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## CYCLOADDITION REACTIONS OF THE KETENE FROM TETRAFLUOROETHENE PENTAMER

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The ketene (1) is a remarkably stable aldoketene derived from T.F.E. pentamer by the reaction with strong base and then by dehydration of the resulting acid—

$$\begin{array}{c} C_2F_5 \\ CF_3 \\ C_2F_5 \end{array} \xrightarrow{CF_3} \begin{array}{c} CF_3 \\ C_2F_5 \end{array} \xrightarrow{C} -CH_2CO_2H \end{array} \xrightarrow{C_2F_5} \begin{array}{c} C_2F_5 \\ C_2F_5 \end{array} \xrightarrow{C} -CH=CD$$

The ketene is readily isolable and does not dimerise, although it reacts rapidly with a wide range of nucleophiles.

The paper will describe a range of cycloadddition reactions with C=C, C=O and C=N systems. The type of product obtained depends on the structure of the addend and reasons for this and a comparison with hydrocarbon analogues will be discussed.