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## PENTAFLUOROXYTELLURIUM SUBSTITUTED FLUOROCARBONS

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Pentafluoroxytellurium substituted fluorocarbons ( $\text{TeF}_5\text{OR}_f$ ), a previously unknown class of compounds, have been prepared by the reactions of either  $\text{TeF}_5\text{OCl}$  or  $\text{TeF}_5\text{OF}$  with fluoroolefins. The addition products are low volatility colorless fluids. Surprisingly, the hypofluorite reacts more controllably and in higher yield (70-85%) than the hypochlorite (20-30%), wherein by-product forming interactions predominate. Addition of  $\text{TeF}_5\text{OF}$  to the double bonds of unsymmetrical olefins results in isomeric products. Details of the syntheses and the characterization of these compounds will be presented. A comparison of the properties of the perfluorocyclopentene adducts  $\text{XF}_5\text{OC}_5\text{F}_9$  will be made for the series  $X = \text{S}, \text{Se}, \text{Te}$ .

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## SELENIUM-NITROGEN AND TELLURIUM-NITROGEN COMPOUNDS

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Te-N and Se-N compounds are notoriously unstable. However, starting with  $\text{H}_2\text{N}-\text{TeF}_5$  or  $(\text{CH}_3)_3\text{Si}-\text{NH}-\text{TeF}_5$  a variety of tellurium nitrogen compounds have been prepared, such as  $\text{F}_5\text{TeN}=\text{SF}_2$ ,  $\text{F}_5\text{Te}-\text{N}=\text{PF}_3$ ,  $\text{F}_5\text{Te}-\text{NCl}_2$  a.o. A crystal structure is given of  $\text{F}_5\text{Te}-\text{N}=\text{WCl}_4$ , and an electron diffraction structure of  $\text{F}_5\text{Te}-\text{N}=\text{C}=\text{O}$ . Whereas  $\text{F}_5\text{S}-\text{N}=\text{C}=\text{O}$  has a similar structure,  $\text{F}_5\text{Se}-\text{O}-\text{C}\equiv\text{N}$  appears as cyanate! The first selenium-nitrogen double bond systems have been prepared with  $\text{F}_5\text{Te}-\text{N}=\text{SeCl}_2$  and  $\text{F}_5\text{Te}-\text{N}=\text{SeF}_2$ .