

Crystalline Hypochlorite Salt with Ease of Handling

NaClO · 5H₂O

Sodium Hypochlorite Pentahydrate

25g / 500g

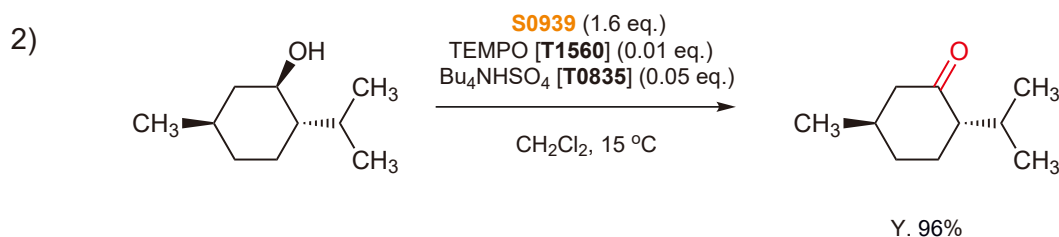
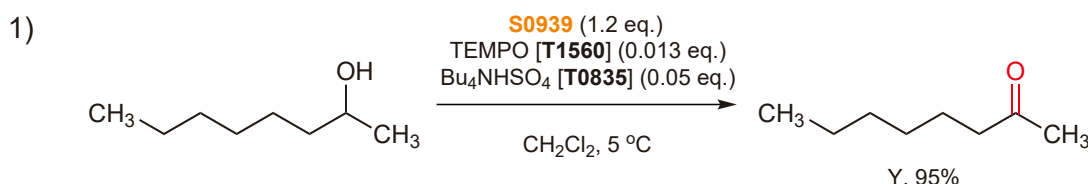
[S0939]

Advantages

- A Crystalline Compound Capable of Being Weighed
- Stable for Long Term in a Refrigerator
- Effective for the Oxidations of Hydroxy Groups and Sulfur-containing Compounds

Application

Oxidations of Secondary Alcohols



Procedure (reaction formula 1)

NaOCl·5H₂O (2.0 g, 12.2 mmol) is added in one portion to a mixture of Bu₄NHSO₄ (0.17 g, 0.50 mmol), TEMPO free radical (21 mg, 0.13 mmol), and 2-octanol (1.30 g, 10.0 mmol) in CH₂Cl₂ (10 mL) at 5 °C. The reaction is stopped after 0.5 h by quenching with aq. sat. Na₂SO₃ solution (20 mL). The organic layer is separated, and the aqueous layer is extracted with CH₂Cl₂ (30 mL). The combined organic layers are washed with H₂O (30 mL), dried over Na₂SO₄, concentrated and distilled to give 2-octanone as a colorless oil (95% yield).

Reference T. Okada, T. Asawa, Y. Sugiyama, M. Kiriara, T. Iwai, Y. Kimura, *Synlett* **2014**, 25, 596.
DOI: <https://10.1055/s-0033-1340483>

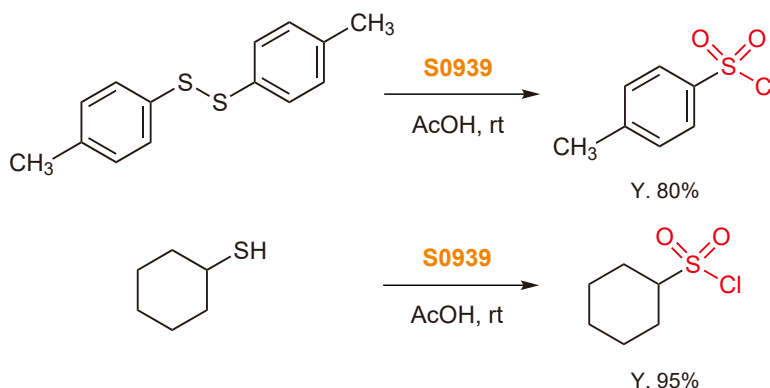
Related Products

TEMPO Free Radical
Tetrabutylammonium Hydrogen Sulfate

5g / 25g [T1560]
25g / 100g / 500g [T0835]

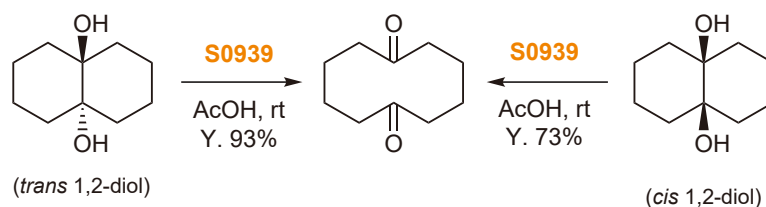
Other Applications

Syntheses of Sulfonyl Chlorides from Disulfides or Thiols



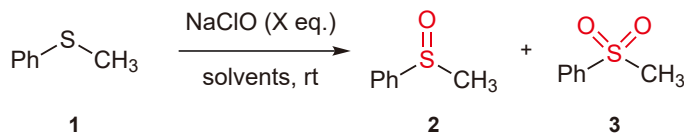
Reference T. Okada, H. Matsumuro, T. Iwai, S. Kitagawa, K. Yamazaki, T. Akiyama, T. Asawa, Y. Sugiyama, Y. Kimura, M. Kiriara, *Chem. Lett.* **2015**, 44, 185.
DOI: <https://doi.org/10.1246/cl.140899>

An Oxidative Cleavage of 1,2-Diols



Reference M. Kiriara, *et al.*, The 95th CSJ Annual Meeting, Chiba, Japan, March 26-29, **2015**, Abstr. No. 1E3-38.

Oxidation of Sulfides by an Equivalent Control



NaClO	X eq.	time (h)	solvents	NMR ratio (%), GC area (%)*		
				1	2	3
S0939	1.1	0.3	CH ₃ CN : H ₂ O	0	98	2
12% NaClO aq.	1.1	4	CH ₃ CN	5	79	16
S0939	2.4	2	Toluene : H ₂ O	0*	0*	>99*
13% NaClO aq.	2.4	24	Toluene	40*	1*	58*

References T. Okada, H. Matsumuro, S. Kitagawa, T. Iwai, K. Yamazaki, Y. Kinoshita, Y. Kimura, M. Kiriara, *Synlett* **2015**, 26, 2547.
DOI: <https://doi.org/10.1055/s-0035-1560482>
Y. Sugiyama, T. Okada, M. Kiriara, Y. Kimura, *Fain Kemikaru (Fine Chemical)* **2015**, 44, 53.

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