# $^{261}$Rf

The first observation of $^{261}$Rf was described by Ghiorso et al. in the 1970 paper "$^{261}$Rf; new isotope of element 104" (1970Gh01). A $^{248}$Cm target was bombarded with 90−100 MeV $^{18}$O beams from the Berkeley heavy-ion linear accelerator (Hilac) and $^{261}$Rf was populated in the (5n) fusion-evaporation reaction. Recoil products were swept by helium gas to a wheel, which rotated periodically. Alpha-decay and spontaneous fission were recorded with five Si-Au surface-barrier crystal detectors. "Altogether, as indicated above, the experimental data are consistent with the interpretation of the 8.3 MeV, 65 s $\alpha$ activity being the $\alpha$ precursor of $^{257}$No and thus unambiguously identifying it as $^{261}$Rf." The 2021 Atomic Mass Evaluation assigned this half-life to an isomeric state (2021Ko07) and the half-life of $4.2^{+3.4}_{-1.3}$s first identified by Hofmann et al. 32 years later (2002Ho11) to the ground state of $^{261}$Rf.

Adapted from reference (2013Th02)


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