

P-8

## IF<sub>5</sub> – AN EFFICIENT OXIDATIVE FLUORINATION AGENT FOR GROUP(V) ORGANYL COMPOUNDS

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The oxidative fluorination of triaryl-element-compounds of P, As, Sb and Bi by IF<sub>5</sub> in CH<sub>2</sub>Cl<sub>2</sub> or CH<sub>3</sub>CN has been investigated with the result of a simple one-pot-reaction with nearly quantitative yield of the wanted triaryl-element-difluorides.

Attack of the aromatic ring or the C-H-bond by IF<sub>5</sub> was never observed. Strong electron-withdrawing substituents of the aryl-group are limiting this reaction. Attempts to prepare IF<sub>3</sub> by low-temperature-reduction of IF<sub>5</sub> with triarylphosphine failed. The only demonstrable reduction product of IF<sub>5</sub> is iodine.

The results of the reactions of triaryl-element-compounds with IF<sub>5</sub> are compared with those of the corresponding element-trihalides with IF<sub>5</sub>. Thus substitution of chlorine by aryl-groups in element(III)-chlorides makes oxidation to element(V)-fluorides more easy.

Carbon-element-bondfission as slow side-reaction is observed when aryl-element-tetrafluorides are prepared. This bondfission is caused by 'IF' formed from iodine and IF<sub>5</sub>.

Triaryl-element(V)-oxides behave different against IF<sub>5</sub>; e.g. triphenylphosphineoxide forms a 2 : 1 adduct with IF<sub>5</sub> whereas triphenylarsineoxide shows oxide-fluoride-exchange.