

³⁸S

³⁸S was identified in 1958 by Nethaway and Caretto in “New isotope, sulfur-38” (1958Ne10). A 48-MeV α -particle beam from the Berkeley 60-in cyclotron bombarded reagent-grade NaCl crystals and ³⁸S was formed in the reaction $^{37}\text{Cl}(\alpha,3p)$. Beta-activity was measured with a proportional counter following chemical separation. “All the chlorine samples were observed to decay with a single 37-minute half-life. The observed counting rates were extrapolated to the time of the sulfur-chlorine separation and then corrected for the chemical yield of the chlorine carrier added and for the loss of sulfur in each separation step. In [the figure] these results are presented in a plot of corrected chlorine activity versus the time of separation. The slope of the line indicates that the parent of Cl^{38} has a half-life of about 172 minutes, and the repeated chemical isolation of Cl^{38} from the sulfur fraction verifies the assignment as S^{38} .”

Adapted from reference (2012Th10)

1958Ne10 D. R. Nethaway and A. A. Caretto Jr., Phys. Rev. **109**, 504 (1958).
2012Th10 M. Thoennessen, At. Data Nucl. Data Tables **98**, 933 (2012).

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