

The transformation from case (a) to case (b) is given by*:

$$|N\Lambda SJ\rangle = \sum_{\Sigma, \Omega} (-1)^{N-S+\Omega} \sqrt{2N+1} \begin{pmatrix} J & S & N \\ \Omega & -\Sigma & -\Lambda \end{pmatrix} \|\Lambda S \Sigma J \Omega\rangle$$

* J.M. Brown and B.J. Howard, *Molecular Physics*, **31** (5), 1517-1525 (1976).