

Title (en)

Use of colourless phosphonium compounds, highly substituted by fluor, in electrophotographic recording processes.

Title (de)

Verwendung farbloser hochgradig fluorsubstituierter Phosphoniumverbindungen als Ladungssteuermittel für elektrophotographische Aufzeichnungsverfahren.

Title (fr)

Utilisation de composés incolores de phosphonium ayant un degré de substitution au fluor élevé, dans des procédés d'enregistrement électrophotographique.

Publication

**EP 0393503 B1 19940112 (DE)**

Application

**EP 90106998 A 19900411**

Priority

DE 3912396 A 19890415

Abstract (en)

[origin: EP0393503A1] Highly fluorine-substituted phosphonium compounds of the formula (I) <IMAGE> in which R1 to R4 are hydrogen atoms or organic radicals, at least one of the radicals R1 to R4 being a fluorine-substituted, unsaturated and/or saturated alkyl radical which has 1 to 30 C atoms and 3 to 50 F atoms and can contain further substituents, or a fluorine-substituted aryl radical or an aralkyl radical fluorine-substituted on the aromatic nucleus, it being possible for the aryl radical and aralkyl radical to be additionally substituted on the aromatic nucleus, and, in the case of an aralkyl radical, the alkyl bridge between the phosphorus atom and the aromatic ring having 1 to 30 C atoms, and it being possible for at most 3 of the radicals R1 to R4 to be, independently of one another, hydrogen atoms, unsaturated or saturated, optionally substituted alkyl radicals having 1 to 30 C atoms, aryl or aralkyl radicals which can be substituted on the aromatic nucleus, and X<-> being an anion, it being possible for the radicals R1 to R4 to contain a COO<-> or SO3<-> group as a substituent, in which case X<-> becomes irrelevant, are used individually or in combination as colourless charge control agents having a positive or negative control action in toners and developers for electrophotographic recording processes.

IPC 1-7

**G03G 9/097**

IPC 8 full level

**C09D 5/03** (2006.01); **C09D 5/46** (2006.01); **G03G 9/097** (2006.01)

CPC (source: EP US)

**G03G 9/09741** (2013.01 - EP US); **G03G 9/09766** (2013.01 - EP US)

Citation (examination)

PATENT ABSTRACTS OF JAPAN, Band 10, Nr. 358 (P-522)[2415], 2. Dezember 1986; & JP-A-61 156 142

Cited by

US5378571A; EP1077394A1; EP0718707A1; WO9206414A1

Designated contracting state (EPC)

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**EP 90106998 A 19900411**; AT 90106998 T 19900411; DE 3912396 A 19890415; DE 59004182 T 19900411; JP 9661090 A 19900413; US 50885290 A 19900412