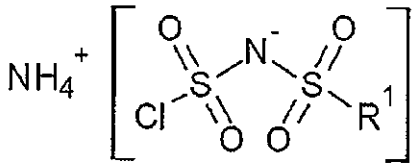
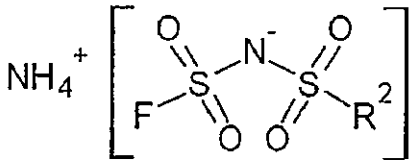
# CLAIMS

1. A process for producing a fluorosulfonylimide ammonium salt represented by formula [II], the process comprising reacting a compound represented by formula [I] and hydrogen fluoride:



[I]

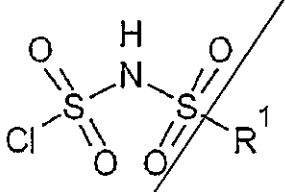
wherein $R^1$ represents a fluorine atom, a chlorine atom, or a fluoroalkyl group having 1 to 6 carbon atoms,



[II]

wherein $R^2$ represents a fluorine atom or a fluoroalkyl group having 1 to 6 carbon atoms.

2. The process according to claim 1, further comprising reacting a compound represented by formula [III] with ammonia or a salt thereof to obtain the compound represented by formula [I]:

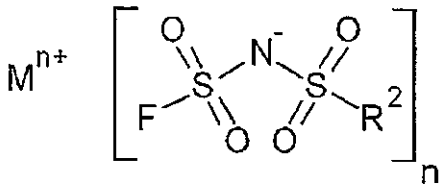


[III]

wherein $R^1$ is as defined in formula [I].

3. A process for producing a fluorosulfonylimide salt represented by formula [IV], the process comprising reacting a fluorosulfonylimide ammonium salt represented by

formula [II] obtained by a process according to claim 1 or 2 with at least one compound selected from the group consisting of alkali metal compounds, onium compounds and organic amine compounds:



[IV]

wherein $M^{n+}$ represents an alkali metal cation or an onium cation (excluding $NH_4^+$), n corresponds with a valency of the alkali metal cation or onium cation (excluding $NH_4^+$) and is an integer of 1 to 3, and $R^2$ is as defined in formula [II].

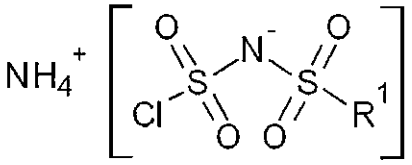
4. The process disclosed according to claim 3, wherein the fluorosulfonylimide ammonium salt represented by formula [II] is reacted with an alkali metal hydroxide or a tertiary amine compound, and $M^{n+}$ in formula [IV] represents an alkali metal cation or a tertiary ammonium cation.

CLAIMS

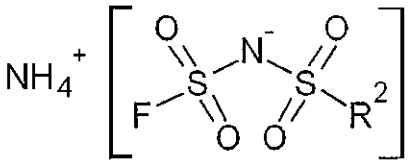
1. A process for producing a fluorosulfonylimide salt represented by formula [IV], the process comprising:

reacting a compound represented by formula [I] and hydrogen fluoride to obtain a fluorosulfonylimide ammonium salt represented by formula [II]; and

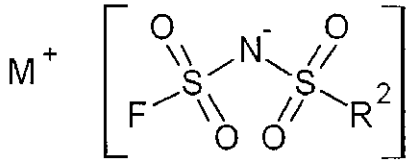
reacting the fluorosulfonylimide ammonium salt represented by formula [II] with an alkali metal hydroxide under reduced pressure to remove ammonia as a by-product:



[I]



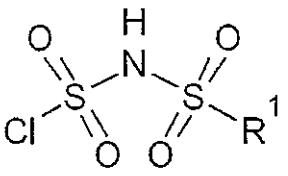
[II]



[IV]

wherein $R^1$ represents a fluorine atom, a chlorine atom, or a fluoroalkyl group having 1 to 6 carbon atoms, $R^2$ represents a fluorine atom or a fluoroalkyl group having 1 to 6 carbon atoms, and $M^+$ represents an alkali metal cation.

2. The process according to Claim 1, further comprising: reacting a compound represented by formula [III] with ammonia or a salt thereof to obtain the compound represented by formula [I]:



〔III〕

wherein $R^1$ is as defined in Claim 1.