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## DEVELOPMENT OF POLYMERIC ANALOGUES OF THE YAROVENKO REAGENT

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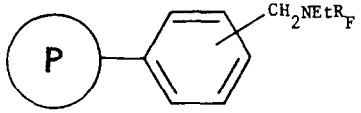
The Yarovenko reagent, $Et_2NCF_2CHFCl$, is used extensively to convert alcohols into monofluorides (ROH + $Et_2NCF_2CHFCl \longrightarrow$ RF + $Et_2NCOCHFCl$ + HF), the procedure being 'one of the simplest, most convenient,and safest fluorination techniques'.Despite this, $Et_2NCF_2CHFCl$ is not available commercially owing to its short shelf-life. We aim to circumnavigate this problem by developing an acceptable polymeric version of the reagent or of an analogous fluoroalkylamine (FAR). Work to-date on the synthesis and use of PFARS (I)-(III) will be described.




(I) $R_F = CF_2CHFCl$
(II) $R_F = CF_2CHFCF_3$
(III) $R_F = CF_2CF_3$

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## ADDITION OF HALOGENS TO 3-FLUORO-1-HEXYNE

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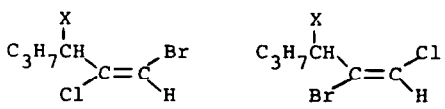
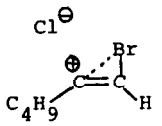
A few years ago we reported on the addition of bromine chloride (BrCl) to 1-hexene and 1-hexyne. 1-hexyne reacts with BrCl to give Markownikoff and anti-Markownikoff projects 1a and 2a in a 90:10 ratio respectively.




1a X = H
1b X = F




2a X = H
2b X = F

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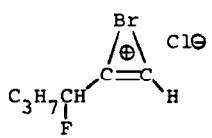


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Reaction of 3-fluoro-1-hexyne with bromine and chlorine give cis- and trans-1,2-dihalo-1-hexenes. Addition of BrCl to 3-fluoro-1-hexyne gives a major project which is tentatively assigned the structure 2b. Thus reaction of BrCl with 1-hexyne and 3-fluoro-1-hexyne give intermediates 3 and 4 respectively. A possible free radical process or radical competing pathway for the reactions of halogens with 3-fluoro-1-hexyne is also considered.