"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A., GAVRILOVA, A.I., KOPYLOV, A.M.

Ethyleneamidophosphonates.

[illegible]

[illegible]

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A., MEYMYSHEVA, A.A., BOTSEV, O.V., BARICH, A.G..

Reactions of sulfene chlorides and N-chloromines with phosphorus trichloride dichlorophosphines and red phosphorus.

Khimiya i Primeneniye Fosfororganicheskikh Soyedineniy (Chemistry and application of organophosphorus compounds) A. YE. ARBUZOV, Ed. Publ. by Kazan Affil. Acad. Sci. USSR, Moscow 1962, 632 pp.

Collection of complete papers presented at the 1959 Kazan Conference on Chemistry of Organophosphorus Compounds.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A., BLIZNYUK, N.K., MANSUROV, [illegible].YU.

"Reaction of acid phosphited, thiophosphites, phosphonited and dialkylphosphine oxides with disulfides."

[illegible]

[illegible]

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

S/[illegible]
A154/A126

AUTHORS: Petrov, K. A., Nifant'yev, E. Ye., [illegible]

TITLE: A method of obtaining dichloranhydride [illegible]

PERIODICAL: Byulleten' izobreteniy, [illegible]

TEXT: Class [illegible], [illegible]. No. 143[illegible] ([illegible] of April [illegible]) [illegible] method of obtaining dichloranhydride of phenylphosphinic acid by oxidation of phenyl dichlorophosphine, distinguished by the fact that, in order to simplify the process, sulfuryl chloride is used as an oxidizer.

Card 1/1

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

TIMOSHEV, V.G.; ~~PETROV, K.A.~~; RODIONOV, A.V.; BALANDINA, V.V.; VOLKOVA, A.A.; YEL'KINA, A.V.; NAGNIBEDA, Z.I.

Importance of the structure and physical state of the molecules of extractive reagents. Ekstr.;teor.,prim., app. no.1:88-103 '62. (MIRA 15:11)
(Extraction (Chemistry))

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

S/030/62/000/001/002/012
E111/E192

AUTHORS: Tikosnev, V.I., Petrov, K.A., Rodionov, A.V., Galandina, V.V., Volkova, A.A., Yel'kina, A.V., and Sagnibeda, Z.I.

TITLE: Importance of the structure and physical state of extraction-solvent molecules

SOURCE: Ekstraktsiya, teoriya, primeneniye, apparatura. Ed. by A.I. Zefirov and N.N. Senyavin. Moscow, Gosatomizdat, 1962. 88-103.

TEXT: Taking the criterion of extraction ability as the distribution coefficient, and the ratio β (the number of hydrogen to the number of carbon atoms in the solvent), the authors study the distribution of uranyl, plutonium (IV), zirconium and niobium nitrates. The feed consisted of 1 or 2 N aq. nitric acid solution. Extracting with orthoesters and phosphates the extractive ability falls with decreasing β values - steric hindrance playing an important part. With phosphonates the opposite relation holds - the water solubility of the lower homologues and their polymerization being important factors.

Card 1/2

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

Importance of the structure and ... S/030/62/000/004/002/[illegible]
E111/E192

The extractive ability of phosphorates increases at the same time as the alkyl radicals become less electrophilic and the solvents less soluble; however, when the radicals become comparatively large, steric hindrances become decisive and extractive ability falls sharply in spite of reduced solubility. The same holds for phosphine oxides and amines. Further work to generalize these relations is contemplated.
There are 15 figures.

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

AUTHOR: Petrov, K. A., Nifant'yev, [illegible] Ye.

TITLE: Phosphorylated polysaccharides. I. Phosphorylation [illegible] cellulose by transesterification [illegible] valent phosphorus

PERIODICAL: Vysokomolekulyarnyye [illegible] 242 - 245

TEXT: Polysaccharides are phosphorylated by transesterification [illegible] of acids of trivalent phosphorus, neutral and acid phosphites [illegible] methyl phosphites. After [illegible] heating of diethyl phosphite [illegible] anhydrous cellulose to 160 - 165°C in the presence of metal [illegible] P content in the end product reaches only [illegible] %, and under [illegible] 175 - 185°C, 6.4%. The phosphorylated polysaccharide dissolves [illegible] diethyl phosphite to a gelatinous substance, and is separated [illegible] water addition. The optimum temperature of reaction with triphenyl [illegible] is 1[illegible]°C (P content 5 - 6%). In the reaction of cellulose with monomethyl ester (I) or monoethyl ester (II) of methyl phosphinous acid [illegible] and Na catalyst, the P content in the end product is [illegible] %. [illegible] Card 1/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

Phosphorylated [illegible]

three ester alkoxyls may react with the [illegible] of inulin are also phosphorylated [illegible] P; γ > [illegible], the method is of universal importance. [illegible] like cellulose, are relatively [illegible] γ [illegible] does not burn, are soluble in [illegible] oxide and warm H_3PO_4, partly swelling in [illegible]

[illegible] prolonged treatment with [illegible]

phosphorus. After prolonged standing oxidation [illegible] unknown derivatives occurs. There are [illegible] Soviet. The four most recent [illegible] read as follows: [illegible] Basic Industry [illegible] [illegible] 1959

[illegible] February [illegible]

Card

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

15 8150
11.2700
11 2238

33382
S/190/62/004/002/013/021
B110/B101

AUTHORS: Petrov, K. A., Nifant'yev, E. Ye., Khorkhoyanu, L. V., Merkulova, M. I., Voblikov, V. F.

TITLE: Phosphorus-containing polymers. III. Application of the Arbuzov reaction for polymerizing ethylene alkyl phosphites

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 2, 1962, 246-249

TEXT: The method by A. Ye. Arbuzov et al. (Izv. AN SSSR, Otd. khim. n., 1950, 357) can be used for producing polyphosphonates from cyclic phosphinites. In the present study, polyphosphonates were similarly synthesized on the basis of ethylene alkyl phosphites (I). Alcohol was added dropwise to 126.5 g of ethylene chlorophosphite, 300 ml of ether, and 152 g of triethylamine; the mixture was left standing, filtered off, heated for 30 min, and (I) was obtained by double distillation. Cyclic phosphites contain an alkoxy group besides the cyclic ester group. Polyphosphonates are formed under catalytic action of methyl iodide on ethylene alkyl phosphite during 3 hr heating at 130°C in Ar atmosphere:

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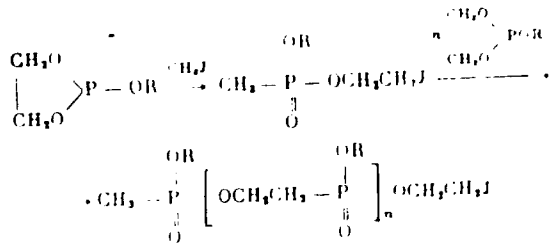
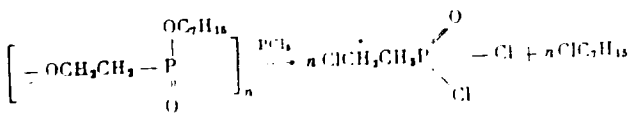
"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

S/190/62/004/002/015/[illegible]
B110/B101

Phosphorus-containing polymers...



The structure of polyethylene heptyl phosphite was proven as follows:



The degree of polymerization depends on the CH_3I amount, the reaction time and temperature. Optimum was: (1) small CH_3I amount; (2) [illegible] hr, the reaction time depending on the molecular weight of the monomer,

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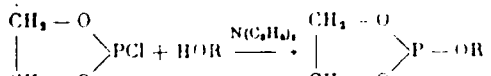
APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

the reaction temperature, and the CH_3I concentration; (3) ~ 160 - 200°C, depending on the molecular weight (hexyl and isooctyl compounds: 160 - 170°C; nonyl and decyl compounds: 200°C). The polymers are viscous, colorless, and odorless liquids soluble in organics. Some of them are highly thermostable (polydecyl ethylene phosphite endures ≤ 200°C for 20 - 30 hr). Utilization as plasticizer or admixture to lubricants is possible.



was also synthesized. There are 2 tables and 5 references: 4 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: A. K. Sherrill, J. Amer. Chem. Soc., 52, 1985, 1930.

SUBMITTED: February 9, 1961

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

S/079/62/032/002/005/011
D227/D303

AUTHORS Petrov, K.A., Parshina, V.A. and Luzanova, M.B.

TITLE A new method of synthesizing tertiary aliphatic, aliphatic-aromatic and methylol phosphines

PERIODICAL Zhurnal obshchey khimii, v. 32, no. 2, 1962, 553-556

TEXT Synthesis of methylolphosphines and phosphonium chlorides with alkyl- and arylalkyl radicals jointed directly to phosphorus, and also tertiary aliphatic and aliphatic-aromatic phosphines, is decribed. The starting material for the synthesis was trimethylol phosphine which was obtained from triethylamine and tetramethylol phosphonium chloride. By the action of alkyl halides and benzyl chloride on trimethylol phosphine alkyl and benzyl trimethylol phosphonium halides were produced which on removal of one methylol group, converted into the corresponding dimethylol phosphines. By repeating the reactions the authors were able to obtain monomethylol-phosphines and trialkyl (tribenzyl) phosphines. Trimethylol phosphine was prepared by stirring tetramethylol phosphonium chloride

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

and dry ethylamine at room temperature in nitrogen, followed by heating to 60°C for 2 hours. Propyl trimethylol phosphonium bromide was prepared by reacting trimethylol phosphine with propyl bromide at 60°C in nitrogen. Propyl dimethylol phosphine and dipropyl dimethylol phosphonium bromide, also dipropyl methylol phosphine, tripropyl methylol phosphonium bromide and tripropyl phosphine were prepared by analogous reactions. In the aromatic series benzyl trimethylol phosphonium chloride, benzyl dimethylol phosphine, dibenzyl dimethylol phosphonium chloride, dibenzyl methylol phosphine, tribenzyl methylol phosphonium chloride and tribenzyl phosphine were similarly prepared from trimethylol phosphine and benzyl chloride. The method of synthesizing tertiary phosphines is based on alkylation of methylol phosphines and dealkylation of methylol phosphonium halides. Due to its general character it may, therefore, be used for producing various organophosphorus compounds with different functional groups. There are 19 references: 6 Soviet-bloc and 13 non-Soviet-bloc. The 4 most recent references to the English language publications read as follows: W.A. Reeves, F. Flynn and J.D. Guthrie, J.Am.Chem.Soc., 77, 3923 (1955); S.A. Buckler, J.Am.Chem.Soc., 82, 4215 (1960); M. Reuter and I. Orthner

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

S/079/62/032/002/005/011
D227/D303

A new method of ...

Ch.A., 54, 14124 i (1960); Sh.A. Buckler and N.E. Dov, Ch.A. 54, 15366 (1960).

SUBMITTED January 25, 1961

Card 3/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; GAVRILOVA, A.I.; KOROTKOVA, V.P.

Allylamides and ethyleneimides of phosphoric, phosphinic, and phosphorous acids. Zhur.ob.khim. 32 no.3:915-920 Mr '62. (MIRA 15:3)

(Phosphorus acids)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; YEVDAKOV, V.P.; BILEVICH, K.A.; RADCHENKO, V.P.; NIFANT'YEV, E.Ye.

Properties of phosphorus acid amides. Part 1: Reactions of amidophosphites with phenols. Zhur.ob.khim. 32 no.3:920-923 Mr '62. (MIRA 15:3)

(Phosphoramidous acid) (Phenols)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; NIFANT'YEV, E.Ye.; SHCHEGOLEV, A.A.

Glucose phosphinites. Zhur.ob.khim. 32 no.3:1006 Mr '62. (MIRA 15:3)

(Glucose) (Phosphinic acid)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; NIFANT'YEV, E.Ye.; GOL'TSOVA, N.G.; BELAVENTSEV, M.A.; KORNEYEV, S.M.

Esterification of phosphorous and phenylphosphinic acids. Zhur. obshchei khim. 32 no.4:1277-1279 Ap '62. (MIRA 15:4)
(Phosphorous acid) (Phosphinic acid) (Esterification)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; YEVDAKOV, V.P.; BILEVICH, K.A.; KOSAREV, Yu.S.

Properties of phosphorus acid amides. Part 2: Phenolysis, alcoholysis, and hydrolysis of amidophosphonites. Zhur.ob.khim. 32 no.6:1974-1977 Je '62. (MIRA 15:6)

(Phosphonamidous acid)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; GAVRILOVA, A.I.; KOROTKOVA, V.P.

Reactions of diethyleneimides of vinylphosphinic acid with dialkyl phosphites. Zhur.ob.khim. 32 no.6:1978-1981 Je '62. (MIRA 15:6)
(Phosphinic acid) (Phosphorous acid)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; YEVDAKOV, V.P.; MINTRAKH, L.I.; ROMODIN, V.P.

Properties of phosphorus acid amides. Part 3: New method of synthesizing thiophosphites and thiophosphonites. Zhur.ob.khim. 32 no.9:3062-3065 S '62. (MIRA 15:9)
(Phosphoramidothioic acid) (Phosphonamidothioic acid)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; YEVDAKOV, V.P.; BILEVICH, K.A.; CHERNYKH, V.I.

Properties of phosphorus acid amides. Part 4: Reaction of aminolysis and phenolysis of amidophosphites and amidophosphonites. Zhur.ob.khim. 32 no.9:3067-3069 S '62. (MIRA 15:9)
(Phosphoramidous acid) (Phosphonamidic acid)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; YEVDAKOV, V.P.; ABRAMTSEVA, G.I.; STRAUTMAN, A.K.

Properties of phosphorus acid amides. Part 5: Reaction of phosphoramidous and phosphonamidous acids with thiophenol and mercaptans. Zhur.ob.khim. 32 no.9:3070-3074 S '62. (1[illegible])

(Phosphoramidous acid) (Phosphonamidous acid)
(Thiols)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; NIFANT'YEV, E.Ye.; SHCHEGOLEV, A.A.; KHUDYNTSEV, N.A.

Synthesis and chemical properties of phosphinites of 1,4;3,6-dianhydrohexitol. Zhur.ob.khim. 32 no.9:3074-3080 S '62. (MIRA 15:9)

(Hexitol) (Phosphinic acid)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; GAVRILOVA, A.I.; NAM, V.M.; CHUCHKANOVA, V.P.

Phosphorus-containing analogs of choline and acetylcholine. Part 1: Phosphorocholines and acetylphosphorocholines. Zhur.ob.khim. 32 no.11:3711-3716 N '62. (MIRA 15:11)
(Choline)
(Phosphonium compounds)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

S/079/62/032/011/008/012
D204/D307

AUTHORS: Petrov, K.A., Nifant'yev, E.Ye., and [illegible], R.G.

TITLE: Peresterification of phosphites and phosphinites with substituted alcohols

PERIODICAL: Zhurnal obshchey khimii, v. 32, no. 11, 1962, 3716 - 3720

TEXT: The peresterification of the simpler esters of phosphorous acid and methyl-, phenyl-, and dipropylphosphinous acids was studied, using amino-ethanol, halo- and cyanhydrins, furfuryl and tetrahydrofurfuryl alcohols and with methyl cellosolve since the literature concerning such reactions is very scarce. In a typical experiment a mixture of the ethyl ester of the phosphorous (or phosphinous) acid and the substituted alcohol was heated, under an inert atmosphere, to 150-185°C, until the calculated quantity of EtOH distilled off. The reaction mixture was held at that temperature for a further 10-15 min, at 20-40 mm Hg, and was then distilled to give the corresponding phosphite or phosphinite of the substituted alcohol. Na or H_3PO_4 were used as catalysts. Furfuryl-di-

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

S/079/62/032/011/009/012
D204/D307

AUTHORS: Petrov, K.A., Nifant'yev, E.Ye., and Khorkhoyanu, L.V.

TITLE: Phosphorylation of glycerine and its derivatives by alcoholysis of the amides of dialkylphosphinous acids. A new method of directed replacement of a hydroxyl by a cyano group

PERIODICAL: Zhurnal obshchey khimii, v. 32, no. 11, 1962, 3720 - 3723

TEXT: Interactions of the diethylamide of dipropylphosphinous acid (I) with 1,2-iso-propylideneglycerine (II), 1,3-benzylideneglycerine (III) and glycerine were studied, in continuation of earlier work (ZhOKh, 31, 2889, 1961). I and II, and I and III interacted readily at 120-125°C to yield respectively the dipropylphosphinites of 1,2-iso-propylideneglycerine and 1,3-benzylideneglycerine (IV and V), in almost quantitative yields. Glycerine reacted analogously, at 135-140°C, in 60 % yield, to give the corresponding trisdipropylphosphinite (VI). $C_3H_7OP(OC_3H_7)_2$ reacted readily with bu-

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

43312
S/079/62/032/011/010/012
D204/D307

AUTHORS: Petrov, K.A., Nifant'yev, E.Ye., Gol'tsova, R.G., Shchegolev, A.A., and Bushmin, B.V.

TITLE: Synthesis and peresterification of diphenyl phosphite

PERIODICAL: Zhurnal obshchey khimii, v. 32, no. 11, 1962, 3723 - 3727

TEXT: The interactions of diphenyl phosphite with aliphatic alcohols were studied since the alcoholysis of diethyl and other simple phosphites (to higher phosphites) and phosphinites requires, in some cases, inconveniently high temperatures (this journal, p. 3716). Dialkyl phosphites $(RO)_2POH$, where R = C_4H_9, iso-C_5H_{11}, C_6H_{13}, C_8H_{17}, C_9H_{19}, $C_{10}H_{21}$, $ClCH_2CH_2$, and $C_2H_5OC(O)CH_2$, were prepared in 91-96 % yields by adding 2 moles ROH to 1 mole $(PhO)_2POH$ and heating for 3-8 hours at 100°C, in the presence or absence of catalyst (Na). The high reactivity of diphenyl phosphite as compared to those of simple dialkyl phosphites is ascribed to (1) the existence

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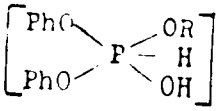
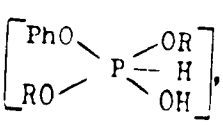
of transistory forms  and  , which preferentially eliminate PhOH rather than ROH, owing to the considerably higher electrophilic character of the PhO group, and (2) the fact that the tautomeric equilibrium favors the trivalent P form far more in diphenyl than, say, in diethyl phosphite. Similar reactions took place readily with substituted alcohols such as e.g. $(CH_3)_2NCH_2CH_2OH$. Diphenyl phosphite was obtained almost quantitatively by the equimolar interaction of diphenyl chlorophosphite with methanol (sealed tube, 100°C, 3 hrs.) and by the interaction of methyl dichlorophosphite with phenol (1:2) at 100°C for 1 hr. The latter method, which is generally convenient for the preparation of diaryl phosphites, was also used to make di-p- and di-m-cresyl phosphites, in ~100 % yields, by reacting CH_3OPCl_2 with para- and meta-cresols. There is 1 table.

SUBMITTED: December 14, 1961
Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K. A.; PARSHINA, V. A.; ORLOV, B. A.; TSYPINA, G. M.

Properties of phosphines. Part 5: Reactions of phosphines with chloroamines, sulfenyl chlorides, and amines. Zhur. ob. khim. 32 no.12:4017-4022 D '62. (MIRA 16:1)

(Phosphine) (Sulfenyl chlorides) (Amines)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; PARSHINA, V.A.; TSYPINA, G.M.

Phosphorus-containing polymers based on methylphosphines and methylolphosphine oxides. Plast. massy no.11:11-13 '63. (MIRA 16:12)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

ACCESSION NR: AT4033987 S/0000/63/000/000/0068/0072

AUTHOR: Petrov, K. A.; Nifant'yev, E. Ye.; Gol'tsova, R. G.; Korneyev, S. M.

TITLE: Polymers containing phosphorus. IX. Synthesis of acid polyalkylene phosphites, phosphates and thionphosphates

SOURCE: Geterotsepny*ye vy*sokomolekulyarny*ye soyedineniya (Heterochain macromolecular compounds); sbornik statey. Moscow, Izd-vo "Nauka," 1963, 68-72

TOPIC TAGS: polymer, phosphorus containing polymer, polyalkylene phosphite, polyalkylene phosphate, polyalkylene thionphosphate, linear acid polyphosphite, polyphosphite synthesis, spatially discreet glycol, polyphosphite oxidation, polyphosphite alkylation

ABSTRACT: Linear acid polyphosphites were synthesized by reesterification of diethyl phosphite with spatially discreet glycols, then converted to polyalkylene phosphates by NO_2 oxidation or to thionphosphates by reaction with S. Successful syntheses (procedure described) were obtained with pentandiol-1,5, hexandiol-1,6, diethylene glycol, triethylene glycol, diethanolamine, pentafluoropentandiol-1,5, 1,4-3,6-dianhydrosorbitol, and p-dihydroxymethylbenzene. A neutral polythionphosphite was obtained by alkylation of an ammonium salt of polyalkylenethionphosphoric acid. "We would like to thank S. A. Pavlova, associate at the INEOS AN SSSR,

Card 1/2

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

ASSOCIATION: AT4033987

for her help in determining the molecular weights." Orig. art. has: 2 graphs, 1 table and 3 chemical equations.

ASSOCIATION: none

SUBMITTED: 19Jun62 DATE ACQ: 30Apr64 ENCL: 00

SUB CODE: OC NO REF SOV: 012 OTHER: 003

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.; ATANASOV, Kr.; STANEV, St.; NEPRIENKOVA, L.

Ionophoretic application of nivalin. Pt.1. Trud nauch-farmatsevt inst 4:28-29 '63.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

LK

ACCESSION NR: AT4034002 S/0000/63/000/000/0170/0174

AUTHOR: Petrov, K. A.; Nifant'yev, E. Ye.; Gol'tsova, R. G.

TITLE: Phosphorus-containing polymers. X. Synthesis of polyphosphite-based polyphosphonates

SOURCE: Geterotsepny*ye vy*sokomolekulyarny*ye soyedineniya (Heterochain macromolecular compounds); sbornik statey. Moscow, Izd-vo "Nauka," 1963, 170-174

TOPIC TAGS: polymerization, phosphorus containing polymer, polyphosphite, polyphosphonate

ABSTRACT: As a further step in the authors' polymer studies data are given on the synthesis of polyalkylalkylenephosphonates, poly-α-hydroxyalkylalkylenephosphonates and poly-α-aminoalkylalkylenephosphonates by the Michaelis and Becker method using acid polyalkylenephosphites. The following polymers were prepared, identified and described: polybenzylhexamethylenephosphonate, poly-α hydroxybenzylhexamethylenephosphate, poly-α-dibutylaminobenzylhexamethylenephosphonate, polydiethylaminomethylhexamethylenephosphonate, poly-α-propylaminoisopropylhexamethylenephosphonate, poly-diethylaminomethyl-p-xylidenephosphonate, polybutylamino-bis-methylhexamethylenephosphonate, and a copolymer of

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ACCESSION NR: AT4034002

α-dibutylaminobenzylhexamethylenephosphonate and di-(hexamethylenephosphato) disulfide. The preparative procedure consists essentially of reacting the reagents for several hours at 90-135C; the yield varied from 48 to 98% for different individual products. Orig. art. has: 4 chemical equations.

ASSOCIATION: None

SUBMITTED: 13Nov62 DATE ACQ: 30Apr64 ENCL: 00

SUB CODE: OC NO REF SOV: 009 OTHER: 004

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

ACCESSION NR: AT4034009 S/0000/63/000/000/0240/0242

AUTHOR: Petrov, K. A.; Nifant'yev, E. Ye.; Ly*senko, T. N.

TITLE: Phosphorus-containing polymers. XI. Synthesis of hydrolytically stable polymers based on α-propyglucoside and N-phenylglucoside

SOURCE: Geterotsepny*ye yy*sokomolekulyarny*ye soyedineniya (Heterochain macromolecular compounds); sbornik statey. Moscow, Izd-vo "Nauka," 1963, 240-242

TOPIC TAGS: polymerization, polymer, phosphorus containing polymer, alpha propylglucoside, phenylglucoside, polyphosphite, polyphosphinite

ABSTRACT: In an extension of the authors' previous work on phosphorus-containing polymers, a number of polyphosphites and polyphosphinites were obtained by the alcoholysis of phosphoamides and reesterification of arylphosphites and arylphosphinites, using α-propylglucoside and N-phenylglucoside as the reagents. In the alcoholysis procedure, 1 mol of α-methyl, α-propyl or N-phenyl-glucoside and 2 or 2.5 mols of phosphoamide ($C_3H_7OP[N(C_2H_5)_2]_2$, $C_4H_9OP[N(C_2H_5)_2]_2$, $C_8H_{17}OP[N(C_2H_5)_2]_2$) were heated at 140-145C for 3 hrs., at 140-150C/10 mm for 4 hrs. and at 180-190C/3 mm for 3 hrs. in a stream of inert

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ACCESSION NR: AT4034009

gas. Oxidation of the polyphosphites and polyphosphinites to polyphosphates and polyphosphonates with nitrogen dioxide was also conducted and the reaction of acid poly-N-phenylglucophosphite with chloral demonstrated. The polyglycophosphites and polyglycophosphinites obtained contain hydrophobic radicals and less thermo- and hydrolytically stable than the corresponding polyglycophosphates and polyglycophosphonates. Orig. art. has: 1 figure and 1 table.

ASSOCIATION: None

SUBMITTED: 24Apr63 DATE ACQ: 30Apr64 ENCL: 00

SUB CODE: OC NO REF SOV: 005 OTHER: 003

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

ACCESSION NR: AT4017[illegible] S/0000/63/000/000/0086/0089

AUTHOR: Petrov, K. A.; Nifant'yev, E. Ye.; Sopikova, I. I.; Merkulova, M. I.

TITLE: Phosphorylated polysaccharides. III. Phosphorylation of cellulose by dialkyl-(aryl)phosphites

SOURCE: Tsellyuloza i yeye proizvodnyye, sbornik statey (Cellulose and its derivatives). Moscow, 1963, 86-89

TOPIC TAGS: polysaccharide, cellulose, phosphorylated polysaccharide, cellulose phosphorylation, phosphorylation, dialkylphosphite, diarylphosphite

ABSTRACT: On the basis of the authors' previous work, the following studies were conducted: (1) phosphorylation of cellulose by di-β-chloroethylphosphite, di-β-fluoroethylphosphite, and diphenylphosphite; (2) reaction of cellulose phosphite with tetraethylmethylenediamine; and (3) reactions of cellulose phosphite with chloral, diethyldisulfide, ethylsulfenechloride, and ethylthiocyanate. In the phosphorylation, 0.5 g of cellulose (cotton wool, thread and cord), dehydrated by washing with absolute alcohol, was reacted at 110, 130, 150 or 165C for 30 or 60 hrs. with 25 g of the reagents in a stream of nitrogen at a pressure of 50-60 mm Hg. After removal of the excess phosphite by filtration, the product was washed with methanol and ether and vacuum-dried over P_2O_5. The A P and Cl content of 4.27-

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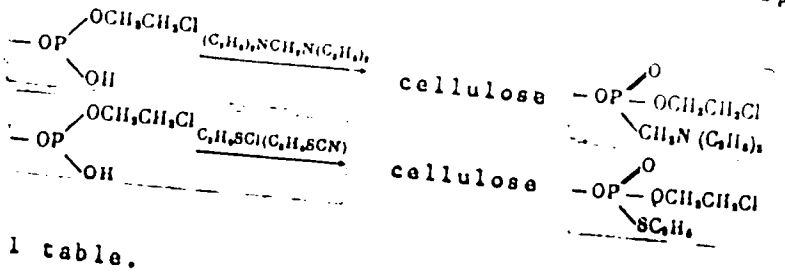
"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

ACCESSION NR: AT4017411

8.56% and 2.97—9.06%, respectively, was found in the product, obtained from cotton wool, while lower results were achieved with viscose thread and cord. Di-β-chloro- and di-β-fluoroethylphosphites were found to be better suited for the reaction. In the reaction with tetraethylmethylenediamine and disulfides, conversion of cellulose phosphites into α-hydroxy- and α-aminophosphonates and thiolophosphates was also accomplished by the reactions



and

Orig. art. has: 1 table.

ASSOCIATION: none

Card 2/3

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

ACCESSION NR: AT40174..

SUBMITTED: 12Apr62

ATD PRESS: 3045

ENCL: 00

SUB CODE: OC

NO REF SOV: 006

OTHER: 002

Card 3/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

AID Nr. 978-12 28 May

AUTHORS' CERTIFICATE

Byulleten' izobreteniy i tovarnykh znakov, no. 1, Jan 1963.
S/286/63/000/001/018/025

K. A. Petrov, V. P. Yevdakov, L. I. Mizrakh, and V. A. Kravchenko, No. 152572. Method for preparing phosphorus-containing polyesters. It includes reaction of phosphoro- or phosphonodiamidic acids with dihydroxy compounds [unspecified] at 200 to 240°C.
[BAO]

Card 1/1

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

ACCESSION NR: AT4017412 S/0000/63/000/000/0090/0093

AUTHOR: Petrov, K. A.; Nifant'yev, E. Ye.; Sopikova, I. I.; Belavintsev, M. A.

TITLE: Phosphorylated polysaccharides. IV. A method for phosphorylating cellulose using phosphorous acid

SOURCE: Tsellyuloza i yeye proizvodny*ye, sbornik statey (Cellulose and its derivatives). Moscow, 1963, 90-93

TOPIC TAGS: polysaccharide, polysaccharide phosphorylation, cellulose, cellulose phosphate, phosphocellulose, phosphorylation

ABSTRACT: Cellulose was phosphorylated by phosphorous acid using 3 different procedures: (1) reacting cellulose and molten phosphorous acid at 100C for 30 hours in a current of dry nitrogen, yielding a product containing 15-17% P; (2) in dimethylformamide or o-xylene solutions in a series of 20 to 60-hour tests at 130 and 160C yielding a product containing 4.8-12.2% P; (3) prolonged (2-3 days) heating at 80-140C in an atmosphere of an inert gas, which proved to be the most suitable since it yielded products containing up to 14% P. Different kinds of cellulose were tested, and the one swollen in water or pyridine was found best. The P-content in the product increased with the concentration of phosphorous acid up to a certain limit, the optimal ratio being one in which there is slightly more than

Card 1/2

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

ACCESSION NR: AT4017412

one phosphorous acid molecule for each β,d-glucose unit in the reacting mixture. Orig. art. has: 2 graphs and 1 table.

ASSOCIATION: none

SUBMITTED: 12Jul62 DATE ACQ: 06Jan64 ENCL: 00

SUB CODE: CH NO REF SOV: 006 OTHER: 003

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; NIFANT'YEV, E.Ye.; KHORKHOYANU, L.V.; VOBLIKOV, V.F.

Phosphorylated polysaccharides. Part 2: Phosphorylation of cellulose by alcoholysis of the amides of trivalent phosphorous acids. Vysokom. soed. 5 no.3:348-352 Mr '63. (MIRA 16:3)
(Cellulose) (Phosphorylation) (Phosphorus acids)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

L 13552-63

ACCESSION NR: AP3000699

0

second one intended to promote the conversion of the initially formed cyclic esters into branched polyphosphites and polyphosphinites. The obtained polymers could be converted to polyphosphates, polythiophosphates, and polyphosphonates by treatment with NO at 30 to 40C, with S at 130C, and with Arbuzov's alkylation reagent, respectively. Orig. art. has: 2 formulas, 3 figures, and 2 tables.

ASSOCIATION: none

SUBMITTED: 01Nov61 DATE ACQ: 17Jun63 ENCL: 00

SUB CODE: CH NO REF SOV: 008 OTHER: 004

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; NIFANT'YEV, E.Ye.; GOL'TSOVA, R.G.

Trans-esterification of diethyl phosphite with ethylene glycol.
Zhur. ob. khim. 33 no.5:1485-1488 My '63. (MIRA 16:6)

(Ethyl phosphites) (Esterification)
(Ethylene glycol)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; NIFANT'YEV, E.Ye.; GOL'TSOVA, R.G.; SOLNTSEVA, L.M.

Phosphorus-containing polymers. Part 7: Synthesis of polyphosphites and polyphosphinites by glycolysis of amides of trivalent phosphorus acids. Vysokom.soed. 5 no.11:1691-1695 N '63. (MIRA 17:1)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; NIFANT'YEV, E.Ye.; KHOREKCYAN, L.V.; [illegible]

Phosphorus-containing polymers. Part 8: Synthesis and some properties of polyvinylene phosphites and phosphinites. Vysokom. soed. [illegible]:1799-180[illegible]. D [illegible]3. (MIRA [illegible])

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

BRYUKHANOV, V.; REPIN, Yu., doverennyy vrach; PETROV, K., doverennyy vrach

Life dictates. Okhr. truda i sots. strakh. 6 no.11:18-20 N '63. (MIRA 16:11)

1. Predsedatel' Chelyabinskogo sel'skogo oblastnogo soveta professional'nykh soyuzov (for Bryukhanov).

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; NIFANT'YEV, E.Ye.; SHCHEGOLEV, A.A.

Synthesis of 1,2-dialkyl phosphinites; 5-6-diisopropylideneglucoses and their conversion to 6-halodeoxyglucose. Zhur.ob.khim. 33 no.3:896-899 Mr '63. (MIRA 16:3)

(Phosphinic acid)
(Glucose)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; NIFANT'YEV, E.Ye.; SHCHEGOLEV, A.A.; BUTILOV, M.M.; REBUS, I.F.

Re-esterification of neutral phosphites and phosphinites.
Zhur.ob.khim. 33 no.3:899-901 Mr '63. (MIRA 16:3)
(Phosphinic acid) (Phosphorous acid)
(Esterification)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; YEVDAKOV, V.P.; MIZRAKH, L.I.

Properties of amides of phosphorus acids. Part 6: Synthesis of 1,2,5-trimethyl-4-piperidyl esters phosphorus acids. Phosphorus analog of "promedol." Zhur.ob.khim. 33 no.4:1246-1251 Ap '63. (MIRA 16:5)

(Phosphorus acids) (Piperidinol)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; NIFANT'YEV, E.E.; ZIBMAN, [illegible]

Synthesis of di-(2-ethylhexyl) phosphate and phenyldi-(2-ethylhexyl) phosphate. Zh. r. prikl. khim. 36 no.8:1853-1857 Ag [illegible]. MIRA 16:11

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

L 17550-63 EWP(j)/EPF(c)/EWT(m)/BDS Pc-4/Pr-4 RM/kW

ACCESSION NR: AP3004425 S/0020/63/151/004/0859/0861

63

AUTHORS: Petrov, K. A.; Nifant'yev, E. Ye.; Sopikova, I. I.

TITLE: Phosphorylation with acylphosphites.

SOURCE: AN SSSR. Doklady*, v. 151, no. 4, 1963, 859-861

TOPIC TAGS: phosphorylation, acylphosphite, alcohol, acid phosphonate

ABSTRACT: The purpose of this work was to develop new methods for phosphorylating hydroxyl compounds. Tribenzoylphosphite and butylene-1,3-acetylphosphite were used at relatively low temperatures in the presence of triethylamine. Tertiary phosphites were formed in high yields with primary, secondary, and tertiary alcohols and with acid phosphonates such as the monopropyl ester of methylphosphinic acid. They can also be used for phosphorylating carbohydrates and other natural products. The reaction of these acylphosphites with phosphoxanthogenates produced thiophosphates and other sulfur-containing compounds. These phosphorylating agents can be obtained readily by reacting PCl_3 or butylene-1,3-chlorophosphite with metallic salts of the corresponding carboxylic acid. Phosphoxanthogenates were produced by reacting PCl_3 and chlorophosphines with salts of alkylxanthogenic acids. Syntheses of the following are described: tributylphosphite; 1,3-butylenebutylphosphite; 1,3-butyleneisopropylphosphite; 1,3-butylene-tert.butylphosphite;

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L 17550-63

ACCESSION NR: AP3004425

and 0,0-1,3-butylene-0-propylmethylsubphosphonate. The preparation of tri-Alpha-furoylphosphite is also described. The original article has 3 formulas.

ASSOCIATION: none

SUBMITTED: 26Jan63 DATE ACQ: 21Aug63 ENCL: 00

SUB CODE: CH NO REF SOV: 008 OTHER: 004

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

L 27274-65 EPF(c)/EPR/EPA(s)-2/EWP(j)/EWA(c)/EWT(m)/T Pc-4/Pr-4/Pe-4/
Pt-10 RPL RM/WW/JW

ACCESSION NR: AP4009831 S/0191/64/000/001/0020/0023

42
41
B

AUTHORS: Petrov, K.A.; Parshina, V.A.; Tsy*pina, G.M.; Luzanova, M.B.

TITLE: Phosphorus-containing polymers based on polyamidophosphinites and phosphites

SOURCE: Plasticheskiye massy*, no. 1, 1964, 20-23

TOPIC TAGS: phosphorus containing polymer, transamidation, alkylphosphonous acid, diamide transamidation, arylphosphonous acid, alkylphosphorous acid, linear phosphorus containing polymer, branched phosphorus containing polymer, polyamidophosphinite polymer, polyamidephosphite polymer, ion exchange resin, fire resistant impregnant

ABSTRACT: The tetraethyldiamides of methyl- and phenyl-phosphonous and butylphosphorous acid were reacted with ethylene-, hexamethylene-, and p-phenylene-diamines according to the equation in the enclosure. Transamidation of the diamides of alkyl(aryl)phosphonous and alkylphosphorous acids with diames forms high molecular (28,600 - 53,000) linear compounds. Transamidation of the indicated diamides with diamines, with the addition of hexaethyltriamidophosphorous acid,

Card 1/3

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

L 27274-65
ACCESSION NR: AP4009831

leads to branched polymers. The smaller the amount of the last ingredient the more the polymer properties approach those of the linear polyamidophosphinites; the greater the amount of hexaethyltriamidophosphorous acid, the more rubbery the product. The polyamidophosphites and phosphinites have coordinated unsaturated phosphorus atoms which react with S, SO_2, CCl_4 and alkyl halides, in some instances causing hardening of the polymers. The products are usable as ion exchange resins and fire-resistant impregnants. Orig. art. has: 2 tables and 4 equations.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 01

SUB CODE: OC,GC NR REF SOV: 000 OTHER: 000

Card 2/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

L 27274-65

ACCESSION NR: AP4009831 ENCLOSURE: 01

$$R-P\begin{matrix}\diagup N(C_2H_5)_2\\ \diagdown N(C_2H_5)_2\end{matrix} + NH_2R'NH_2 \xrightarrow[-2NH(C_2H_5)_2]{} \left(-\underset{\underset{R}{|}}{P}-NHR'NH-\right)_n$$

where

$R = CH_3,\ OC_4H_4,\ C_6H_5$

$R' = (CH_2)_2,\ (CH_2)_4,\ C_6H_4$

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

S/0190/64/006/001/0010/0012

ACCESSION NR: AP4009143

AUTHORS: Petrov, K. A.; Yevdakov, V. P.; Bilevich, K. A.; Kosy*rev, Yu. S.; Radchenko, V. P.

TITLE: Properties of amides of phosphorus acids. 7. A new method for the synthesis of phosphorus-containing polyesters

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 1, 1964, 10-12

TOPIC TAGS: phosphorus acid, phosphinous acid, amides, polyester, polycondensation, hydroquinone, sulfur, oxygen, tetraethyldiamide, hexaethyltriamide

ABSTRACT: Polyesters of trivalent phosphorus acids were obtained by the reaction of tetraethyldiamides of phosphorous or phosphinous acids with hydroquinone in a 1:1 molar ratio. The ingredients are heated at 120C during the initial 1-2 hour period, then at 220C during the subsequent 3 hours, vacuum being applied to remove the evolving diethylamine. The resulting products are yellowish transparent substances, the polyphosphinites being solid and the polyphosphites of rubber-like consistency, the latter possessing good adhesion to glass. The reaction product of hexaethyltriamidophosphite with hydroquinone yields a brittle trimeric polyester. The

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

ACCESSION NR: AP4009143

products obtained had a specific viscosity of 0.04-0.25 (in a 1.5% solution in dimethylformamide) and a decomposition range of 280-490C. Upon treatment with sulfur or oxygen, the trivalent phosphorus of the polyesters became converted to the pentavalent form. In conclusion, the authors call attention to the fact that while the polyesters obtained by their technique had softening points within the 130-150C range, the corresponding products obtained by the conventional method from phosphorus dihalides and diatomic phenols had softening points which were 70-80C lower. Orig. art. has: 3 formulas and 1 table.

ASSOCIATION: none

SUBMITTED: 16Apr62 DATE ACQ: 10Feb64 ENCL: 00

SUB CODE: CH NO REF SOV: 007 OTHER: 003

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

L 10683-65 EWT(m)/EPF(c)/EWP(j) Pc-4/Pr-4 RM

ACCESSION NR: AP4045417 S/0190/64/006/009/1545/1549

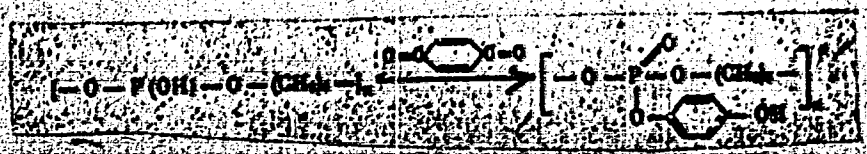
AUTHOR: Petrov, K. A.; Nifant'yev, E. Ye.; Gol'tsova, R. G.

TITLE: Synthesis of polyphosphite-based neutral polyphosphates and amidophosphates

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 6, no. 9, 1964, 1545-1549

TOPIC TAGS: polyphosphate, neutral polyphosphate, amidophosphate, polyphosphite, phosphonylated polymer

ABSTRACT: Neutral polyalkylenephosphates (mol. wt. 12000 - 15000 determined from light dispersion in dimethylformamide) were prepared either by the chlorination of polyalkylenephosphites (mol. wt. 30000) to polyalkylenechlorophosphates with subsequent esterification of the products with alcohols, by the reaction of polyphosphites with p-quinone:



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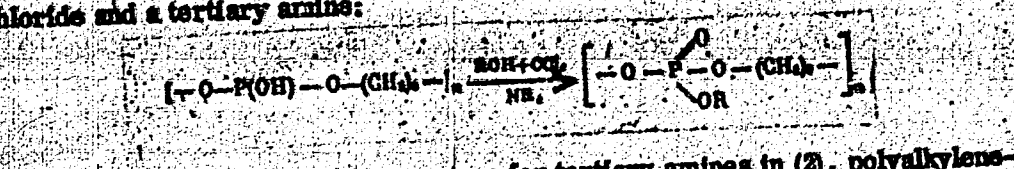
"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

L 10683-65

ACCESSION NR: AP4045417

or by the reaction of polyalkylenephosphites with alcohols in the presence of carbon tetrachloride and a tertiary amine:



(2)

By substituting primary or secondary amines for tertiary amines in (2), polyalkyleneamidophosphates were also prepared. The 12 products discussed are: polyhexamethylenechlorophosphate, poly-3-oxamylenechlorophosphate, polyhexamethyleneethylphosphate, the p-hydroxy phenyl ester of polyhexamethylenephosphoric acid, polyhexamethylenebutylphosphate, neutral polyhexamethylenephosphate, the beta-cyanoethyl ester of polyhexamethylenephosphoric acid, the beta-diethylaminoethyl ester of polyhexamethylenephosphoric acid, the dibutylamide of polyhexamethylenephosphoric acid, the hexamethylenediamine-based amide of polyhexamethylenephosphoric acid, the delta-aminohexylamide of polyhexamethylenephosphoric acid, and the diethylammonium salt of the p-carboxyphenylamide of polyhexamethylenephosphoric acid. The procedures and some characteristics of each individual product are presented. Reaction (2) was found to be a more suitable process. Orig. art. has: 3 chemical equations.

Card 2/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

L 10683-65

ACCESSION NR: AP4045417

ASSOCIATION: None

SUBMITTED: 25Feb63 ENCL: 00 SUB CODE: OC

NO REF SOV: 005 OTHER: 001

Card 3/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; YEVDAKOV, VE.; [illegible], K.A., KOSYREV, Yu.[illegible], [illegible]CHENKO, [illegible].

Properties of the amides of phosphorus acids. Part 7: New method of preparation of phosphorus-containing polyesters. Vysokom. soed. 6 no.1:10-12 Ja'64. (MIRA 17:5

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; NIFANT'YEV, E.Ye.; KHORKHOYANU, L.V.; SHCHERBA, I.G.

Phosphites and phosphinites of trials and their derivatives. Zhur.ob. khim. 34 no.1: [illegible]-77 Ja '64. (MIRA 17:3)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; NIFANT'YEV, E.Ye.; SHCHEGOLEV, A.A.; TUSEYEV, A.P.

1,2,3,4-Diisopropylidenegalactose 6-methyl phosphinite. Zhur.ob.khim. 34 no.2:690-693 F '64. (MIRA 17:3)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

L 17945-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 RM
ACCESSION NR: AP5002561 S/0079/64/034/007/2226/2228

AUTHOR: Petrov, K. A.; Basyuk, A. A.; Yevdakov, V. P.; Mizrakh, L. I.

TITLE: Thiophosphinites

SOURCE: Zhurnal obshchey khimii, v. 34, no. 7, 1964, 2226-2228

TOPIC TAGS: organic phosphorus compound, organic synthetic process, ester, esterification

Abstract: Alkyl- and arylthiophosphinites were synthesized by the reaction of monoalkyl esters of methyl- and phenylphosphinous acid with phosphorus pentasulfide, in yields of 36-40% of the corresponding thiophosphinite, with an admixture of dithiophosphonates. The thiophosphinites were found to be highly reactive. Reaction of the n-butyl and n-propyl esters of methylthiophosphinous acid with tetraethylmethylenediamine produced previously unknown O-n-butyl- and O-n-propylmethyldiethylaminomethylthiophosphinates. Sulfuryl chloride converted O-n-propylmethylthiophosphinite to the acid chloride of the n-propyl ester of methylthiophosphinic acid. The ability of thiophosphinites to enter into a transesterification reaction was demonstrated for the first time; transesterification of the ethyl ester of phenylthiophos-

Card 1/2

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

L 17945-65
ACCESSION NR: AP5002561

phinous acid with n-hexanol produced the n-hexyl ester of phenylthiophosphinous acid. Orig. art. has 3 formulas.

ASSOCIATION: none

SUBMITTED: 15Jun63 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 002 OTHER: 001 JPRS

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

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L 17636-65 EPA(s)-2/EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4/Pt-10 WW/RM
ACCESSION NR: AP4044193 S/0079/64/034/008/2586/2589

AUTHOR: Petrov, K. A.; Kravchenko, V. A.; Yevdakov, V. P.; Mizrakh, L. I.

TITLE: Properties of amides of phosphorus acids. VIII. Phenolysis and alcoholysis of amides of the pentavalent phosphorus acids.

SOURCE: Zhurnal obshchey khimii, v. 34, no. 8, 1964, 2586-2589

TOPIC TAGS: phosphorus acid amide, phenolysis, alcoholysis, pentavalent phosphorus acid

ABSTRACT: The phenolysis and alcoholysis of amidophosphates and amidophosphonates to form the corresponding esters was studied. These reactions with the amides of the pentavalent phosphorus acids were generally slower than with the trivalent phosphorus acids. Phenolysis of diamides of methylphosphonic acid (2:1 molar ratio of phenol: acid) gave diphenylmethylphosphonate, while a 1:1 molar ratio gave mixtures of diphenylmethylphosphonate and monoesters of the monoamides of methylphosphonic acid. Phenolysis of the diamides of phosphoric acid

Card 1/2

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

L 17536-65
ACCESSION NR: AP4044193

proceeded under more drastic conditions (190-250) and gave low yields of the partial phenolysis products. Phenolysis of the monoamides (e.g. of the diethylamide of the isobutylester of methylphosphonic acid) gave esters in good yields. Alcoholysis was somewhat more difficult than phenolysis. O-n-propyl-N-methylamidomethylphosphonate, heated with n-octanol(1:1) for 6 hours at 200C gave a 60% yield of O-n-octyl-O-n-propylmethylphosphonate. Alcoholysis was slower with lower alcohols, while O-(1,2,5-trimethyl-4-piperidyl)-O-propylmethylphosphonate was formed quantitatively with 1,2,5-trimethyl-4-piperidol at 140-150C. The diamides of the acids of pentavalent phosphorus polycondensed with hydroquinone or with 2,2-di(4-hydroxyphenyl)propane to form non-combustible polyesters. Orig. art. has: 4 equations.

ASSOCIATION: None

SUBMITTED: 15Jun63 ENCL: 00

SUB CODE: IC NO REF SOV: 008 OTHER: 003

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

S/0080/64/037/002/0429/0433

ACCESSION NR: AP4018072

AUTHORS: Petrov, K.A.; Nifant'yev, E.Ye.; Ly*senko, T.N.; Sinogeykina, L.P.

TITLE: Synthesis of certain derivatives of phenylphosphonic acid

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 2, 1964, 429-433

TOPIC TAGS: phenylphosphonate, synthesis, phosgenation, phenylphosphonic acid ester

ABSTRACT: The synthesis of phenylphosphonates by the following procedure:

$$C_6H_6 \xrightarrow[AlCl_3]{PCl_3} C_6H_5PCl_2 \cdot AlCl_3 \xrightarrow{SO_2Cl_2} C_6H_5POCl_2 \cdot AlCl_3 \xrightarrow{ROH}$$
$$\longrightarrow C_6H_5PO(OR)_2 \cdot AlCl_3 \xrightarrow{H_2O} C_6H_5PO(OR)_2.$$

and the subsequent phosgenation:

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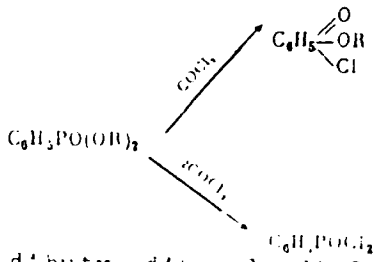
ACCESSION NR: AP4018072



were investigated. The dibuty, dihexyl, di-2-ethylhexyl and diphenyl esters of phenylphosphonic acid were prepared according to the first equation by reacting a mixture of phenyldichlorophosphine and $AlCl_3$ with SO_2Cl_2, removing the excess SO_2Cl_2, and then reacting with the appropriate alcohol. The monobutyl, hexyl and octyl esters were prepared by reacting in absolute ether the dichloranhydride of phenylphosphonic acid (I) with the appropriate alcohol and pyridine. The butyl and isoamyl esters of diethylamidophenylphosphonic acid were prepared by reacting in absolute ether a misture of I, the appropriate alcohol and triethylamine, and then diethylamine. Phosgenation of the diethyl ester of phenylphosphonic acid at 40-50C gives the monochloranhydride of the monoethyl ester of phenylphosphonic acid; at 120-130C, I is formed almost quantitatively. Phosgenation

Card 2/3

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ACCESSION NR: AP4018072

at the lower temperature of the monohexyl ester gives the monochloromethylamide of the monohexyl ester of phenylphosphonic acid. Orig. art. has: 1 table and 3 equations.

ASSOCIATION: None

SUBMITTED: 23Jun62 DATE ACQ: 19Mar64 ENCL: 00

SUB CODE: CH NR REF SOV: 002 OTHER: 004

Card 3/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, K.A.; NIFANT'YEV, E.Ye.; SORIKOVA, I.I.; LEVITAN, [illegible]

Synthesis and [illegible] of dialkylcyclohexyl [illegible]. Zhur.prikl.khim. 37 no. 5:1142-1[illegible] My '64. (MIRA 17:[illegible])

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

L 21059-65 EPF(c)/EWP(j)/EWT(m)/T Pc-4/Pr-4 AFWL/SSD/ASD(m)-3 RM
ACCESSION NR: AP5002477 S/0286/64/000/024/0097/0097

AUTHORS: Petrov, K. A.; Nifant'yev, E. Ye.; Gol'tsova, R. G.; Solntseva, L. M. B

TITLE: A method for obtaining poly-α,ω-alkylenephosphites and phosphinites. Class 39, No. 152571

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 24, 1964, 97

TOPIC TAGS: alkylenephosphite, phosphinite, glycol, polymer, molecular weight, alkyl, aryl, phosphinous acid, phosphorous acid

ABSTRACT: This Author Certificate presents a method for obtaining poly-α,ω-alkylenephosphites and phosphinites with the use of glycols. To obtain polymers of high molecular weight, diamides of alkyl-(aryl)-phosphinous and alkylphosphorous acids are subjected to glycolysis.

ASSOCIATION: none

ENCL: 00

SUBMITTED: 01Mar62

OTHER: 000

SUB CODE: OC NR REF SOV: 000

Card 1/1

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

L 8946-66 EWT(m)/EWP(j)/T/ETC(m) WW/RM

ACC NR: AP5026522 SOURCE CODE: UR/0286/65/000/019/0066/0066

AUTHORS: Petrov, K. A.; Sopikova, I. I.

ORG: none

TITLE: Method for fireproofing woody materials, such as sawdust. Class 38, No. 175211 [announced by Military Academy for Chemical Defense (Voyennaya akademiya khimicheskoy zashchity)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 19, 1965, 66

TOPIC TAGS: fireproofing, sawdust, phosphoric acid, ester, wood product

ABSTRACT: This Author Certificate presents a method for fireproofing woody materials, such as sawdust, by treating them in the dry state with phosphorus-containing substances. To increase the degree of fireproofing, the sawdust is kept immersed for 24 hours at room temperature in anhydrides of alkyl (aryl) phosphorous acids or ester anhydrides of phosphoric acid. Prior to immersion, the phosphor-containing compounds are heated to 70--80C. The treated sawdust is then heated for 20--40 min at 130--160C, filtered, washed with hot dimethylformamide, and dried.

SUB CODE: 07/ SUBM DATE: 31Jul64

Card 1/1 UDC: 674.049.3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

ROZIN, A.M.: NOV [illegible]

Extraction [illegible]
and electr[illegible]
electronega[illegible]

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

(A) L 8865-66 EWT(m)/ETC/EWG(m)/EWP(j)/T/ETC(m) DS/WW/RM

ACC NR: AP5025953 SOURCE CODE: UR/0190/65/007/010/1667/1669 52

AUTHOR: Petrov, K. A.; 44,55 Sopikova, I. I.; 44,55 Nifant'yev, E. Ye. 44,55

51

ORG: None

TITLE: Phosphorylation of polysaccharides. Phosphorylation of cellulose with alkyl(aryl)phosphinic anhydrides

SOURCE: Vysokomolekulyarnyye soyedineniya, v.7, no. 10, 1965, 1667-1669

TOPIC TAGS: phosphorylation, cellulose, cellulose plastic, organic phosphorus compound, phosphinic acid, ion exchange resin, heat resistant material

ABSTRACT: A new method of phosphorylating cellulose with alkyl(aryl) phosphinic anhydrides gave alkyl(aryl)cellulose phosphonates with potential as ion exchange 7 or fire-resistant materials. 15 44,55 Cellulose was reacted with methyl- or phenylphosphinic anhydride to form acid methyl(phenyl)cellulose phosphonates heretofore not described in the literature. Products containing a maximum of

UDC: 661.728.87

Card 1/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

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L 8865-66

ACC NR: AP5025953

about 10% phosphorus were obtained by reaction at 130-140° using 3-5 moles of anhydride for each alpha-d-glucose chain. The cellulose phosphonates are not distinguishable externally from the initial cellulose; they are incombustible when they contain about 4% or more of phosphorus. Orig. art. has: 1 table and 1 equation.

SUB CODE: OC SUBM DATE: 05Oct64/ ORIG REF: 005/ OTH REF: 001

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

L 6970-66 EWT(m)/EPF(c)/EWP(j)/EWP(t)/EWP(b) IJP(c) JD/RM

ACC NR: AP5028204 SOURCE CODE: UR/0079/65/035/009/1602/1606

AUTHOR: Petrov, K. A.; Parshina, V. A.; Manuilov, A. F.

ORG: none

TITLE: Preparation of tetraalkyl(aryl)alkylenediphosphine oxides from methylolphosphines

SOURCE: Zhurnal obshchey khimii, v. 35, no. 9, 1965, 1602-1606

TOPIC TAGS: organic phosphorus compound, organic synthetic process

ABSTRACT: A new method of preparation of tetraalkyl(aryl)alkylenediphosphones and diphosphine oxides is proposed in which dialkyl(aryl)methylolphosphines (I) are alkylated by dihaloalkanes, the tetraalkyl(aryl)dimethylolalkylenediphosphonium salts (II) are dealkylated, and the alkylenediphosphines formed (III) are oxidized:

Card 1/2 UDC: 547.241 + 547.438.1

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

L 6970-66

ACC NR: AP5028204

3

$$2R_2P(CH_2OH) + Hal(CH_2)_nHal \rightarrow \left[R_2\overset{+}{P}(CH_2)_n\overset{+}{P}R_2 \;\; (CH_2OH)_2 \right] 2Hal \xrightarrow{NaOH}$$

(I) (II)

$$\rightarrow R_2P(CH_2)_nPR_2 \xrightarrow{O} R_2P(O)(CH_2)_nP(O)R_2$$

(III)

The alkylation was studied on reactions of diheptyl-, dibutyl, and diphenylmethylolphosphines with 1,1- and 1,2-dihaloalkanes. The diphosphonium salts obtained were decomposed with concentrated alkali at 50-70C to given good yields of alkylenediphosphines. The latter (tetraheptylmethylene-, tetraheptylethylene-, tetrabutylethylene-, tetraphenylethylenediphosphine oxide) were oxidized with air, hydrogen peroxide, and potassium permanganate in acetone. The experimental procedures are described. "The authors thank G. F. Dyadenko, who performed the spectroscopic part of the work." Orig. art. has: 1 figure, 4 tables, and 1 formula.

SUB CODE: OC/ SUBM DATE: 13Aug64/ ORIG REF: 002/ OTH REF: 017

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

L 3025-66 EWT(m)/EPF(c)/EWP(j)/T RM

ACCESSION NR: AP5022010 UR/0286/65/000/014/0078/0078

678.85

AUTHOR: Petrov, K. A.; Yevdakov, V. P.; Bilevich, K. A.; Radchenko, V. P.; Kosarev, Yu. S.

TITLE: A method for producing organic phosphorus polymers, Class 39, No. 172996

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 14, 1965, 78

TOPIC TAGS: organic phosphorus compound, polymer, phosphorous acid

ABSTRACT: This Author's Certificate introduces a method for producing organic phosphorus polymers based on amides of phosphorous and phosphonous acids. A wider selection of raw materials is provided by using dihydroxyl-containing aryls as the second component for polymerization.

ASSOCIATION: none

SUBMITTED: 31Oct61 ENCL: 00 SUB CODE: MT, GC

NO REF SOV: 000 OTHER: 000

Card 1/1

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

L 4957-66 EWT(m)/EPF(c)/EWP(j) RM

ACC NR: AP5025680 SOURCE CODE: UR/0286/65/000/018/0026/0026

AUTHORS: Petrov, K. A.; Raksha, M. A.; Vinogradov, V. L.

ORG: none

TITLE: A method for obtaining divinylchloroanhydrides of substituted vinylphosphonic acids. Class 12, No. 174627

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 18, 1965, 26

TOPIC TAGS: phosphonic acid, vinylphosphonic acid, fatty acid, phosphor organic compound

ABSTRACT: This Author Certificate presents a method for obtaining divinylchloroanhydrides of substituted vinylphosphonic acids by reacting simple esters with phosphorus pentachloride, with subsequent treatment of the reaction mixture with sulfur dioxide. To increase the range of starting raw materials, esters of simple fatty acids were used. In an alternative procedure, excess of starting ester is used as solvent.

SUB CODE: OC/ SUBM DATE: 11Jul64

UDC: 547.419.1-312.07

Card 1/1

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

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[illegible], [illegible]A.; BAR[illegible], [illegible]A.; KH[illegible]KH[illegible]YAN[illegible], [illegible]V.

Properties [illegible] and anhydrides, [illegible] of anhydrides [illegible] with [illegible] [illegible]. Khim. [illegible] Ap [illegible]

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

L [illegible]

ACC NR: [illegible]

[illegible]: Petrov, K. A.; [illegible]

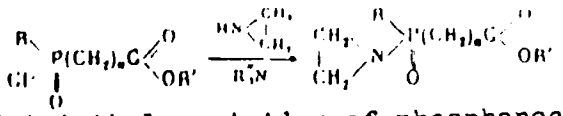
[illegible]: none

[illegible]: Ethylene imides of [illegible]

SOURCE: Zhurnal obshchey khimii, [illegible]

TOPIC TAGS: imide, carbonate, [illegible] organic compound, tertiary amine, [illegible]

ABSTRACT: The article is devoted to the synthesis of heretofore unknown ethylene imides of phosphono- and phosphatocarbonates, differing from one another chiefly in the bond between the carboxylic acid radical and phosphorus (a P-C and a P-O-C bond). These substances were synthesized in a search for new antitumor agents and in order to determine their activity as a function of structure. (Results of tests of their cytostatic activity will be published later). Monoethyleneimidophosphonocarbonates were prepared by treating equimolar amounts of the corresponding P-monochlorides with ethylene imine in absolute ether in the presence of a tertiary amine:



Diethylene and triethylene imides of phosphonocarboxylic acids were synthesized in similar fashion by use of dichlorides and trichlorides of these acids. Heretofore unknown P-chloro-P-allylamido-

Card 1/2 UDC: 546.185+547.426:547.[illegible]

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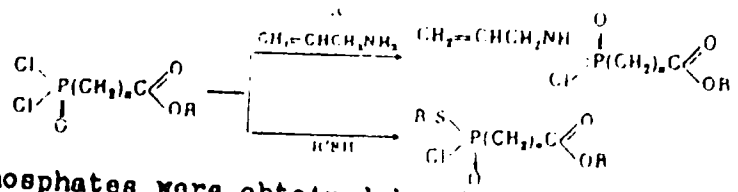
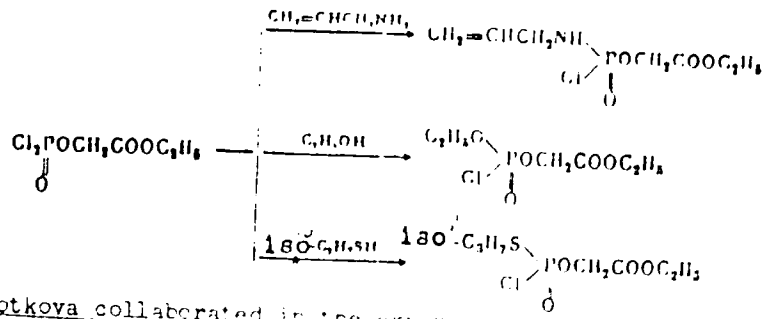
"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

ACC NR: AP6027082

phosphonocarbonates and P-chlorothiolophosphonocarbonates were obtained in 60-70% yields by the reaction



Monochlorophosphates were obtained by the following reactions:



V. P. Korotkova collaborated in the experimental work.

SUB CODE: 07 / SUBM DATE: 15Dec64 / ORIG REF: [illegible] / OTH REF: [illegible]

Card 2/2

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

L 27704-66 EWP(1)/EWT(m) RM

ACC NR: AF6018512 SOURCE CODE: UR/0079/65/035/011/2062/2065

AUTHOR: Petrov, K. A.; Parshina, V. A.; Manuilov, A. F.

ORG: none

32
B

TITLE: Production of dialkylmethylolphosphines

SOURCE: Zhurnal obshchey khimii, v. 35, no. 11, 1965, 2062-2065

TOPIC TAGS: alkylphosphonium salt, alkylphosphine, bromide, alkylation, alkylphosphine oxide, hydrogen peroxide

ABSTRACT: Dibutyl- and diheptylmethylolphosphines were produced in high yields by the reaction of trimethylolphosphine with butyl and heptyl bromides, followed by conversion of the alkyltrimethylolphosphonium bromides formed to alkyldimethylolphosphines through the action of triethylamine. Secondary alkylation of the alkyldimethylolphosphines yielded dialkyldimethylolphosphonium bromides, in better yields when the reactions were conducted at 60-70°. Alkylation can be carried out both without and with a solvent (alcohols or alkyl bromides). Dialkyldimethylolphosphonium bromides, just like monoalkyltrimethylolphosphonium bromides, are decomposed by triethylamine to dialkylmethyolphosphines. The methylolphosphines add sulfur to form alkylmethylolphosphine sulfides. Under the action of hydrogen peroxide, the dialkylmethylolphosphines are oxidized to dialkylmethylolphosphines oxides, the latter being converted to the corresponding dialkylchloromethylphosphine oxides by the action of thionyl chloride.

Orig. art. has: 3 tables. [JPRS]

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L 24519-66 EWT(m)/EWP(j)

ACC NR: AP6009513 SOURCE CODE: UR/0413/66/000/005/0022/0022

AUTHOR: Petrov, K. A.; Raksha, M. A.; Vinogradov, V. L.

ORG: none

TITLE: Synthesis of dichlorides of alkoxyvinyl- or alkoxyalkyl-vinyl-thiophosphinic acids. Class 12, No. 179314 [announced by the Military Academy of Chemical Defense (Voyennaya akademiya khimicheskoy zashchity)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 5, 1966, 22

TOPIC TAGS: vinyl thiophosphinic acid, dichloride

ABSTRACT: An Author Certificate has been issued describing a method for the synthesis of dichlorides of alkoxyvinyl- or alkoxyalkylvinyl-thiophosphinic acids by the interaction of organic ethers with phosphorus pentachloride in an inert solvent followed by the treatment of the reaction mass with hydrogen sulfide. To broaden the variety of raw materials, the use of ethers of the aliphatic series is suggested. [LD]

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Card 1/1 BLG UDC: 547.419.1'053.23.07

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L 16000-66 EWP(j)/EWT(m) RM/WW

ACC NR: AT6004037 SOURCE CODE: UR/0000/65/000/000/0310/0313

AUTHOR: Petrov, K. A.; Baksova, R. A.; Khorkhoyanu, L. V.; Rebus, I. F.

ORG: None

23
22
B+1

TITLE: Properties of phosphonic anhydrides. Part 2: Synthesis and properties of ethylenediphosphonic anhydride

SOURCE: AN SSSR. Otdeleniye obshchey i tekhnicheskoy khimii. Problemy organicheskogo sinteza (Problems in organic synthesis). Moscow, Izd-vo Nauka, 1965, 310-313

TOPIC TAGS: organic phosphorus compound, alcohol, phenol

ABSTRACT: The article presents data on the synthesis of ethylenediphosphonic anhydride and on a study of its reaction with monohydric and dihydric alcohols and phenols. The anhydride was obtained in almost quantitative yield in two ways: (1) controlled hydrolysis of ethylenediphosphonyl tetrachloride in chloroform with prolonged heating

$$nCl_2(O)PCH_2CH_2P(O)Cl_2 + 2nH_2O \longrightarrow n(O_2PCH_2CH_2PO_2) + 4n\ HCl$$

and (2) reaction of the tetrachloride with tetraethyl ethylenediphosphonate taken in equimolar amounts:

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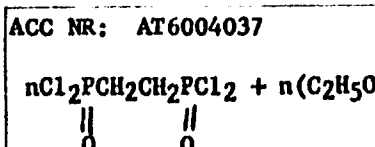
L 16000-66

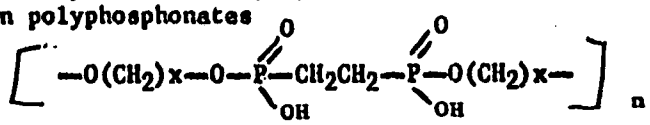
ACC NR: AT6004037

$$n\underset{\underset{O}{\|}}{Cl_2PCH_2CH_2}\underset{\underset{O}{\|}}{PCl_2} + n(C_2H_5O)_2\underset{\underset{O}{\|}}{PCH_2CH_2}\underset{\underset{O}{\|}}{P}(OC_2H_5)_2 \longrightarrow 2n(O_2PCH_2CH_2PO_2) + 4n\ HCl + 4nCH_2{=}CH_2$$

Ethylenediphosphonic anhydride is apparently a polymer with the formula



and consists of a vitreous hygroscopic mass insoluble in all organic solvents. It reacts readily with alcohols, glycols, and phenols. Acid esters of ethylenediphosphonic acid were obtained in good yields from reactions of the anhydride with ethyl, isooctyl, and sec-octyl alcohol and p-nitrophenol at 80—120C. Reaction of the anhydride with 1,3-propanediol and 1,6-hexanediol produced the heretofore unknown polyphosphonates



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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETROV, Khr.; PETKOV, Iv.

The temperature effect of ultrasound oscillations at the dissolution of steel in phosphoric acid. Godishnik mash elekt 10 no.1:153-162 '61 (publ. '62).

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430007-0

PETKOV, Khr.

Materialistic concepts of essential aspects of pathological processes. Suvr. med. 16 no.1:715-720 '65

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