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REACTIONS OF SULPHUR MONOXIDE WITH ORGANIC SUBSTRATES

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REACTIONS OF SULPHUR MONOXIDE WITH ORGANIC SUBSTRATES

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Sulphur monoxide, generated in situ from mild thermolysis of aryl substituted thiiran 1-oxides, reacts with organic substrates of type (I) according to the scheme



The validity of the proposed scheme has been checked for:

- a) diazoalkanes ($\text{X} = \text{R}_2\text{C}$, $\text{Y} = \text{N}_2$)
- b) phosphonium ylids ($\text{X} = \text{R}_2\text{C}$, $\text{Y} = \text{PPh}_3$)
- c) sulphonium ylids ($\text{X} = \text{R}_2\text{C}$, $\text{Y} = \text{SR}_2$)
- d) pyridinium ylids ($\text{X} = \text{R}_2\text{C}$, $\text{Y} = \text{C}_5\text{H}_5\text{N}$)
- e) azides ($\text{X} = \text{RN}$, $\text{Y} = \text{N}_2$)
- f) aromatic N-oxides ($\text{X} = \text{O}$, $\text{Y} = \text{heterocyclic base}$)

Diazoalkanes and ylids lead to thiocarbonyl S-oxides; aliphatic and aromatic azides give rise to N-sulphinylamines. The reactions of sulphur monoxide with pyridine or quinoline N-oxides represent an alternative method for the deoxygenation under mild conditions of such substrates.