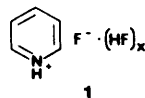


# Hydrogen Fluoride-Pyridine Reagent



## A Convenient Form of Anhydrous HF

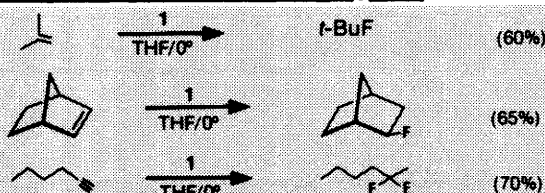
Professor George Olah has pioneered the development of the hydrogen fluoride-pyridine reagent (1) as a convenient



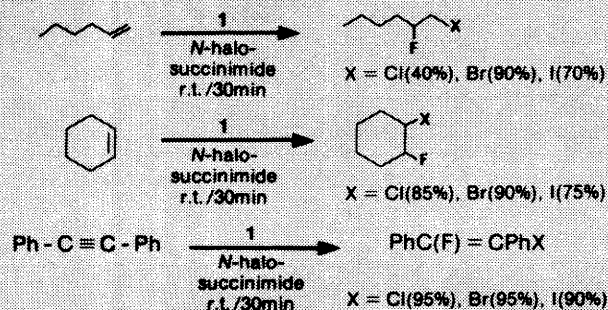
form of anhydrous HF.<sup>1-6</sup> This remarkable reagent consists of pyridinium polyhydrogen fluoride in equilibrium with a small amount of free HF. It is a relatively stable liquid which suffers no appreciable loss of volatile hydrogen fluoride at temperatures up to 50°C.

Below are some of the synthetic transformations that have been achieved by the use of the hydrogen fluoride-pyridine reagent.

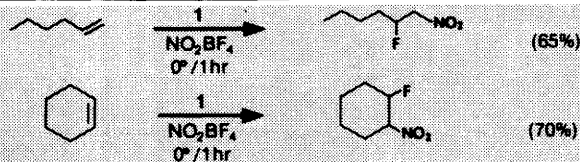
### Hydrofluorination of Olefins and Acetylenes<sup>1</sup>



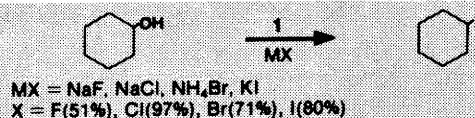
### Halofluorination of Olefins and Acetylenes<sup>2</sup>



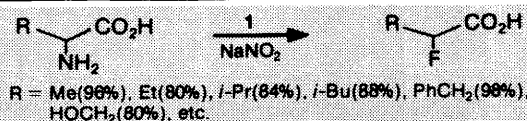
### Nitrofluorination of Olefins<sup>3</sup>



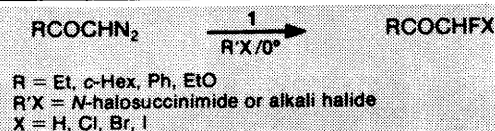
### Alkyl Halides from Alcohols<sup>4</sup>



### α-Fluoro Acids from α-Amino Acids<sup>5</sup>



### Halofluorinated Ketones from Diazoketones<sup>6</sup>



### Deprotection of Amino Acids<sup>7</sup>

Protected Amino Acid	Substrate	Yield (%)	Free Amino Acid
	Box-Glu(OBzl)-OH	100	
	Boc-Ser(Bzl)-OH	93	
	Boc-Thr(Bzl)-OH	95	
	Boc-His(Tos)-OH	95	
	Boc-Met-OH	92	
	H-Phe-OBzl	94	
	H-Lys(Boc)-O- <i>t</i> -Bu	97	
	Boc-Leu-resin	96	
	Boc-Pro-resin	92	

#### References:

- 1) G.A. Olah, M. Nojima, and I. Kerekes, *Synthesis* 779 (1973).
- 2) G.A. Olah, M. Nojima, and I. Kerekes, *ibid.*, 780 (1973).
- 3) G.A. Olah and M. Nojima, *ibid.*, 785 (1973).
- 4) G.A. Olah and J. Welch, *ibid.*, 653 (1974).
- 5) G.A. Olah and J. Welch, *ibid.*, 652 (1974).
- 6) G.A. Olah and J. Welch, *ibid.*, 896 (1974).
- 7) S. Matsuura, C.-H. Niu, and J.S. Cohen, *Chem. Commun.*, 451 (1976).

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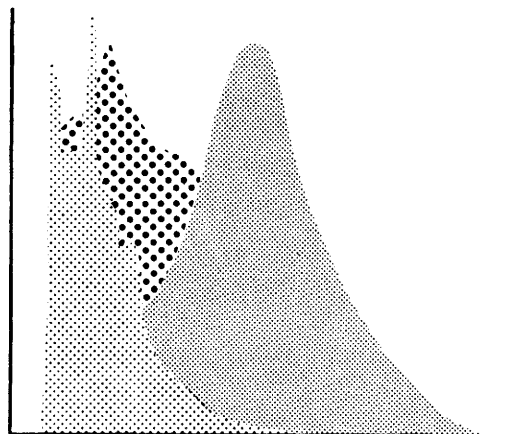
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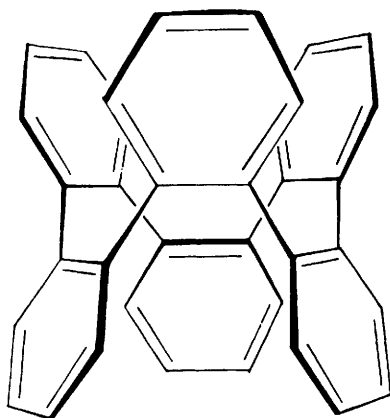
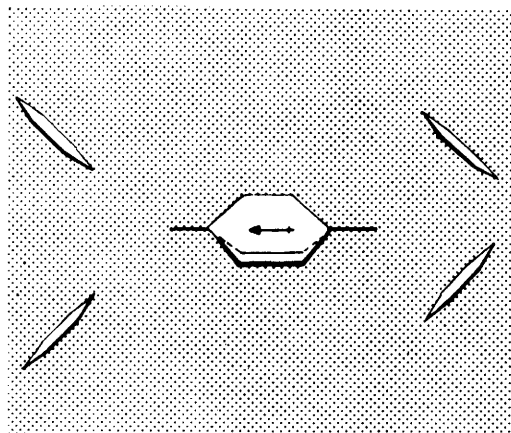
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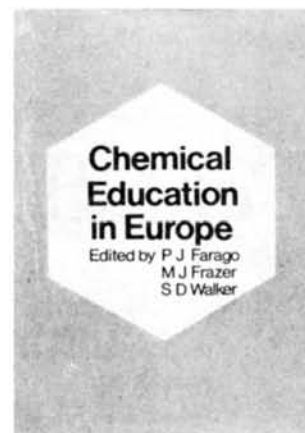
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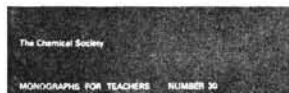
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