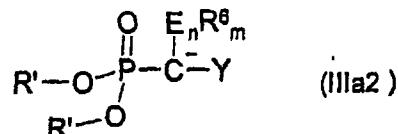


ORIGINAL

ABSTRACT

“PHOSPORUS COMPOUNDS OF FORMULA IIIa2”

Phosphorus compounds of formula IIIa2



in which

R' = is equal or different independently means C_{1-20} alkyl, branched or straight or cyclic, or C_{8-20} aryl

$\text{E}_n\text{R}^{\text{6}}_m$ = in which

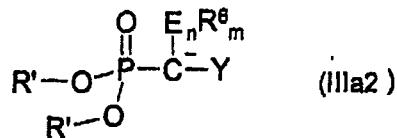
If $n = m = 1$ then $\text{E} = \text{S}$ and $\text{R}^{\text{6}} = \text{C}_{1-20}$ -alkyl (branched or straight chain or cyclic); C_{8-20} -aryl - which each of those may be substituted with one or more of the following groups: F, Cl, Br, I, C_{1-20} -alkoxy, C_{8-20} -aryloxy, amino; F; Cl; Br; I;

$\text{Y} = -\text{CN}; -\text{C}(\text{O})\text{NH}_2; -\text{C}(\text{O})\text{OR}^7$ with $\text{R}^7 = \text{C}_{1-20}$ -alkyl (branched or straight chain or cyclic);

C_{8-20} -aryl - which each of those may be substituted with one or more of the following groups: F, Cl, Br, I, C_{1-20} -alkoxy, C_{8-20} -aryloxy, amino; F; Cl; Br; I.

WE CLAIM:

1. Phosphorus compounds of formula IIIa2



in which

R' = is equal or different independently means C_{1-20} alkyl, branched or straight or cyclic, or C_{6-20} aryl

$\text{E}_n\text{R}^{\text{g}}_m$ = in which

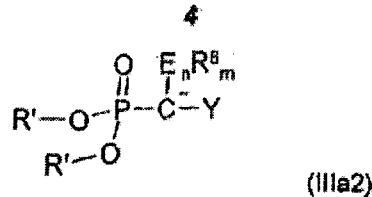
If $n = m = 1$ then $\text{E} = \text{S}$ and $\text{R}^{\text{g}} = \text{C}_{1-20}$ -alkyl (branched or straight chain or cyclic); C_{6-20} -aryl - which each of those may be substituted with one or more of the following groups: F, Cl, Br, I, C_{1-20} -alkoxy, C_{6-20} -aryloxy, amino; F; Cl; Br; I;

$\text{Y} = -\text{CN}; -\text{C}(\text{O})\text{NH}_2; -\text{C}(\text{O})\text{OR}^7$ with $\text{R}^7 = \text{C}_{1-20}$ -alkyl (branched or straight chain or cyclic);

C_{6-20} -aryl - which each of those may be substituted with one or more of the following groups: F, Cl, Br, I, C_{1-20} -alkoxy, C_{6-20} -aryloxy, amino; F; Cl; Br; I.

Dated this the 23rd day of March, 2012

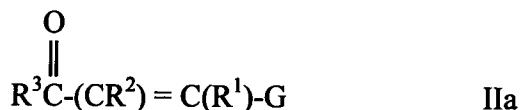
[JITESH KUMAR]
OF REMFRY & SAGAR
ATTORNEYS FOR THE APPLICANTS



5 In which E = S or S-S and n and m = 1, (P) is $P(Ar)_3$ (for IIIa) R' as defined above and Y = -CN, -C(O)OR⁷ (R⁷ as defined above), R⁸ is defined as R¹, except H. Preferably R⁸ is methyl, ethyl, propyl, isopropyl, benzyl or phenyl.

The abovementioned reactions can be conducted in the presence or in the absence of the below defined α - β - unsaturated carbonyl compound of formula (IIa).

10 2.) The Wittig Reagent (IIia1) or Horner Reagent (IIia2) is then reacted, as generally known in an organic solvent, such as alcohols (preferably for Horner Reagent), halogenated hydrocarbons or polar aprotic solvents (preferably for Wittig Reagents) like THF, DMF or NMP usually at a temperature in the range of from 15 -15 °C, to 120 °C, preferably 0 °C to 70 °C, with the α - β - unsaturated carbonyl compound of formula (IIa).



20 whereln

R^1, R^2 independently the same or different are H; C_{1-20} -alkyl (branched or straight chain or cyclic); C_{6-20} -aryl - which each of those may be substituted with one or more of the following groups: F, Cl, Br, I, C_{1-20} -alkoxy, C_{6-20} -aryloxy, non substituted or preferably substituted amino -; F, Cl, Br, I, preferably R^1, R^2 are H, methyl. In particular H.

25 substituent - F, Cl, Br, I, preferably R¹, R² are H, methyl. In particular tri-

30 R³ is the same as R¹ or R² (except H and halogens) and additionally R³ shall mean -CN, -NO₂. Preferably R³ is an electron withdrawing group (as defined above) more preferably a fully fluorinated C₁₋₄ alkyl (branched or straight) or fully fluorinated C₆₋₁₀-aryl, such as trifluoromethyl, pentafluoroethyl, heptafluoropropyl heptafluoroisopropyl, pentafluorophenyl, most preferably trifluoromethyl.

G = -NH₂

35 A very suitable compound IIa is $\text{F}_3\text{C}-\text{C}(\text{O})-\text{CH}=\text{CH}-\text{NH}-$

The molar ratio of (IIIa1) or (IIIa2) to (IIa) is in general 1 : 1 to 1 : 3, preferably 1 : 1.2.