

$^{36}\text{Ar}(\text{d},\alpha),(\text{pol d},\alpha)$  1969Br21,1972Ho02,1982Ta04

| Type            | Author                   | History | Citation             | Literature Cutoff Date |
|-----------------|--------------------------|---------|----------------------|------------------------|
| Full Evaluation | Ninel Nica, Balraj Singh |         | NDS 113, 1563 (2012) | 28-May-2012            |

**1969Br21:**  $^{36}\text{Ar}(\text{d},\alpha)$  E=45 MeV,  $^{36}\text{Ar}$  99.6%-enriched target. Used two telescopes each consisting In  $\Delta\text{E}$ -E-E detectors of phosphorus-diffused silicon type (for  $\Delta\text{E}$ ) and Si(Li) type (for the two E detectors). The first two  $\Delta\text{E}$ -E detectors are operated In coincidence and the third E one is operated In anticoincidence (to eliminate long-range particles). Measured angular distribution In between  $14.1^\circ$  and  $50.7^\circ$ . Used DWBA fit (code DWUCK). Also studied  $^{36}\text{Ar}(\text{p},^3\text{He})$  – see respective dataset.

**1972Ho02:**  $^{36}\text{Ar}(\text{d},\alpha)$  E=19 MeV,  $^{36}\text{Ar}$  99.6%-enriched target. Used Enge split-pole spectrograph. Measured  $\alpha$  particle angular distribution and did DWBA analysis (code DWUCK).

**1982Ta04** (supersedes **1980To13**:  $^{36}\text{Ar}(\text{pol d},\alpha)$  E=16 MeV. 99.9%-enriched target. Used four solid-state detectors of 100-200 keV FWHM and did analyzing power measurements. Did DWBA analysis (code DWUCK).

 $^{34}\text{Cl}$  Levels

| E(level) <sup>†</sup> | J $\pi$ <sup>‡</sup> | L <sup>#</sup> | Comments   |
|-----------------------|----------------------|----------------|--|
| 147 20                | 3+&                  | 4 <sup>a</sup> |  |
| 459 20                | 1 <sup>+</sup>       | 0+2            |  |
| 665 20                | 1 <sup>+</sup>       | 0+2            |  |
| 1229 20               | 2+&                  | 2 <sup>a</sup> |  |
| 1890 20               | 2+&                  | 2 <sup>a</sup> |  |
| 2191 20               | 3 <sup>+</sup>       | 2+4            |  |
| 2382 20               |                      |                |  |
| 2589 20               | 1 <sup>+</sup>       | 0+2            |  |
| 2612 17               |                      |                | E(level): weighted average of 2600 30 (1969Br21) and 2620 20 (1972Ho02). |
| 2725 20               | 2 <sup>-</sup>       | 1+3            |  |
| 3141 17               | 1 <sup>+</sup>       | 0+2            | E(level): weighted average of 3130 30 (1969Br21) and 3146 20 (1972Ho02). |
| 3333 18               |                      |                | E(level): weighted average of 3330 40 (1969Br21) and 3334 20 (1972Ho02). |
| 3377 20               |                      |                |  |
| 4970 <sup>cd</sup> 40 | (0) <sup>+</sup> @   | 0 <sup>b</sup> |  |
| 5600 <sup>c</sup> 40  |                      |                |  |
| 6160 <sup>cd</sup> 40 | (2) <sup>+</sup> @   | 2 <sup>b</sup> |  |
| 7070 <sup>c</sup> 40  |                      |                |  |

<sup>†</sup> From 1972Ho02, unless noted otherwise.

<sup>‡</sup> From 1972Ho02 based on measured L values, unless noted otherwise.

<sup>#</sup> From DWBA analysis of 1972Ho02, unless noted otherwise.

@ Isobaric analog state of  $^{34}\text{Ar}$  state from  $^{36}\text{Ar}(\text{p},\text{t})$  reaction also studied by 1969Br21 (for the  $^{36}\text{Ar}(\text{p},\text{t})$  reaction  $J_f=L$  and  $\pi_f=(-1)^{J_f}$ ).

& From vector and tensor analyzing power (1982Ta04).

<sup>a</sup> From DWBA analysis of 1982Ta04.

<sup>b</sup> From DWBA analysis of 1969Br21.

<sup>c</sup> From 1969Br21.

<sup>d</sup> Doublet state (1969Br21).