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Mechanism and Reactivity in Z-Philic Reactions of Halogeno-sulphones

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Mechanism and Reactivity in Z-Philic Reactions of Halogeno-sulphones

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We have quantified reactivity in reactions of the type:

$$\begin{array}{c} \text{Nu:} \quad Z \\ \text{PhSO}_2 \\ \text{X} \end{array} \begin{array}{c} \text{LG} \\ \text{b} \\ \text{Y} \end{array} \begin{array}{c} \text{LG} \\ \text{PhSO}_2 \\ \text{Z} \end{array}$$

which we have examined with respect to the nature of the nucleophile, the electrophile Z, the leaving group, LG, the pendant group, X and the competition between the 'reduction' and elimination pathways a and b.

Isotope fractionation factors have been determined for pathway a, and the enforced acid catalysis of such processes will be discussed.