

$^{272}\text{Bh}$   $\alpha$  decay (10.5 s) 2004Og03,2013Ru11,2013Og01

| Type            | Author       | History Citation    | Literature Cutoff Date |
|-----------------|--------------|---------------------|------------------------|
| Full Evaluation | Balraj Singh | NDS 156, 148 (2019) | 31-Jan-2019            |

Parent:  $^{272}\text{Bh}$ :  $E=0$ ;  $T_{1/2}=10.5$  s +15-11;  $Q(\alpha)=9300$  50;  $\% \alpha$  decay  $\approx 100.0$

$^{272}\text{Bh}$ - $T_{1/2}$ : From  $^{272}\text{Bh}$  Adopted Levels.

$^{272}\text{Bh}$ - $Q(\alpha)$ : From 2017Wa10.

$^{272}\text{Bh}$ - $\% \alpha$  decay: Assumed  $\% \alpha=100$  for  $^{272}\text{Bh}$  decay.

$^{272}\text{Bh}$  produced in  $\alpha$ -decay chain:  $^{288}\text{Mc} \rightarrow ^{284}\text{Nh} \rightarrow ^{280}\text{Rg} \rightarrow ^{276}\text{Mt} \rightarrow ^{272}\text{Bh}$ , where  $^{288}\text{Mc}$  produced in  $^{243}\text{Am}(^{48}\text{Ca},3n)$ .

See  $^{272}\text{Bh}$  Adopted Levels for details of production and half-life of the isotope.

 $^{268}\text{Db}$  Levels

| E(level)           | $T_{1/2}$ | Comments                         |
|--------------------|-----------|----------------------------------|
| 0<br>$\approx 140$ | 28 h 3    | $T_{1/2}$ : from Adopted Levels. |

 $\alpha$  radiations

| $E\alpha^\dagger$    | E(level)      | $I\alpha^{\ddagger}$ | Comments   |
|----------------------|---------------|----------------------|--|
| $8.93 \times 10^3$ I | $\approx 140$ | 25                   | $E\alpha$ : other: 9.02 MeV 6 (2004Og03). Assumed as g.s. to g.s. $\alpha$ transition. |
| $9.07 \times 10^3$ I | 0             | 75                   |  |

$^\dagger$  From 2013Ru11.

$^\ddagger$  For absolute intensity per 100 decays, multiply by  $\approx 1.0$ .

 $\gamma(^{268}\text{Db})$ 

| $E_\gamma$    | $E_i(\text{level})$ | $E_f$ | Comments  |
|---------------|---------------------|-------|---|
| $\approx 140$ | $\approx 140$       | 0     | $E_\gamma$ : from 2013Ru11, based on $E\alpha$ values. Authors mention that the simulated $\gamma$ -ray yield is marginal and consistent with an empty spectrum from the Ge detector.<br>Mult.: M1 or E2 suggested by 2013Ru11, but no arguments are provided. It is that the $\gamma$ -ray would have been seen clearly if it were E1. |

$^{272}\text{Bh}$   $\alpha$  decay (10.5 s) 2004Og03,2013Ru11,2013Og01Decay Scheme