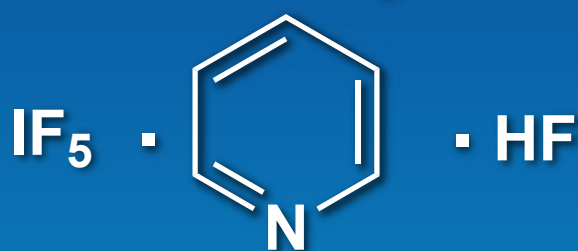


# Stable Fluorinating Reagent with Ease of Handling (Hara Reagent)



[P2140]

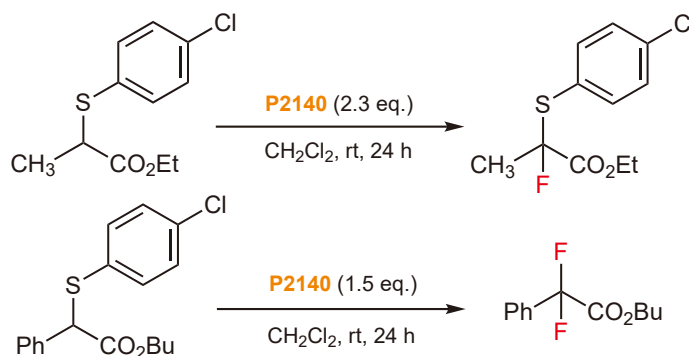
## Advantages

- Easy-to-Handle Crystalline Solid
- Widely Applicable to Various Fluorinations of Sulfides

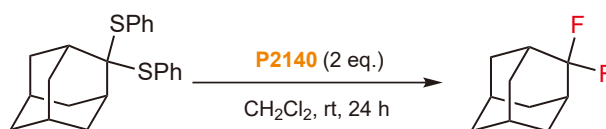
IF<sub>5</sub>-Pyridine-HF (P2140), which was first reported by Hara *et al.*, is a novel fluorinating reagent. Pentafluoriodide (IF<sub>5</sub>) is a strong fluorinating liquid agent, but it is unstable in air and decomposes, generating HF. P2140 is a crystalline solid with air stability and non-hygroscopicity which makes it easier to handle, and can be used as an alternative reagent to IF<sub>5</sub>. P2140 can be applied to various fluorination reactions of sulfides as follows.<sup>1-4)</sup> In addition, P2140 iodofluorinates alkenes with stereo- and regioselectivity.<sup>5)</sup>

## Applications

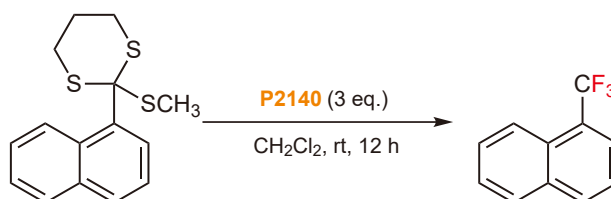
### Fluorination of the $\alpha$ -Positon of a Sulfide and Desulfurizing-Difluorination<sup>1)</sup>



### Desulfurizing-Difluorination of Aldehyde and Ketone Dithioacetals<sup>1)</sup>



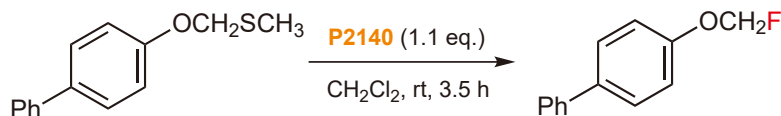
### Trifluoromethylation of Aldehyde Thioacetal Derivatives<sup>1)</sup>



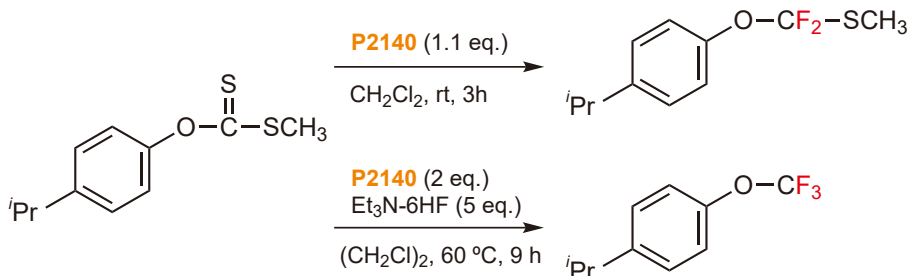
# Stable Fluorinating Reagent with Ease of Handling (Hara Reagent)

## Other Applications

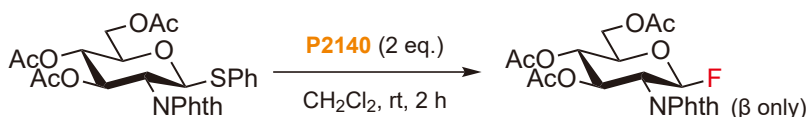
### Desulfurizing-Fluorination of Methylthiomethyl Ethers and Esters<sup>2)</sup>



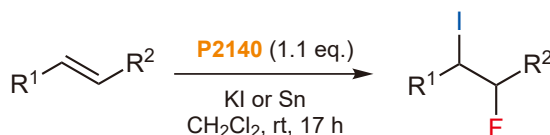
### Conversion of Dithiocarbonates to OCF<sub>2</sub>SCH<sub>3</sub> or OCF<sub>3</sub><sup>3)</sup>



### Synthesis of Glycosyl Fluorides from (Phenylthio)glycosides<sup>4)</sup>



### Iodofluorination of Alkenes<sup>5)</sup>



- References** 2) M. Kunigami, S. Hara, *J. Fluorine Chem.* **2014**, 167, 101. DOI: <https://doi.org/10.1016/j.jfluchem.2014.05.008>  
 3) T. Inoue, C. Fuse, S. Hara, *J. Fluorine Chem.* **2015**, 179, 48. DOI: <https://doi.org/10.1016/j.jfluchem.2015.04.016>  
 4) M. Kunigami, S. Hara, *Carbohydr. Res.* **2015**, 417, 78. DOI: <https://doi.org/10.1016/j.carres.2015.08.005>  
 5) S. Yano, S. Hara, *Synthesis* **2015**, 2839. DOI: <https://doi.org/10.1055/s-0034-1381003>

## IF<sub>5</sub>-Pyridine-HF (= Hara Reagent)

1g / 5g [P2140]

This reagent was merchandised under the tie-up with DAIKIN INDUSTRIES, LTD.

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fluorination



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