

Editorial on Thiols and sulfides

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EDITORIAL

A thiol is a chemical compound with a SH functional group. The mercapto group is the same as the -SH group. A disulfide is a compound with a -S-S- linkage in its structure. The sulphur analogues of ethers are (organic) sulphides, which have the form R-S-R'.

A thiol is a compound that includes the -SH functional group, which is the sulphur counterpart of a hydroxyl or alcohol group in organic chemistry. A thiol group or a sulfhydryl group is the name for the functional group. Mercaptans are a term that has been used to describe thiols in the past.

Sulfur-containing organic compounds' chemistry is often overlooked in introductory organic chemistry courses. We also included a brief section on these compounds, not to increase the amount of material to be digested, but because much of the chemistry of these compounds can be predicted by understanding their oxygen-containing analogues. A thiol is a chemical compound with a SH functional group. The mercapto group is the same as the -SH group. A disulfide is a compound with a -S-S- linkage in its

structure. The sulphur analogues of ethers are (organic) sulphides, which have the form R-S-R'. If one knows the nomenclature of the related ethers, one can easily grasp the nomenclature of sulphides. It's worth noting that "thio" is also a concept used in inorganic chemistry. The sulphate ion, for example, is SO_4^{2-} ; thiosulfate is $\text{S}_2\text{O}_3^{2-}$, in which one of the oxygen atoms of a sulphate ion has been substituted by a sulphur atom.

Alkoxy anions, RO⁻, are similar to thiolate anions, RS⁻. Alkoxy anions are weaker nucleophiles than thiolate anions (see Section 11.5, pages 389-394 of the textbook). Consider trialkylsulfonium ions to be close to the hydronium ions produced by protonating water if you're having trouble understanding why they're formed.

The easiest way to call sulphides is to name each of the two carbon groups separately, and then add a space and the term sulphide.

Ethyl methyl sulphide ($\text{CH}_3\text{-CH}_2\text{-S-CH}_3$)

"Thiols" are compounds with -SH as the primary group directly attached to carbon. Their names are created by appending the suffix "-thiol" to the name of the parent compound in substitutive nomenclature.

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