

Title (en)  
METHOD FOR PRODUCING AMMONIUM HEXAFLUOROPHOSPHATES

Title (de)  
VERFAHREN ZUR HERSTELLUNG VON AMMONIUMHEXAFLUOROPHOSPHATEN

Title (fr)  
PROCÉDÉ DE PRODUCTION DE D'HEXAFLUOROPHOSPHATES D'AMMONIUM

Publication  
**EP 2114882 A1 20091111 (DE)**

Application  
**EP 08708305 A 20080128**

Priority  
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• EP 07101364 A 20070129  
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Abstract (en)  
[origin: EP1950196A1] Preparing ammonium hexafluorophosphate compound (I) comprises: reacting quaternary ammonium compound (a) with a phosphate salt compound (b) in the presence of solvent to give (I), which is not a tiotropium hexafluorophosphate compound (II). Preparing ammonium hexafluorophosphate compound of formula  $(R_4-N^+>(R_3>)-R_1>R_2>PF_6^->)$  (I) comprises: reacting quaternary ammonium compound of formula  $(R_4-N^+>(R_3>)-R_1>R_2>X^->)$  (a) with a phosphate salt compound of formula  $(Kat^+>PF_6^->)$  (b) in the presence of solvent to give (I), which is not a tiotropium hexafluorophosphate compound of formula (II).  $R_1>$ ,  $R_2>$ hydrocarbon, 1-10C-alkyl, 2-10C-alkenyl, 2-10C-alkinyl, 3-8C-cycloalkyl, 4-8C-cycloalkenyl, 6-8C-cycloalkinyl, 6-10C-aryl-1-6C-alkyl, 6-10C-aryl-2-6C-alkenyl, 6-10C-aryl-2-6C-alkinyl, 6-10C-aryl or heterocyclyl (optionally substituted); either  $R_3>$ ,  $R_4>R_1>$ ; or  $NR_3>R_4>$ mono-, di- or tricyclic, 4-10C optionally saturated carbocycle (optionally substituted by O or S); X : anion; and  $Kat^+>$ cation of  $Na^+>$ ,  $K^+>$  (both preferred),  $Li^+>$ ,  $Mg^{2+}>$  or  $Ca^{2+}>$ . An independent claim is included for the ammonium hexafluorophosphate compound (I), which is not a tiotropium hexafluorophosphate compound (II). [Image].

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