $E\alpha$  values, but is included in the deduced  $Q(\alpha)$  value which is based on the  $\alpha$  branches to the g.s. and first excited state. These branches give  $Q(\alpha)=7817.0$  2 and 7817.4 2, respectively, without the calibration uncertainty.

<sup>‡</sup> From **1976FrZO**. Values from **1970Re02** are given in comments.

<sup>#</sup>  $r_0(^{208}\text{Bi})=1.474$  6.

<sup>@</sup> Absolute intensity per 100 decays.