The venerable phenomenon of electronic state quenching has long been studied, with most interactions based on molecular oxygen. While the effects are well established, theoretically interpreted and widely applied, a number of mysteries concerning details of quenching mechanism still remains. We have investigated quenching of gas phase $S_1$ para-difluorobenzene (pDFB) over an unusually wide $O_2$ pressure range, from 1 to $10^4$ Torr. We have also explored the quenching dependence on selected $S_1$ vibrational states. These experiments yield the absolute quenching rate constants in the context of a quenching model that is consistent with the non-linear Stern-Volmer behavior. Finally, we discuss how this study relates to high pressure quenching that transforms the pDFB fluorescence spectrum and allows the absolute vibrational energy transfer rate constants to be measured for regions of high state densities where traditional methods fail.