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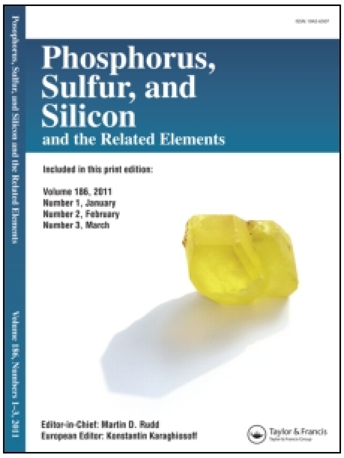

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Transition Metal Complexes of (Aminomethyl) Pyridyl-Substituted Cyclotfuphosphazenes; Thermal Depolymerization of Phenoxy(Aminomethyl)-Pyridyl Phosphazene Copolymers

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TRANSITION METAL COMPLEXES OF (AMINOMETHYL)PYRIDYL-SUBSTITUTED CYCLOTRIPHOSPHAZENES;

THERMAL DEPOLYMERIZATION OF PHENOXY(AMINOMETHYL)-PYRIDYL PHOSPHAZENE COPOLYMERS

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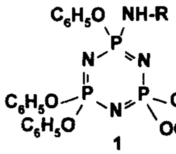
Different types of phosphazenes with (aminoalkyl)pyridyl side groups were synthesized. Mono- and cis-non-geminal disubstituted species **1** and **2** are formed when the remaining chlorine atoms of penta- or tetraphenoxy-substituted cyclotriphosphazenes are replaced by the pyridyl groups. Geminal di- and hexasubstituted compounds **3** and **4** can be obtained from reactions of hexachlorocyclotriphosphazene with the pyridine derivative.



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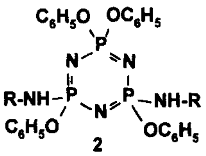

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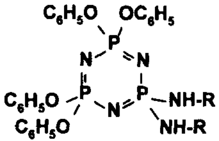

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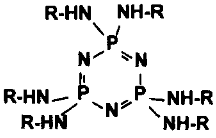

4

R = alkylpyridine

Metal complexes of the general formula $CuL_2(NO_3)_2$, $CoL(NO_3)$, and $PtLCl_2$ were prepared using 2-(aminomethyl)pyridylpentaphenoxycyclotriphosphazene **1** as a multifunctional N-donor ligand. Copper and platinum are bonded to the ligand via the nitrogen of the pyridine and the amine group of the substituent whereas the cobalt is attached to the pyridine and one of the phosphazene N-atoms.

Thermal studies of homo- and mixed-substituent copolymers with 3-(aminomethyl)-pyridyl and phenoxy groups on the phosphazene chain $[NP(NHCH_2pyr)_x(OC_6H_5)_y]_n$ show that depolymerization occurs above 250° C to yield six- and eightmembered cyclic species when 50% or more of the substituents are phenoxy groups. Polymers with higher amounts of pyridyl substituents form an insoluble residue when heated.

REFERENCES:

U. Diefenbach, H. R. Allcock, Inorg. Chem., 33, 4562, 1994.
U. Diefenbach, M. Kretschmann, Ö. Çavdarci, Phosphorus Sulfur, 93/94, 415, 1994.