

$^{32}\text{S}(\alpha, n)$ **1963Ne05**

| Type | Author | History | Citation | Literature Cutoff Date |
|-----------------|------------------------|---------|------------------|------------------------|
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1963Ne05: A 12.20-MeV α beam was produced by the Tandem Van de Graaff Accelerator at Florida State University. Targets were natural sulfur. Positrons were detected using a Ne102 plastic scintillator. Annihilation γ rays were detected using a NaI crystal. The half-life of $^{35}\text{Ar}(\text{g.s.})$ was measured with a Technical Measurements Corporation 256 channel analyzer and multiscaler logic unit. Counting time per channel was determined by the sweep of a Tektronix Oscilloscope and measured using the standard frequency output of a Hewlett-Packard Electronic Counter Model 524-C. Changes in slope of the excitation curve are interpreted as excited-state thresholds due to excited levels in the product nucleus ^{35}Ar . The threshold of $^{35}\text{Cl}(\text{p}, n)^{35}\text{Ar}(\text{g.s.})$ using a thick AgCl target was also measured to confirm the ^{35}Ar ground state mass.

^{35}Ar isotope discovery: $^{32}\text{S}(\alpha, n)^{35}\text{Ar}$ at Purdue ([1940Ki12](#), [1941Ki01](#), [1941Ei04](#)).

 ^{35}Ar Levels

| E(level) [†] | $T_{1/2}$ | Comments |
|-----------------------|-----------|--|
| 0 | 1.76 s 3 | $T_{1/2}$: from decay curve in 1963Ne05 . Threshold $E(\alpha)_{\text{lab}}=9.846$ MeV 20. |
| 890 50 | | Threshold $E(\alpha)_{\text{lab}}=10.69$ MeV 50. |
| 2030 80 | | Threshold $E(\alpha)_{\text{lab}}=11.97$ MeV 80. |

[†] From [1963Ne05](#).