## $^{81}$Br(p,d) 1978Kl13

| Type | Author | History Citation | Literature Cutoff Date |
|---|---|---|---|
| Full Evaluation | Balraj Singh | NDS 105, 223 (2005) | 22-Jun-2005 |

$J^{\pi}$($^{81}$Br g.s.)=3/2$^{-}$.

1978Kl13: E=22.8 Mev. Deuterons analyzed by magnetic spectrograph and a helical-cathode proportional counter, FWHM=14 keV. $\sigma(\theta)$ data from 5° to 55°. DWBA analysis for L-transfers and spectroscopic factors. See also 1978KlZT for details.

### $^{80}$Br Levels

| E(level)[#] | L[†] | $C^2S$[‡] | Comments |
|---|---|---|---|
| 0 | 1 | 0.34, 0.30 | |
| 82 *4* | 4 | 1.26, 0.72 | |
| 271 *4* | 1+4[@] | 0.27, 0.23 | L: (0.5)1+(0.5)4.<br>$C^2S$: 1.97, 1.13 for L=4. |
| 311 *4* | 1+4[@] | 0.17, 0.15 | L: (0.3)1+(0.7)4.<br>$C^2S$: 1.59, 0.91 for L=4. |
| 377 *4* | 4 | 0.28, 0.16 | |
| 462 *4* | 1+3 | 0.23, 0.21 | L: (0.5)1+(0.5)3.<br>$C^2S$: 0.68, 0.45 for L=3. |
| 497 *4* | 2+4 | 0.025, 0.020 | L: (0.2)2+(0.8)4.<br>$C^2S$: 0.21, 0.12 for L=4. |
| 512 *4* | 4 | 0.58, 0.33 | |
| 543 *4* | (3) | 0.33, 0.22 | |
| 570 *4* | 4 | 0.71, 0.41 | |
| 612 *4* | (2) | 0.026, 0.021 | |
| 654 *4* | 1+3 | 0.32, 0.28 | L: (0.6)1+(0.4)3.<br>$C^2S$: 1.07, 0.71 for L=3. |
| 688 *4* | 2+4 | 0.019, 0.015 | L: (0.1)2+(0.9)4.<br>$C^2S$: 0.33, 0.19 for L=4. |
| 716 *4* | 1+3 | 0.13, 0.12 | L: (0.7)1+(0.3)3.<br>$C^2S$: 0.13, 0.089 for L=3. |
| 761 *4* | 1+4[@] | 0.16, 0.14 | L: (0.5)1+(0.5)4.<br>$C^2S$: 1.16, 0.67 for L=4. |
| 819 *4* | 1+(3) | 0.007, 0.006 | L: (0.3)1+(0.7)(3).<br>$C^2S$: 0.049, 0.033 for L=3. |
| 854 *4* | 1 | 0.052, 0.046 | |
| 908 *4* | 2+4 | 0.010, 0.008 | L: (0.1)2+(0.9)4.<br>$C^2S$: 0.18, 0.11 for L=4. |
| 960 *4* | 1+3 | 0.024, 0.021 | L: (0.3)1+(0.7)3.<br>$C^2S$: 0.15, 0.10 for L=3. |
| 1006 *4* | 1+(3) | 0.088, 0.077 | L: (0.7)1+(0.3)3.<br>$C^2S$: 0.089, 0.059 for L=3. |
| 1068 *4* | 1+(3) | 0.54, 0.47 | L: (0.7)1+(0.3)(3).<br>$C^2S$: 0.53, 0.35 for L=3. |
| 1107 *4* | 1+(3) | 0.16, 0.14 | L: (0.7)1+(0.3)(3).<br>$C^2S$: 0.15, 0.098 for L=3. |
| 1144 *4* | 1+3 | 0.023, 0.020 | L: (0.3)1+(0.7)3.<br>$C^2S$: 0.14, 0.094 for L=3. |
| 1196 *4* | 1+3 | 0.062, 0.055 | L: (0.5)1+(0.5)3.<br>$C^2S$: 0.17, 0.12 for L=3. |
| 1240 *4* | 1 | 0.12, 0.10 | |
| 1274 *4* | 1+(3) | 0.027, 0.024 | L: (0.5)1+(0.5)(3).<br>$C^2S$: 0.023, 0.049 for L=3. |
| 1313 *4* | | | |

Continued on next page (footnotes at end of table)

## $^{81}$Br(p,d) 1978Kl13 (continued)

### $^{80}$Br Levels (continued)

| E(level)[#] | L[†] | $C^2S$[‡] | Comments |
|---|---|---|---|
| 1383 *4* | 1+(3) | 0.009, 0.008 | L: (0.3)1+(0.7)(3).<br>$C^2S$: 0.055, 0.037 for L=3. |
| 1428 *4* | 1+3 | 0.030, 0.026 | L: (0.7)1+(0.3)3.<br>$C^2S$: 0.029, 0.019 for L=3. |
| 1445 *4* | 1+4[@] | 0.022, 0.019 | L: (0.3)1+(0.7)4.<br>$C^2S$: 0.16, 0.099 for L=4. |
| 1499 *4* | 1 | 0.045, 0.039 | |
| 1520 *4* | 1+(3) | 0.028, 0.024 | L: (0.5)1+(0.5)(3).<br>$C^2S$: 0.076, 0.051 for L=3. |
| 1576 *4* | 1 | 0.040, 0.036 | |
| 1598 *4* | (4) | 0.18, 0.11 | |
| 1724 *4* | 1+(3) | 0.010, 0.009 | L: (0.5)1+(0.5)(3).<br>$C^2S$: 0.028, 0.019 for L=3. |
| 1759 *4* | (1+3) | 0.006, 0.005 | L: (0.3)(1)+(0.7)(3).<br>$C^2S$: 0.035, 0.023 for L=3. |

† From DWBA analysis. Mixed L-transfers of opposite parity probably refers to a doublet while those of same parity refers to a single state. Fraction for each L-component is given under comments. The authors point out that for L=1, a small L=3 mixture cannot be ruled out.

‡ $C^2S$ values deduced by 1978Kl13 from $\sigma$(exp)=22.9×$\sigma$(DWBA)*C2S/(2J+1). Two $C^2S$ values are given. First for L+(1/2) and the second for L-(1/2). For cases of mixed L-transfers, the $C^2S$ values for the higher L-transfer are given under comments.

# Authors′ give general uncertainty of ≈4 keV.

@ Mixed L-transfer suggests doublet.