

ABSTRACT OF DISCLOSURE

Disclosed is a process for producing a fluoride gas that can produces fluoride gases such as BF_3 , SiF_4 , GeF_4 , PF_5 or AsF_5 at a reduced production cost in a simple manner. The process is characterized in that a compound containing an atom, which, together with a fluorine atom, can form a polyatomic ion, is added to a hydrogen fluoride solution to produce the polyatomic ion in a hydrogen fluoride solution and to evolve a fluoride gas comprising the fluorine atom and the atom that, together with the fluorine atom, can form a polyatomic ion.