^{30}Cl

The first observation of ^{30}Cl was reported by Mukha et al. in the 2018 paper "Deep excursion beyond the proton dripline. I. Argon and chlorine isotope chains" (2018Mu18). A 885 A·MeV ^{36}Ar beam from the SIS-FRS facility at GSI was used to produce a 620 MeV A·MeV ^{31}Ar beam in the first half of the FRS set in a separator-spectrometer mode. Unbound reaction products were generated at the ^{9}Be secondary target located at the FRS middle focal plane. The projectile-like fragments were analyzed by the second half of the FRS and the decay particles were measured by a double-sided silicon microstrip detector array. ^{30}Cl was populated either directly in the fragmentation or by proton emission from ^{31}Ar. "The ground states of the previously unknown isotopes ^{30}Cl and ^{28}Cl have been observed for the first time, providing the 1p-separation energies S_p of $-0.48(2)$ and $-1.60(8)$, MeV, respectively."

In 1986, Langevin et al. had demonstrated that ^{30}Cl is beyond the dripline and has a lifetime shorter than the time-of-flight of 170 ns (1986La17).

Adapted from reference (2019Th02)

1986La17 M. Langevin, A. C. Mueller, D. Guillemaud-Mueller, M. G. Saint-Laurent *et al.*, Nucl. Phys. A **455**, 149 (1986).

2018Mu18 I. Mukha, L. V. Grigorenko, D. Kostyleva, L. Acosta *et al.*, Phys. Rev. C **98**, 064308 (2018).

2019Th02 M. Thoennessen, Int. J. Mod. Phys. E **28**, 1930002 (2019).

Please cite this abstract as: "FRIB Nuclear Data Group, *Discovery of Nuclides Project*, Isotope Database, doi:10.11578/frib/2279152"