

COMPARATIVE REACTIONS BETWEEN AZIRIDINES AND F<sub>2</sub>, COF<sub>2</sub>, CF<sub>3</sub>OF

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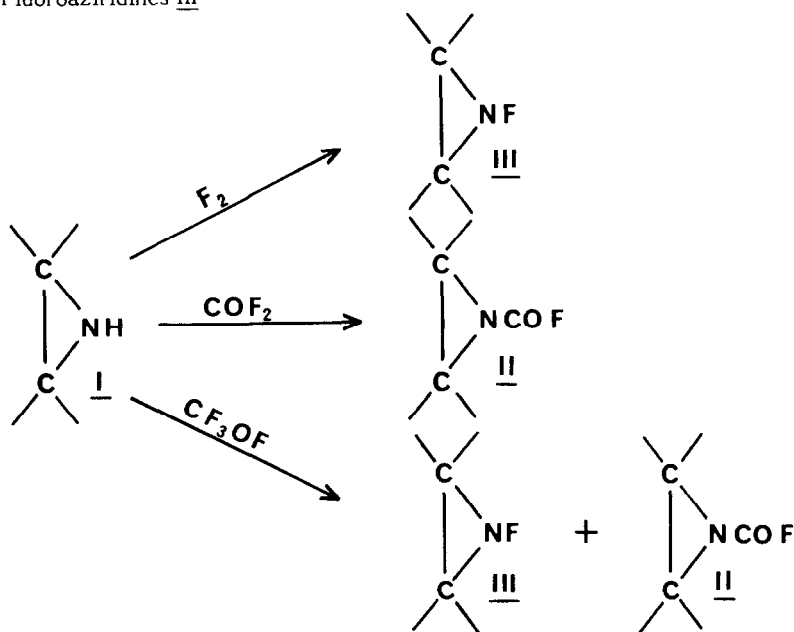
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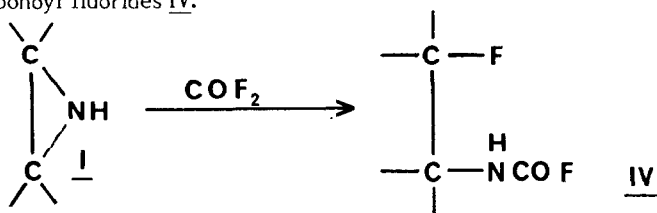
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In CFCI<sub>3</sub>, aziridines I react with F<sub>2</sub> (6 %/N<sub>2</sub>, - 20°C), COF<sub>2</sub> (20 %/N<sub>2</sub>, - 40°C) and CF<sub>3</sub>OF [I] (20 %/N<sub>2</sub>, - 40°C).

Substitution products are obtained : 1-(aziridine)carbonyl fluorides II and 1-Fluoroaziridines III



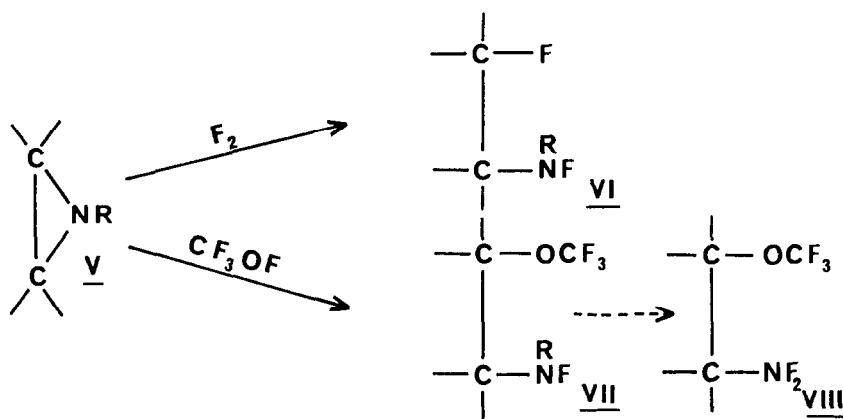
In (Et)<sub>2</sub>O, aziridines I react with COF<sub>2</sub> (20 %/N<sub>2</sub>, - 10°C) and we have the carbonyl fluorides IV.



Products IV can be thermally decomposed into β fluoro isocyanates.

In  $\text{CFCl}_3$ , N substituted aziridines V react with  $\text{F}_2$  (6%/N<sub>2</sub>, -20°C) and with  $\text{CF}_3\text{OF}$  [2] (20%/N<sub>2</sub>, -40°C). No reaction is observed with  $\text{COF}_2$  in our conditions (5% to 25%/N<sub>2</sub>, -80°C to +40°C).

Addition products are obtained : N Fluoro amines  $\beta$  fluorinated VI, N Fluoro and NN difluoro amines  $\beta$  trifluoro methoxylated VII and VIII.



with  $\text{R} = \text{SO}_2\text{O}$ ,  $\text{COONO}_2$ ,  $\text{Cl}$ .

1 M. Seguin, J.C. Adenis, C. Michaud, J.J. Basselier, J. Fluorine Chem. 15 (1980) 37.

2 M. Seguin, J.C. Adenis, C. Michaud, J.J. Basselier, J. Fluorine Chem. 15 (1980) 201.