

multiplicity (spin multiplicity)

The number of possible orientations, calculated as $2S + 1$, of the spin angular momentum corresponding to a given total spin quantum number (S), for the same spatial electronic wavefunction. A state of singlet multiplicity has $S = 0$ and $2S + 1 = 1$. A doublet state has $S = \frac{1}{2}$, $2S + 1 = 2$, etc. Note that when $S > L$ (the total orbital angular momentum possible) there are only $2L + 1$ orientations of total angular momentum possible.

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