^{260}Db α decay (1.52 s) 1977Be36,1971Dr01,1970Gh02

Type	Author	History Citation	Literature Cutoff Date
Update	Balraj Singh	ENSDF	04-Jun-2020

Parent: ^{260}Db: E=0.0; $T_{1/2}$=1.52 s *13*; Q(α)=9500 *SY*; %α decay=95 *5*

^{260}Db-$T_{1/2}$: From ^{260}Db Adopted Levels in the ENSDF database (Oct 1998 update), taken from 1977Be36. Others: 1.4 s *+6−3* (1971Dr01), 1.6 s *3* (1970Gh02). Other estimated values from studies of ^{272}Rg decay chain: 2.6 s *+18−8* (2002Ho11), 5.7 s *+23−13* (2004Mo27,2004Mo14), 1.45 s (2004Fo08).

^{260}Db-Q(α): 9500 *40* (syst,2017Wa10).

^{260}Db-%α decay: %$\alpha\geq$90.4 *6* was deduced by 1977Be36. For the purpose of absolute α intensities and HF values, evaluator uses %α=95 *5*, overlapping the lower and upper limits suggested by the measured value.

No new experimental references since the 2017 update (2017Si08) of ^{256}Lr. In the present update, very minor changes have been made.

1977Be36: measured Eα, Iα, x-ray intensities, half-life of ^{260}Db decay.

1971Dr01: measured Eα, half-life of ^{260}Db decay.

1970Gh02: measured Eα, Iα.

^{256}Lr Levels

E(level)[†]
236 *44*
282 *42*
317 *42*

[†] All the α groups were observed in coincidence with L x-rays(Lr) (1977Be36). The energy of the lowest level fed by the highest energy α, therefore, should be more than the L-shell binding energy. The absence of K x ray and γ rays suggests that E(level)<154, the K-binding energy. Q(α)(^{260}Db)=9500 *40* (syst) is recommended by 2017Wa10. Level energies are deduced from this Q(α) and measured Eα values.

α radiations

Eα[†]	E(level)	Iα[‡@]	HF[#]	Comments
9042 *14*	317	53 *5*	3.5 *7*	Other: Eα=9060, Iα=55 (1970Gh02).
9075 *14*	282	28 *5*	8.4 *22*	Other: Eα=9100, Iα=25 (1970Gh02).
9121 *17*	236	19 *3*	17 *4*	Other: Eα=9140, Iα=20 (1970Gh02).
				Eα: others: 9144 (2002Ho11), 8.35-9.40 MeV (2004Mo27,2004Mo14), 9416 (sum line,2004Fo08). All these estimates are from studies of ^{272}Rg α-decay chain.

[†] Energies measured by 1977Be36. The original energies given by 1977Be36 are increased by 1 keV because of changes in calibration energies: Eα(^{249}Cf) from 5813.5 to 5812.8 *16*, Eα(^{243}Am) from 5274.8 to 5275.3 *10*, Eα(^{244}Cm) from 5804.9 to 5804.77 *5*. Other measurements: 1970Gh02, 1971Dr01. For calibration, 1970Gh02 used Eα(^{213}Fr)=6773 and Eα(^{211}Po)=7443; 6775.0 *17* and 7450.3 *5* are recommended by 1991Ry01 for them, respectively.

[‡] α intensity per 100 α decays, measured by 1977Be36. The intensities measured by 1970Gh02 are also quoted for each α for comparison.

[#] r_0(^{256}Lr)=1.457 *10* used for deducing hindrance factors. This value of r_0 is based on a general trend in this mass region, as the r_0 values from the α decays of neighboring even-even nuclei are not available for interpolation.

[@] For absolute intensity per 100 decays, multiply by 0.95 *5*.