

Platinum tetrafluoride is usually prepared by thermal decomposition of the 2:1 bromine trifluoride–platinum tetrafluoride adduct under vacuum at 180°C [4]. However, Bartlett et al. found that platinum tetrafluoride obtained in this manner is always contaminated with bromine which, however, could be completely removed as bromine pentafluoride by fluorinating with diluted fluorine at 250°C [5]. We have now found that thermal decomposition of platinum hexafluoride is a useful method for the preparation of pure platinum tetrafluoride.

In a typical experiment, platinum hexafluoride and lower platinum fluorides which were obtained as described above, were thermostated at 200°C for several hours. Then elemental fluorine was pumped away, and thermal decomposition was repeated two or three times. The end product was platinum tetrafluoride as shown by mass balance, X-ray powder diffraction photographs, magnetic susceptibility measurements, and infrared spectroscopy. The purity of the sample was checked by chemical analysis (Calcd. for PtF₄: F = 28.04; Found: F = 28.1 %).

The advantages of our new syntheses are that they are simple and fast, with reasonably high yields. The products obtained are pure.

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Erratum

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The paper on Polycyclic fluoro-aromatic compounds by J. Burdon, I. W. Parsons and H. S. Gill, has unfortunately been given the wrong subtitle:

Part III. Syntheses..... and derived
should read:

Part VIII. The preparation of perfluorochrysene and some related compounds.