

⁷³Cu β⁻ decay (4.2 s) 1998Hu20

| Type | Author | History | Citation | Literature Cutoff Date |
|-----------------|---------------------------|---------|-------------------|------------------------|
| Full Evaluation | Balraj Singh and Jun Chen | | NDS 158, 1 (2019) | 16-May-2019 |

Parent: ⁷³Cu: E=0.0; J^π=3/2⁻; T_{1/2}=4.2 s 3; Q(β⁻)=6606.0 27; %β⁻ decay=100.0

⁷³Cu-J^π,T_{1/2}: From ⁷³Cu Adopted Levels.

⁷³Cu-Q(β⁻): from 2017Wa10.

1998Hu20: measured Eγ, Iγ, γγ, βγ coin, βγ(t), half-life of ⁷³Cu isotope.

1983Ru06 (also 1985Ru05): measured Eγ, Iγ, βγ-, γγ, half-life. Out of five γ rays reported by 1983Ru06, four are confirmed by 1998Hu20, but a 199.2γ with Iγ=17 2 is not confirmed. No level scheme was proposed by 1983Ru06.

⁷³Zn Levels

| E(level) | J ^π † | T _{1/2} | Comments |
|----------|-----------------------------|------------------|---|
| 0.0 | 1/2 ⁻ | | |
| 195.5 2 | 5/2 ⁺ | 13.0 ms 2 | %IT=100 T _{1/2} : from γ(t) (1998Hu20). Other: 13.1 ms 18 (2017Ve05) from γ(t). |
| 307.2 2 | (1/2,3/2,5/2 ⁻) | | |
| 449.6 2 | (3/2 ⁻) | | |
| 502.2 2 | (1/2,3/2,5/2 ⁻) | | |
| 1124.0 3 | (1/2,3/2,5/2) | | |
| 2008.9 3 | (1/2,3/2,5/2) | | |

† From Adopted Levels.

β⁻ radiations

All the β⁻ feedings and associated log ft values are considered as approximate by the evaluators, due to possible missing higher-energy levels above the 2009 level.

| E(decay) | E(level) | Iβ ⁻ †‡ | Log ft | Comments |
|----------|----------|--------------------|--------|-----------------|
| (4597 3) | 2008.9 | 1 1 | 6.5 | av Eβ=2052.0 14 |
| (5482 3) | 1124.0 | 3 1 | 6.4 | av Eβ=2481.6 14 |
| (6104 3) | 502.2 | 5 2 | 6.3 | av Eβ=2784.0 14 |
| (6156 3) | 449.6 | 43 12 | 5.4 | av Eβ=2809.6 14 |
| (6299 3) | 307.2 | 6 2 | 6.3 | av Eβ=2878.9 14 |
| (6606 3) | 0.0 | 42 12 | 5.6 | av Eβ=3028.4 14 |

Iβ⁻: from growth of 218γ in ⁷³Ga and β feeding to excited states (1998Hu20).

† From 1998Hu20.

‡ Absolute intensity per 100 decays.

γ(⁷³Zn)

Iγ normalization: From β-feedings as shown by 1998Hu20. The normalization is considered as approximate due to approximated β⁻ feedings.

⁷³Cu β⁻ decay (4.2 s) 1998Hu20 (continued)

γ(⁷³Zn) (continued)

| E _γ | I _γ [†] | E _i (level) | J _i ^π | E _f | J _f ^π | Mult. | α [‡] |
|----------------|-----------------------------|------------------------|-----------------------------|----------------|-----------------------------|-------|----------------|
| 195.5 | 2 | 195.5 | 5/2 ⁺ | 0.0 | 1/2 ⁻ | [M2] | 0.065 |
| 307.2 | 2 | 307.2 | (1/2,3/2,5/2 ⁻) | 0.0 | 1/2 ⁻ | | |
| 449.6 | 2 | 449.6 | (3/2 ⁻) | 0.0 | 1/2 ⁻ | | |
| 502.2 | 2 | 502.2 | (1/2,3/2,5/2 ⁻) | 0.0 | 1/2 ⁻ | | |
| 674.4 | 2 | 1124.0 | (1/2,3/2,5/2) | 449.6 | (3/2 ⁻) | | |
| 1559.3 | 2 | 2008.9 | (1/2,3/2,5/2) | 449.6 | (3/2 ⁻) | | |

[†] For absolute intensity per 100 decays, multiply by 0.47 13.

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

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Decay Scheme

Intensities: I_(γ+ce) per 100 parent decays

