Title (en)

METHOD FOR THE PRODUCTION OF TRICYANOMETHANIDES OF ORGANIC CATIONS

Title (de)

VERFAHREN ZUR HERSTELLUNG VON TRICYANOMETHANIDEN ORGANISCHER KATIONEN

Title (fr)

PROCEDE DE PRODUCTION DE TRICYANOMETHANIDES DE CATIONS ORGANIQUES

Publication

EP 1786761 A1 20070523 (DE)

Application

EP 05772429 A 20050820

Priority

- EP 2005009026 W 20050820
- EP 04020116 A 20040825
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Abstract (en)

[origin: EP1634867A1] Production of nitrogen, phosphorus, sulfur or oxygen-containing organic cation tricyanomethanide salt ionic liquids (I) involves mixing malonic acid dinitrile (II) and a cyanogen compound (III) in presence of base, optionally in a solvent; and adding an organic cation salt (IV), such that the anion of (IV) is exchanged in an aqueous phase with the tricyanomethanide anion formed in situ from (II) and (III). Production of organic cation tricyanomethanide salt ionic liquids of formula Q +>.C(CN) 3 -> (I) involves: (1) mixing malonic acid dinitrile (II) and a cyano compound of formula RCN (III) in presence of base, optionally in a solvent; and (2) adding an organic cation salt of formula (Q +>) n.X n-> (IV), such that the anion X n-> is exchanged in an aqueous phase with the tricyanomethanide anion formed in situ from (II) and (III). Q +>organic cation of formula W +>R 1>R 2>R 3>R 4>, N +>R 5>R 6>R 7>, S +>R 9>R 10>R 11> or Z +>R 11>R 12>; W : N or P; R 1> - R 3>alkyl; R 4>alkyl, cycloalkyl or aryl; or WR 1>R 2>5-7 membered ring (in which case R 3>, R 4> = alkyl); or WR 1>R 2> and W 3>R 4>5-7 membered rings; NR 5>R 6>ring; R 7>alkyl, cycloalkyl or aryl; R 8>, R 9>alkyl or together complete a ring; R 10>alkyl, cycloalkyl or aryl; Z : O or S; R 11>, R 12>together complete a ring; R : Cl, Br, I or CN; n : 1 or 2; X n->halide, pseudohalide, sulfate or organic acid anion; all rings formed by R 1> - R 12> optionally (i) are substituted by one or more of alkyl, alkoxy, cycloalkyl, aryl, halo or CN, (ii) contain 1 or 2 additional O, S or N heteroatoms and/or (iii) are fused to an aromatic or non-aromatic 5-7 membered ring; all alkyl moieties have 1-20C, cycloalkyl moieties 3-10C and aryl moieties 6-10C; all alkyl, cycloalkyl or aryl moieties are optionally substituted by one or more halo.

IPC 8 full level

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CPC (source: EP KR)

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