The following group in an organic molecule is called the nitroso group.

\[ \overset{\bullet}{\text{N}}=\overset{\bullet}{\text{O}} \]

eg:

1. \[ \text{CH}_3\overset{\bullet}{\text{N}}=\overset{\bullet}{\text{O}} \]
2. \[ \text{(CH}_3)_2\text{C}=\overset{\bullet}{\text{N}}=\overset{\bullet}{\text{O}} \]
3. \[ \text{Ar}=\overset{\bullet}{\text{N}}=\overset{\bullet}{\text{O}} \]

The nitrosyl group is stable only if there are no alpha hydrogens to it. Thus, \( 1 \) is unstable, and \( 2 \) and \( 3 \) are stable. \( 1 \) exists mostly as the tautomer \( 4 \), which is an oxime.

\[ \text{CH}_3\overset{\bullet}{\text{N}}=\overset{\bullet}{\text{O}} \quad \xrightarrow{\text{tautomer}} \quad \text{CH}_2=\overset{\bullet}{\text{N}}=\overset{\bullet}{\text{O}}\overset{\bullet}{\text{H}} \]

see also nitrosyl cation

Contributors

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