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$Et_3N/3HF$ – A HIGHLY VERSATILE SOURCE FOR FLUORIDE ION IN HALOFLUORINATION REACTIONS OF UNSATURATED COMPOUNDS†

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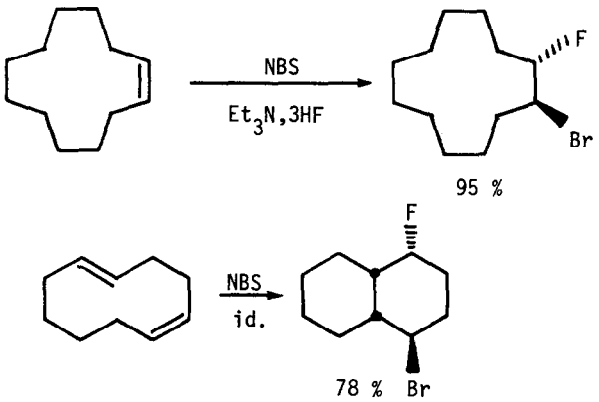
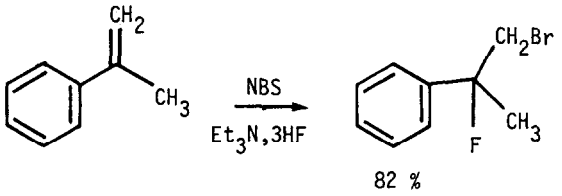
Halofluorinations of unsaturated hydrocarbons allow the introduction of the fluoride ion under much milder conditions than direct hydrofluorination itself. In addition the products are of important interest as intermediates for the synthesis of a large variety of substituted fluoroorganic compounds.

The combination N-halosuccinimide/$Et_3N,3HF$ is presented as a very convenient and effective reagent for such reactions.

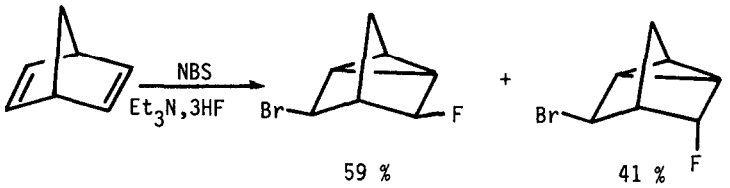
This reagent allows working at room temperature in usual glass apparatus, while up to now the highly hazardous reagents mostly used (HF in a solvent, or Olah's reagent in combination with a source for the electrophilic halogen) require polyethylene equipment and working at low temperatures.

The reaction is shown to be stereo- as well as regioselective ; the products are isolated in high yields.

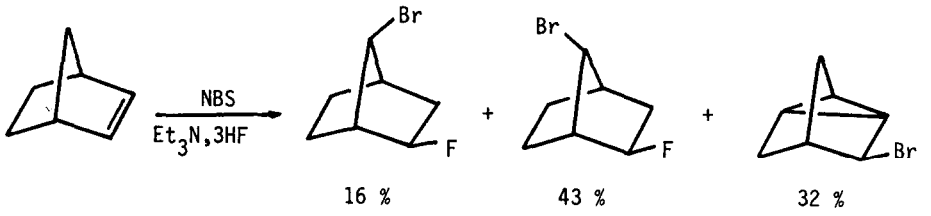




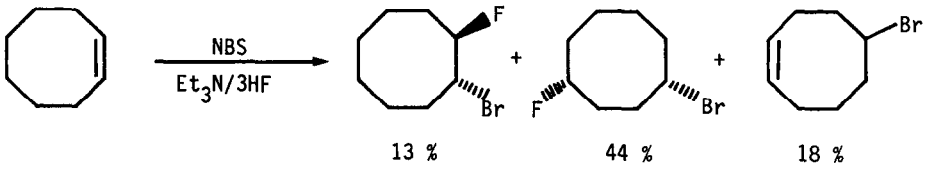
From norbornadien the epimeric products at C_5 are formed.



In rearrangeable systems Wagner-Meerwein rearrangement can be observed.



In medium ring systems transannular hydrid shift can take place.



† G. HAUFE, G. ALVERNHE and A. LAURENT, Tetrahedron Letters, **27** (1986) 4449.

G. ALVERNHE, G. HAUFE and A. LAURENT, Synthesis, in press.