^{257}Db

The discovery of ^{257}Db was reported in 1985 in the paper "The new isotopes ^{258}105, ^{257}105, ^{254}Lr and ^{253}Lr" by Heßberger et al. (1985He22). ^{209}Bi targets were bombarded with 4.65, 4.75, 4.85, and 4.95 MeV/u ^{50}Ti beams from the GSI UNILAC accelerator and ^{257}Db was formed in the (2n) fusion-evaporation reaction. Recoil products were separated with the velocity filter SHIP and implanted in seven position-sensitive surface barrier detectors which also measured subsequent α-decay and spontaneous fission. "Isotope ^{257}105: This isotope was produced in the reaction ^{209}Bi(^{50}Ti,2n)^{257}105 and also identified by $\alpha - \alpha$ correlations to its decay products ^{253}Lr, ^{249}Md, ^{24s}Es." The measured α-decay energies corresponds to decays from the ground state and an isomeric state. A previous assignment of a 5 s spontaneous fission half-life to ^{257}Db (1976Og02) was later reassigned to ^{258}Rf and ^{258}Db (1986He28).

Adapted from reference (2013Th02)

1976Og02 Y. T. Oganessian, A. G. Demin, N. A. Danilov, G. N. Flerov *et al.*, Nucl. Phys. A **273**, 505 (1976).

1985He22 F. P. Hessberger, G. Munzenberg, S. Hofmann, Y. K. Agarwal *et al.*, Z. Phys. A **322**, 557 (1985).

1986He28 F. P. Hessberger, G. Munzenberg, S. Hofmann, P. Armbruster *et al.*, J. Less-Common Met. **122**, 445 (1986).

2013Th02 M. Thoennessen, At. Data Nucl. Data Tables **99**, 312 (2013).

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