

${}^6\text{Be}$

An unbound state of ${}^6\text{Be}$ was first observed by Bogdanov et al. in 1958 “The (p,n) reaction on lithium and the ground state of the ${}^6\text{Be}$ nucleus” ([1958Bo78](#)). 9.6 MeV protons from the U.S.S.R. Academy of Sciences Nuclear Energy Institute 1.5 m cyclotron bombarded an enriched ${}^6\text{Li}$ target and ${}^6\text{Be}$ was produced in the (p,n) charge exchange reaction. ${}^6\text{Li}$ was identified by measuring the neutron time-of-flights in stilbene and tolane crystal scintillation counters. “The Q-value of the reaction ${}^6\text{Li}(p,n){}^6\text{Be}$ (ground state) deduced from the experimental data is: $Q = -5.2 \pm 0.2$ MeV and the mass defect of ${}^6\text{Be}$ is 20.3 ± 0.2 MeV.” A previously reported half-life assigned to either ${}^6\text{Be}$ or ${}^4\text{Li}$ of 0.4 s ([1954Ty33](#)) could not be confirmed.

Adapted from reference ([2012Th01](#))

- [1954Ty33](#) H. Tyren and P. A. Tove, Phys. Rev. **96**, 773 (1954).
[1958Bo78](#) G. F. Bogdanov, N. A. Vlasov, S. P. Kalinin, B. V. Rybakov, and V. A. Sidorov, J. Nuclear Energy **8**, 148 (1958).
[2012Th01](#) M. Thoennessen, At. Data Nucl. Data Tables **98**, 43 (2012).

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