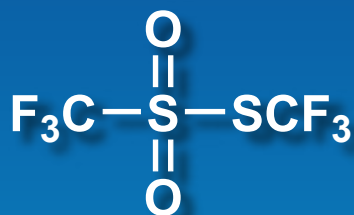


Highly Versatile and Atom-Efficient Trifluoromethylthiolating Agent TTST

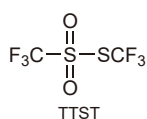


S-(Trifluoromethyl) Trifluoromethanesulfonylthioate (= TTST)

1g / 5g [T4211]

Advantages

- Liquid that is easy-to-handle in air, at ambient temperature.
- Can switch among generating trifluoromethylthio cation species, anion species, and radical species depending on the reaction conditions.

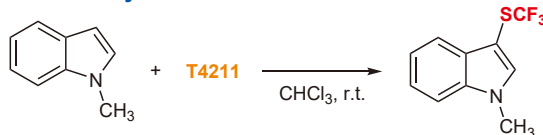


As a trifluoromethylthio (CF_3S) group is reported to improve properties of chemicals, it is gathering more attention in pharmaceutical and agricultural chemistry.^{1,2)} Unlike conventional trifluoromethylthiolating agents, TTST contains no metals such as expensive silver. In addition, TTST has no high molecular weight organic parts such as imides. Therefore, TTST does not generate high molecular weight organic wastes after the reactions.

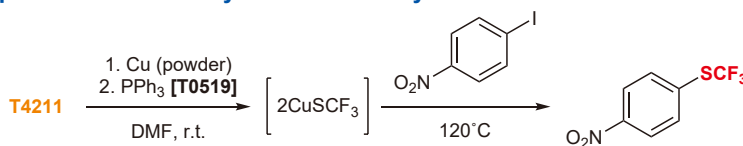
Applications

TTST can generate three types of reactive species (nucleophilic, electrophilic and radical species) by controlling the reaction conditions.³⁾ Representative applications of TTST are shown below.

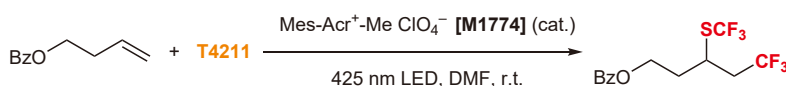
Electrophilic Trifluoromethylthiolation of Electron-rich Aromatic Ring³⁾



Nucleophilic Trifluoromethylthiolation of Aryl Iodide³⁾



Radical Trifluoromethylthiolation of Alkene³⁾



- References 1) C. Hansch, A. Leo, S. H. Unger, K. H. Kim, D. Nikaitani, E. J. Lien, *J. Med. Chem.* **1973**, *16*, 1207. <https://doi.org/10.1021/jm00269a003>
2) X. H. Xu, K. Matsuzaki, N. Shibata, *Chem. Rev.* **2015**, *115*, 731. <https://doi.org/10.1021/cr500193b>
3) Y. Yang, S. Miraghaee, R. Pace, T. Umemoto, G. B. Hammond, *Angew. Chem. Int. Ed.* **2023**, *62*, e202306095. <https://doi.org/10.1002/anie.202306095>

Related Products

Triphenylphosphine

25g / 100g / 500g [T0519]

9-Mesityl-10-methylacridinium Perchlorate (= Mes-Acr⁺-Me ClO₄⁻)

1g / 5g [M1774]

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