

Adopted Levels

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 159, 1 (2019)	30-Aug-2019

$Q(\beta^-)=4610$  SY;  $S(n)=4300$  SY;  $S(p)=10860$  CA;  $Q(\alpha)=-1340$  SY [2017Wa10](#)

[2012Ku26](#):  $^{177}\text{Er}$  produced and identified in  $^9\text{Be}(^{238}\text{U},\text{F})$ ,  $E=1$  GeV/nucleon reaction using SIS-18 synchrotron facility at GSI.

Target= $1.6\text{ g/cm}^2$   $^9\text{Be}$  placed at the entrance of projectile Fragment Separator (FRS). Particle identification was achieved by event-by-event in-flight analysis of time-of-flight, energy loss measurement, and magnetic rigidity ( $\text{tof}-\Delta E'-B\rho$ ), measured using two plastic scintillation detectors, ionization chambers (MUSIC) and four time-projection chambers (TPC), respectively. Isomer tagging method for known  $\mu\text{s}$  isomers was used to verify event-by-event identification and in-flight separation of new isotopes. Gamma rays from known isomers were recorded in coincidence with the incoming ions using either the RISING array of Ge detectors or only two Ge detectors, a stopper foil and a scintillator for veto signal. Measured production cross section.

 $^{177}\text{Er}$  Levels

E(level)	$J^\pi$	Comments
0.0	$(1/2^-)$	$\% \beta^- = 100$ Neutron-rich nuclide where only the $\beta^-$ decay mode is expected. E(level): the observed $^{177}\text{Er}$ fragments assumed to correspond to the g.s. $J^\pi$ : Tentative assignment from systematics in neighboring $N=109$ isotones and the expected $1/2[510]$ Nilsson configuration. $J^\pi=1/2^-$ is also predicted in <a href="#">1997Mo25</a> . $T_{1/2}$ : $>160$ ns; lower-limit from time-of-flight in <a href="#">2012Ku26</a> . The actual $\beta$ -decay half-life is expected to be much longer, e.g. 3 s ( <a href="#">2012Au07</a> and <a href="#">2017Au03</a> , systematics) and 8.5 s ( <a href="#">2019Mo01</a> , theoretical predictions). Production $\sigma=18$ nb 2 ( <a href="#">2012Ku26</a> ).