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KOSHKIN, D.A.

USSR.

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

KOCHKIN, D. A.

USSR/Chemistry - Synthesis

Card 1/1 Pub. 40 - 25/27

Authors : Shostakovskiy, M. F.; Kochkin, D. A.; and Vlasov, V. M.

Title : Synthesis and conversions of oxygen-containing silicon-organic compounds

Periodical : Izv. AN SSSR. Otd. khim. nauk 6, 1120-1123, Nov-Dec 1954

Abstract : An investigation was conducted to determine the reaction between ethylene oxide and trialkyl(aryl)silane chlorides : trimethyl-, dimethylethyl-, tri-ethyl- and diethylphenylsilane chlorides. The derivation of 2-chloro-ethoxy dimethyl-, methyldiethyl- triethyl- and diethylphenylsilanes and their chemical characteristics are described. A new method for the derivation of oxygen-containing silicon-organic compounds is described. Five references: 3 USSR and 2 USA (1941-1954). Table.

Institution : Acad. of Sc., USSR, The N. D. Zelinskiy Institute of Organ. Chemistry

Submitted : July 12, 1954

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

USSR/Chemistry - Physical chemistry

Card 1/1 Pub. 43 - 50/62

Authors : Kasatochkin, V. I.; Shostakovskiy, M. F.; Zil'berbrand, O. I.; and Kochkin, D. A.

Title : About hydrogen bonds in silanols

Periodical : Izv. AN SSSR. Ser. fiz. 18/6, 726-728, Nov-Dec 1954

Abstract : The infrared absorption spectra of trimethylcarbinol and five different silanols: $(CH_3)_3SiOH$, $(CH_3)_2C_2H_5SiOH$, $CH_3(C_2H_5)SiOH$, $(C_2H_5)_3SiOH$ and $C_6H_5(C_2H_5)_2SiOH$ were investigated in a range of wave lengths of from 2 - 4 to determine the nature of molecular association of silanols and the effect of the Si-atom on the hydroxyl group. It was established, among others, that the chem. properties of silanols, particularly their amphoteric properties, are due to the strengthening of the O-H bond and strong reaction between the oxygen and hydrogen of the neighboring molecules which takes place as result of increased polarity of the O-H bond. Graphs.

Institution : Acad. of Sc., USSR, Institute of Combustible Minerals

Submitted : .....

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

Kochkin, D.A.

62

✓ Oxygen-containing organ silicon compounds. III. Preparation of trimethyl- and triethylsilanols and their transformations. M. F. Shostakovskii, I. A. Sokolov, D. A. Kochkin, and V. I. Belyaev (N. D. Zelinskii Inst. Org. Chem., Acad. Sci. U.S.S.R., Moscow). Zhur. Obshchei Khim. 24, 2200-6(1954). cf. C.A. 49, 1541h, 7510f.— Into 109 g. Me_3SiCl in dry Et_2O was passed dry NH_3 9 hrs. at 0-7°, the pptd. NH_4Cl was sep[illegible] the soln. distd., yielding 64.2% $NH(SiMe_3)_2$, b. [illegible] 0.7784, n_D^{20} 1.4090. This (70 g.) was mixed [illegible] H_2O 250 ml. Et_2O, and 10 drops methyl orang[illegible] soln. and treated with cooling to 0-7° with 25 [illegible] N HCl over 2.5 hrs. when the reaction was complete; distn. of the org. layer gave 88.8% Me_3SiOH, b_{100} 88-8.6°, d_{20} 0.8130, n_D^{20} 1.3892. This (22.8 g.), 11 g. $EtOCH:CH_2$, and 0.004 g. HCl were heated in sealed ampul 8 hrs. at 65°, yielding 18.8% $MeCH(OEt)OSiMe_3$, b_{10-17} 38-9°, n_D^{20} 1.3940, d_{20} 0.8348, as well as 15.4 g. $O(SiMe_3)_2$, b. 99-100°, and 5.4 g. $MeCH(OEt)_2$. Refluxing 151 g. Et_3SiCl with 100.1 g. dry Ac_2O 5-6 hrs. with distn. of AcCl, followed by slow addn. of the residue under the surface of 500 ml. H_2O and 20 ml. 18% NH_4OH below 6°, gave a top layer of Et_3SiOH, 75%, b_{10} 80°, b_{100} 158.5-4.5°, n_D^{20} 1.4341, d_{20} 0.8646; the same was formed in 61% yield when 100 g. Et_3SiCl in 500 ml. dry Et_2O and a few drops of phenolphthalein indicator were treated at −5 to +2° with N NaOH until a stable pink color formed; distn. of the org. layer gave the final product. Et_3SiOH has a camphor odor, is sparingly sol. in H_2O, can be stored in a well stoppered flask for long periods; on heating with mineral acids it is transformed to $O(SiEt_3)_2$; it does not react with alkalies, but does react with Na and K on heating. Heating 53 g. Et_3SiOH and 21.5 g. $PrOCH:CH_2$ with 0.02 ml. HCl in ampul 10 hrs. at 65° gave 67.45% $MeCH(OPr)OSiEt_3$, b_{10-11} 90-90°, b_{100} 204-5°, n_D^{20} 1.4150, d_{20} 0.8572.

G. M. Kosolapoff

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7

Synthesis and transformations of oxygen-containing organosilicon compounds. II. Reaction of diethyl and diphenylsilanediols with vinyl ethers. M. P. Shostakovskii, D. A. Kochkin, and V. M. Rog. Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci. 1955, 871-3 (Engl. translation). See C.A. 50, 8330d. B. M. R.

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SHOSTAKOVSKIY, M.F.; KOCHKIN, D.A.; SHIKHIYEV, I.A.; VLASOV, V.M.

Investigation in the field of oxygenated silicon organic compounds. Part 7. Synthesis and certain conversions of silanols. Zhur.ob. Khim. 25 no.3:622-626 Mr '55. (MLRA 8:7)

1. Institut organicheskoy khimii Akademii nauk SSSR.
(Silanol)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

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KOCHKIN, D.A.

KASATOCHKIN, V.I.; SHOSTAKOVSKIY, M.F.; ZIL'BERBRAND, O.I.; KOCHKIN, D.A.

Hydrogen linkage in silanols. Zhur.fiz.khim. 29 no.4:730-733 Ap '55.
(MLRA 8:8)

1. Akademiya nauk SSSR, Institut organicheskoy khimii.
(Silanol)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

SHOSTAKOVSKIY, M.F.; KOCHKIN, D.A.; ROGOV, V.N.

Research in the synthesis and conversion of oxygen-containing organosilicon compounds. Part 6. Preparation of secondary dialkyl-(aryl) chlorosilanes, dialkyl-(aryl)silanols and some of their conversions. Izv. AN SSSR. Otd.khim.nauk no.9:1062-1069 S '56. (MIRA 9:11)

1. Institut organicheskoy khimii imeni N.D. Zelinskogo Akademii nauk SSSR.
(Silicon organic compounds)

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

Kochkin, D.A.

USSR/Organic Chemistry. Synthetic Organic Chemistry. E-2

Abs Jour: Ref Zhur - Khimiya, No. 8, 1957, 26885.

Author : Shestakovskiy, M.F.; Kochkin, D.A.
Inst : Academy of Sciences of USSR.
Title : Research in Region of Synthesis and Conversions of Vinyl Compounds of Silicium. Report 2. Vinylization of Hydrogen Containing Haloidsilanes and Alkyldihaloidsilanes by Contact Method.

Orig Pub: Izv. AN SSSR, Otd. khim. n., 1956, No. 9, 1150 - 1152.

Abstract: The following was obtained by passing a mixture of C_2H_2 and either $HSiCl_3$, or CH_3SiHCl_2 or $C_2H_5SiHCl_2$ over Pd/Al_2O_3 at 260-300° (the substance, yield in %, boiling point in °C/mm,

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SHOSTAKOVSKIY, M.F.; KOCHKIN, D.A.; VINOGRADOV, V.L.; KETERMAN, V.A.

Research in the synthesis and conversion of oxygen-containing organosilicon compounds. Part 6. Interaction of hydrogen-con-taining alkyl(aryl) dichlorosilanes with alcohols. Izv. AN SSSR. Otd.khim.nauk no.10:1269-1271 O '56. (MLRA 9:12)

1. Institut organicheskoy khimii imeni N.D. Zelinskogo Akademii nauk SSSR.

(Silane) (Alcohols)

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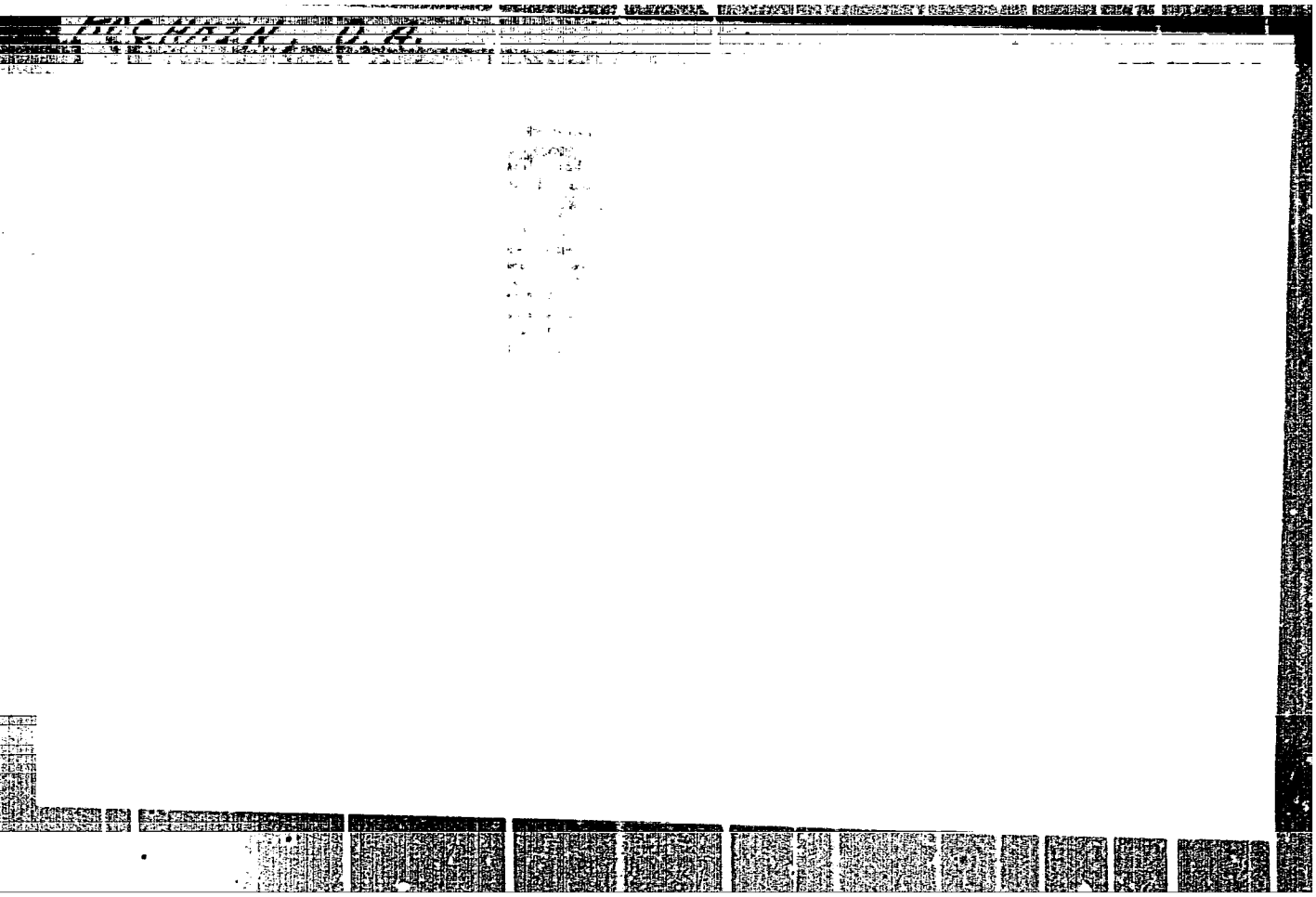

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

Kochkin, D.A.

AUTHORS: Shostakovskiy, M.F., Kochkin, D.A., Vinogradov, V.L. 62-12-4/20

TITLE: Investigation of the Synthesis and of the Transformations of Vinyl Compounds of Silicon (Issledovaniya v oblasti sintesa i prevrashcheniy vinilovykh soyedineniy kremniya) Information 3. The Obtaining of Vinyl-Alkyl-Chlorine-Silanes by the Interaction of Acetylene With Hydrogen-Containing Chlorosilanes and the Investigation of Some of Their Properties (Soobshcheniye 3. Polucheniye vinilalkilkhlorsilanov vzaimodeystviyem atsetilena s vodorodsodershashchimi khlorsilanami i issledovaniye ikh nekotorykh svoystv).

PERIODICAL: Izvestiya AN SSSR Otdeleniye Khimicheskikh Nauk, 1957, Nr 12, pp. 1452-1456 (USSR)

ABSTRACT: The present paper deals with the elaboration of the reaction of the vinylation of hydrogen-containing alkyl-halide-silanes as a result of their cooperation with acetylene. From the reaction products the following substances were separated: methyl- and ethyl butadienyl-dichlorine silanes, dimethyl- and diethyltetrachloride silylethanes, as well as dimethyl- and diethyltetrachloride silylethanes. The catalyzers of the vinylation are those of the palladium group (metals, acids, salts). The reaction of vinylation can be realized by means

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Investigation of the Synthesis and of the Transformations of Vinyl Compounds of Silicon. Information 3. The Obtaining of Vinyl-Alkyl-Chlorine-Silanes by the Interaction of Acetylene With Hydrogen-Containing Chlorosilanes and the Investigation of Some of Their Properties

62-12-4/20

of the method interrupted in autoclave as well as by the uninterrupted method (like in the case of the vinylation of alcohols). There are 9 references, 6 of which are Slavic.

ASSOCIATION: Institute for Organic Chemistry AN USSR imeni N.D.Zelinskiy (Institut organicheskoy khimii im. N.D.Zelinskogo Akademii nauk).

SUBMITTED: June 22, 1956

AVAILABLE: Library of Congress

Card 2/2

1. Hydrogen-Vinylation-Reaction 2. Methylbutadienyldichlorine
3. Ethylbutadienyldichlorine 4. Diethyltetrachloride silylethanes

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

Kochkin, D.A.

AUTHORS: Shostakovskiy, M.F., Savitskiy, Ye.M., Kochkin, D.A., Musatova, L.V. 62-12-15/20

TITLE: On the Comparative Efficiency of Silicon Alloys With Copper and Nickel, Applicable in Direct Synthesis of Vinylchlorosilanes (O sravnitel'noy effektivnosti splavov Fremniya s med'yu i nikelem, primenyayemykh v pryamom sintese vinilkhlorsilanov).

PERIODICAL: Izvestiya AN SSSR Otdeleniye Khimicheskikh Nauk, 1957, Nr 12, pp. 1493-1495 (USSR)

ABSTRACT: In the course of a thorough analysis of the alloy of silicon with copper (which was already previously described) the authors, among other things, found that the alloy contained 50% silicon, 49% copper, and 0.4% aluminum. Also silicon alloys were investigated which contained also other metals such as chromium, manganese, and molybdenum. In other cases (with the exception of nickel and copper) negative results were obtained. From the result of the synthesis (see table) it may be seen that the silicon-nickel alloy is more active (when vinylchlorosilanes are obtained by direct synthesis). It was further shown that the silicon-nickel alloy (nickel content 15%) must be considered to be the most suitable. There are 1 table, and

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On the Comparative Efficiency of Silicon Alloys With Copper and Nickel, Applicable in Direct Synthesis of Vinylchlorosilanes

62-12-15/20

4 references, 2 of which are Slavic.

ASSOCIATION: Institute for Organic Chemistry AN USSR imeni N.D.Zelinskiy (Institut organicheskoy khimii im. N.D.Zelinskogo Akademii nauk SSSR).

SUBMITTED: August 13, 1957

AVAILABLE: Library of Congress

Card 2/2 1. Silicon copper-Alloy-Analysis 2. Silicon nickel-Alloy-Analysis

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

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KOCHKIN, D.A.

SHOSTAKOVSKIY, M.F.; KOCHKIN, D.A.; VINOGRADOV, V.L.; KETKOVAN, V.A.

Synthesis and conversion of oxygen containing silicon organic compounds. Part 6: Reaction of oxygen containing alkyl (aryl) dichlorosilanes with alcohols. Zhur. ob. khim. 27 no.9:2487-2491 S '57. (MIRA 11:3)

1.Institut organicheskoy khimii AN SSSR.
(Silanes) (Alcohols)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

SOV/74-27-10-4/4

AUTHORS: Shostakovskiy, M. F., Kochkin, D. A., Vinogradov, V. L. (Moscow)

TITLE: The Unsaturated Silicon Compounds (Nepredel'nyye soyedineniya kremniya)

PERIODICAL: Uspekhi khimii, 1958, Vol 27, Nr 10, pp 1221-1256 (USSR)

ABSTRACT: Early in this paper the authors deal with the importance of such silicon compounds which have alkyl or alkene groups at the silicon atom. In the USSR as well as abroad abundant scientific publications on the unsaturated silicon compounds are available. The first part of this report is devoted to the vinyl compounds of silicon. In section 1 the following methods for the production of vinyl silane are discussed: a) the production of vinyl chlorosilanes from vinyl chloride and silicon by means of direct synthesis; b) the production of vinyl alkyl silanes and halogen vinyl silanes by means of dehydrochlorination of the chloroalkyl silanes; c) organometallic synthesis of the vinyl compounds of silicon; d) the organolithium synthesis; e) vinylation of the silanes by means of acetyls; f) production of organosilicic vinyl ethers. In the second section the physical properties of the vinyl silanes are discussed. Section three deals

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with the chemical properties of the vinyl silanes: a) interaction between the halogen vinyl silanes and alcohols; b) reaction with ethylene chlorohydrin; c) hydrohalogenation; d) hydrolysis and cohydrolysis; e) combination with aldehydes; f) combination with dialkyldithiophosphoric acids; g) combination with thiocyanogen; h) Friedel-Krafts reaction; i) diene-synthesis; k) the combination with chloroform and tetrachlorosilicon; l) interaction with carbon oxide and hydrogen (oxo-synthesis). The second part of the paper treats the allyl compounds of silicon. Section 1: diverse methods for the production of allyl silanes: a) direct synthesis of the allyl chlorosilanes; b) organomagnesium synthesis of the allyl compounds of silicon; c) organolithium synthesis of the α- and β-alkenyl compounds of silicon; d) hydrogenation of the allyl chlorosilanes; e) production of halogen alkenyl silanes by combination with butadiene; section 2: the physical properties of the allyl silanes; section 3: the chemical properties of the allyl compounds of silicon: The interaction with hydrogen bromide and hydrogen iodide, with hydrogen chloride, with halides; hydrogenation of the allyl silanes, reaction with sulfuric acid etc. Part 3: Unsaturated organosilicic compounds of the acetylene series: section 1:

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methods for the production of organosilicic compounds of the acetylene series; section 2: physical properties of the organosilicic compounds of the acetylene series. Section 3: chemical properties of the organosilicic compounds of the acetylene series. Part 4 of the paper deals with the polymerization and the copolymerization of unsaturated compounds of silicon. Section 1: polymerization. Section 2: copolymerization.
There are 3 tables and 119 references, 70 of which are Soviet.

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SOV/79-28-10-45/60

AUTHORS: Shostakovskiy, M. F., Kochkin, D. A., Neterman, V. A., Sidel'kovskaya, F. P.

TITLE: Investigations in the Field of the Synthesis and Conversions of Oxygen-Containing Organosilicon Compounds (Issledovaniya v oblasti sintesa i prevrashcheniy kislorodsoderzhashchikh kremneorganicheskikh soyedineniy)
On the Reaction of Vinyl Alkyl-Chloro Silanes With Vinyl Butyl Ether and Vinyl Lactams (O vzaimodeystvii vinilalkil-khlorsilanov s vinilbutilovym efirom i vinillaktamami)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol 28, Nr 10, pp 2840-2841 (USSR)

ABSTRACT: It is a well known fact (Refs 1, 2) that vinyl alkyl-chloro silanes do not polymerize, and that if they do, they form polymers of low molecular weights. Their polymerization, either single or together with other unsaturated compounds, suggested itself. The authors found that vinyl alkyl dihalogens polymerize neither at high temperatures (100°, 200 hours), nor with catalysts. On the other hand, the unsaturated organo-silicon compounds with a double bond in the middle of the

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SOV/79-28-10-45/60

Investigations in the Field of the Synthesis and Conversions of Oxygen-Containing Organosilicon Compounds. On the Reaction of Vinyl Alkyl-Chloro Silanes With Vinyl Butyl Ether and Vinyl Lactams

silicon-carbon chain or with two conjugated double bonds tend to polymerisation, either with the action of initiators or of light. Thus ethyl-dichloro butadiene silane $C_2H_5SiCl_2CH=CHCH=CH_2$ was changed, with the action of light, into a transparent, caoutchouc-like mass, within five months. At room temperatures and at 60°, no joint polymerization of the vinyl alkyl-chlorosilanes could be observed in the joint reaction of the vinyl methyl- and vinyl ethyl-dichloro silane pairs with vinyl butyl ether, vinyl caprolactam, and vinyl pyrrolidone, in the presence of azoisobutyro nitrile. In this case, the vinyl alkyl-chloro silanes act as initiators of the polymerization of vinyl butyl ether, vinyl caprolactam, and vinyl pyrrolidone. However, in the case of a reaction of vinyl alkyl-dichloro silanes with vinyl pyrrolidone, a small quantity of products containing silicon and nitrogen and probably constituting products of the reaction of these monomers, were obtained in addition to its polymers. Thus the monomer pairs do not, in effect, form a joint polymer. The polymers of vinyl

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SOV/79-28-10-45/60

Investigations in the Field of the Synthesis and Conversions of Oxygen-Containing Organosilicon Compounds. On the Reaction of Vinyl Alkyl-Chloro Silanes With Vinyl Butyl Ether and Vinyl Lactams

butyl ether, vinyl caprollactam, and vinyl pyrrolidone result as the main products of the reaction of the above-mentioned compounds. There are 3 references, 1 of which is Soviet.

ASSOCIATION: Institut organicheskoy khimii Akademii nauk SSSR (Institute of Organic Chemistry at the Academy of Sciences, USSR)

SUBMITTED: August 17, 1957

Card 3/3

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

SHOSTAKOVSKIY, M.F.; KOTELEV, V.N.; KOCHKIN, D.A.; KUZNETSOVA, G.I.; KALININA, S.P.; BORISENKO, V.V.

Synthesis and various conversions of tin and silicon organic compounds. Zhur. prikl. khim. 31 no.9:1434-1436 S '58. (MIRA 11:10)

1. Institut organicheskoy khimii AN SSSR i Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut promyshlennosti plasticheskikh mass.
(Tin organic compounds) (Silicon organic compounds)

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

KOCHKIN, D.A.; KOTKELEV, V.N.; SHOSTAKOVSKIY, M.F.; KALININA, S.P.; KUZNETSOVA, G.I.; BORISENKO, V.V.

Tin organic polymers. Vysokom. soed. 1 no.3:482-484 Mr '59. (MIRA 12:10)

1. Nauchno-issledovatel'skiy institut promyshlennosti plasticheskikh mass.

(Polymers) (Tin organic compounds)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

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SOV/[illegible]

International symposium on macromolecular chemistry, Moscow, 1960.

Mezhdunarodnyy simpozium po vysokomolekulyarnoy khimii SSSR, Moskva, 14-18 iyunya 1960 g.; doklady i avtoreferaty. Sektsiya I. (International Symposium on Macromolecular Chemistry Held in Moscow, June 14-18, 1960; Papers and Summaries. Section I.) [Moscow, Izd-vo AN SSSR, 1960] 164 p. 1,500 copies printed.

Sponsoring Agency: The International Union of Pure and Applied Chemistry, Commission on Macromolecular Chemistry

Tech. Ed.: T. V. Polyakova.

PURPOSE: This collection of articles is intended for chemists and researchers interested in macromolecular chemistry.

COVERAGE: This is Section I of a multivolume work containing scientific papers on macromolecular chemistry in Russian. The material includes data on the synthesis and properties of polymers, and on the processes of polymerization, copolymerization, polycondensation, and polyreactivation. Each text is presented in full or summarized in French, English, and Russian. There are 47 papers, 20 of which were presented by Soviet, Rumanian, Hungarian, and Czechoslovakian scientists. No personalities are mentioned. References accompany individual articles.

Tsyuptsova, Ye. I., S. A. Bolgoplesk, I. S. Bengalene, S. S. Korshak, and I. S. Bengalene (USSR). The Synthesis of Cis- and Trans-Diene Polymers on Chiral Catalysts and a Study of Their Structure and Properties 13

Kefeli, V. Ya., S. V. Sergeev, Ye. S. Filippovskaya (USSR). Synthesis and Polymerization of Esterified Polyethylenes 47

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49

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

KOCHKIN, D.A.; KOTRELEV, V.N.; KALININA, S.P.; KUZNETSOVA, G.I.; LAYNE, L.V.; CHERVOVA, L.V.; BORISOVA, A.I.; BORISENKO, V.V.

Organotin monomers and polymers. Vysokom.soed. 1 no.10: 1507-1513 O '59. (MIRA 13:3)

1. Nauchno-issledovatel'skiy institut plasticheskikh mass.
(Tin organic compounds) (Polymers)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

S/020/60/135/004/023/037
B016/B062

AUTHOR: Kochkin, D. A.

TITLE: Organolead Methacrylates

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 4, pp. 857-859

TEXT: In continuation of his earlier papers (Refs. 1-3), the author studied the reactions of triphenyl plumbanol $(C_6H_5)_3PbOH$ and diphenyl plumbanone $(C_6H_5)_2PbO$ with methacrylic acid. He obtained a new compound, diphenyl plumbalene dimethacrylate $(C_6H_5)_2Pb(OOCC(CH_3)=(CH_2)_2$, as well as its polymers and copolymers. The synthesis is based upon the reaction, analogously to the organotin derivatives (Refs. 1-3):
$R_2SnO + 2CH_2 = C(CH_3)COOH \longrightarrow R_2Sn(OOCC(CH_3) = CH_2)_2$ (1), where Sn is replaced by Pb. The author found, however, that in the interaction between triphenyl plumbanol and methacrylic acid, no triphenyl plumbyl methacrylate, but only diphenyl plumbylene dimethacrylate was formed. He assumes that this is caused by the separation of a phenyl group of triphenyl plumbanol,

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

Organolead Methacrylates

S/020/60/135/004/023/037
B016/B062

which is replaced by a methacryl radical. By the example of nicotic acid, an analogous reaction was shown to take place between triaryl plumbanols and organic acids. Among the lead-containing methacrylates, diphenyl plumbylene dimethacrylate is the most stable. This monomer is polymerizable and forms copolymers with unsaturated compounds as, e. g., with methyl methacrylate. This copolymer is a transparent glassy substance with a softening point above 200°C. The author thanks M. F. Shostakovskiy, Corresponding Member, AS USSR, for his interest in the present work. There are 1 figure and 5 references: 4 Soviet and 1 US.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences USSR). Nauchno-issledovatel'skiy vitaminnyy institut (Scientific Research Institute of Vitamins)

PRESENTED: June 17, 1960, by N. N. Semenov, Academician

SUBMITTED: June 17, 1960

Card 2/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

37757
S/661/61/000/006/010/081
D205/D302

5.3700

AUTHOR: Kochkin, D. A.

TITLE: Direct synthesis of disilyl tetrachloroethane and disilyl dichloroethylene

SOURCE: Khimiya i prakticheskoye primeneniye kremneorganicheskikh soyedeniy; trudy konferentsii, no. 6, Doklady, diskussii resheniye. II Vses. konfer. po khimii i prakt. prim. kremneorg. soyed., Len., 1958. Leningrad. Izd-vo AN SSSR. 1961, 66-71

TEXT: From the interaction of Cl_3CCCl_3 with a Si-Cu alloy (80:20) at 360°C the following products were obtained: $Cl_2C{=}CCl_2$ (17.4% of the condensate), $Cl_3SiSiCl_3$, $Cl_3SiCCl{=}ClCSiCl_3$ (I) and Cl_3SiCCl_2 Cl_2CSiCl_3 (II). The content of the latter two compounds in the product is 2.0 - 2.5%. Other reaction products are silico-chloroform, $SiCl_4$, PhCl and Ph-Ph. The latter two are produced from benzene

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

used as a solvent, which is also involved in the reactions (I) and (II) are liquids which fume in air and are distilled without decomposition at atmospheric pressure. They are easily hydrolyzed with the formation of powdery non-melting polysiloxane compounds containing C-Cl bonds. They react with alcohols and Grignard reagents yielding alkoxy, aryloxy and alkyl derivatives. The properties of some of the synthesized compounds are tabulated. Ya. L. Levkov and L. V. Musatova participated in the work. A. L. Klebanskiy (VNIISK, Leningrad), S. A. Golubtsov (Moscow), M. G. Voronkov (IKhS AN SSSR, Leningrad) and R. Kh. Freydlina (INEOS AN SSSR, Moscow) took part in the discussion which followed. There are 1 figure and 1 table.

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

KOCHKIN, D.A.; VEREMIKINA, S.G.

Elementary organic vitamin derivatives. Report No.3: Tin and lead organic derivatives of α - and β-alanine, of uracilacetic, and of uracilcarboxylic (orotic) acids. Trudy VNIVI 8:39-46 '61. (MIRA 14:9)

(Alanine) (Acetic acid) (Orotic acid)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

KOCHKIN, D.A.; GOLYSHEVA, M.G.

Metal organic vitamin derivatives. Trudy VNIVI 8:82-86 '61. (MIRA 14:9)

1. Laboratoriya vitaminov gruppy B i laboratoriya po pereabotke rastitel'nogo syr'ya Vsesoyuznogo nauchno-issledovatel'skogo vitaminnogo instituta.
(Tin compounds) (Lead compounds)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

KOCHKIN, D.A.; CHEKMAREVA, I.B.

Organotin and organolead derivatives of nicotinic acid. Zhur.ob.khim. 31 no.9:3010-3013 S '61. (MIRA 14:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.
(Nicotinic acid) (Organometallic compounds)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

27909

S/079/61/031/010/009/010
D228/D302

5.3700

AUTHORS: Andrianov, K.A., Astakhin, V.V., Kochkin, D.A., and Sukhanova, I.V.

TITLE: Reaction of hexamethyldisilazane with the halides of aluminum and titanium

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 10, 1961, 3410-3411

TEXT: Previous work has shown the possibility of obtaining chlorosilane from aminosilane and HCl, so the authors studied and devised a method of synthesizing trimethylchloro-, trimethylbromo- and trimethyliodosilane in accordance with the scheme:

$$[(CH_3)_3Si]_2NH + AlX_3 \rightarrow 2(CH_3)_3SiX + NHAlX$$

$$[(CH_3)_3Si]_2NH + TiCl_4 \rightarrow 2(CH_3)_3SiCl + NHTiCl_2$$

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

27909
S/079/61/031/010/009/010
D228/D302

Reaction of hexamethyldisilazane...

Trimethylchlorosilane was prepared by distilling hexamethyldisilazane with $TiCl_4$ (yield 88%) or $AlCl_3$ (yield 73.7%). Substituting $AlBr_3$ for $AlCl_3$ the same procedure was also used to obtain trimethylbromosilane (yield 76.1%). In the case of trimethyliodosilane (yield 70%) hexamethyldisilazane was similarly reacted with powdered Al, benzene and crystalline I_2. In conclusion it is stated that this technique is suitable for the general preparation of compounds of the type R_3SiX. There are 2 non-Soviet-bloc references.

ASSOCIATION: Vsesoyuznyy elektrotekhnicheskiy institut im. V.I. Lenina (All-Union Electrotechnical Institute im. V.I. Lenin)

SUBMITTED: October 31, 1960

Card 2/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

27.5300
27.1100 also 2209

28651
S/020/61/139/006/018/022
B103/B101

AUTHORS: Kochkin, D. A., Verenikina, S. G., and Chekmareva, I. B.

TITLE: Organotin and organolead derivatives of some nitrogen-containing acids

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 139, no. 6, 1961, 1375-1378

TEXT: The authors synthesized organotin and organolead esters of methacrylic acid (D. A. Kochkin, V. N. Kotrelev, G. N. Kuznetsova et al. Vysokomolekul. soyed., 1, 1507 (1959); D. A. Kochkin, DAN, 135, 857 (1960); author's certificate 133224 August 25, 1960), which they called organotin and organolead methacrylates of the general structure $R_3SnOOCC(CH_3)=CH_2$, $R_2Sn(OOCC(CH_3)=CH_2)_2$, $(C_6H_5)_2Pb[OOCC(CH_3)=CH_2]_2$. They also obtained polymers and copolymers with several unsaturated monomers. It was found that orotic acid (4-uracyl carboxylic acid, a vitamin of the B_{13} group) participates in the formation of nucleic acid, and is an important factor furthering bacterial growth. Orotic acid is, however, hardly known. It

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

was synthesized by a method of O. E. Hilbert (see below); the synthesis is described here. Instead of the potassium ferricyanide, the authors used a mixture of sodium bichromate and sulfuric acid, which facilitated the synthesis considerably. In addition, the authors synthesized organotin and organolead esters of the following amino acids: α-alanine, p-amino benzoic acid, pyridic acids (nicotic and isocinchomeronic acids) and pyrimidic acids (orotic and uracyl acetic acid). It was found that some of these substances have a germicidal effect on several micro-organisms. The synthesis was performed as follows:

$$R_3MOH + R'COOH \rightarrow R_3MOOCR' + H_2O;$$
$$2R_3MOH + HOOCR''COOH \rightarrow R_3MOOCR''COOMR_3 + 2H_2O;$$
$$R_2MO + 2R'COOH \rightarrow R_2M(OOCR')_2 + H_2O;$$
$$R_2MOMR_2 + 2R'COOH \rightarrow 2R_2MOOCR' + H_2O, \text{ rde } M = Sn, Pb.$$

where M = Sn, Pb. The reaction of triphenyl plumbanol with nicotic and uracyl acetic acids proceeds in another way. It forms diphenyl plumbylene esters of the corresponding acids. This is similar to the interaction with methacrylic acid. In this reaction, a phenyl group is split off:

$$(C_6H_5)_3PbOH + 2C_5H_4NCOOH \rightarrow (C_6H_5)_2Pb(OOCC_5H_4N)_2 + C_6H_6 + H_2O.$$
$$(C_6H_5)_3PbOH + 2\ HOOCCH_2C_4H_3N_2O_2 \rightarrow (C_6H_5)_2Pb(OOCCH_2C_4H_3N_2O_2)_2 + C_6H_6 + H_2O.$$

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

28651
S/020/61/139/006/018/022
B103/B101

Organotin and organolead derivatives...

The bacteriocidal action of organotin and organolead compounds depends on the nature of the alkoxy groups in the molecule. The derivatives of nicotic acid and alanine, for example, suppress the growth of such cultures as Escherichia coli, Streptococcus faecalis, and Lactobacillus casei even in low concentrations. All the organotin and organolead compounds synthesized are crystalline, difficultly soluble in water, and readily soluble in organic solvents. Trimethyl-stannyl esters of α-alanine and orotic acid are soluble in water, but difficultly soluble in organic solvents. Diisobutyl stannone, $(iso\text{-}C_4H_9)_2SnO$, is a white, amorphous, non-fusible substance decomposing when heated in the flame. It is unsoluble in water, difficultly soluble in ether, and soluble in alcohol, acetone, and chloroform. It was used to synthesize No. 45 (cf. Table 1) and obtained by hydrolysis of triisobutyl bromostannane: $(iso\text{-}C_4H_9)_3SnBr$.

There are 1 table and 8 references: 6 Soviet and 2 non-Soviet. The reference to the English-language publication reads as follows: Ref. 5: G. E. Hilbert, J. Am. Chem. Soc., 54, 2082 (1932).

Card 3/4

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

28651
S/020/61/139/006/018/022
B103/B101

Organotin and organolead derivatives...

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut (All-Union Scientific Research Institute of Vitamins)

PRESENTED: March 15, 1961, by N. N. Semenov, Academician

SUBMITTED: March 8, 1961

Legend to Table 1: (1) no. of preparation; (2) compound; (3) melting point; (4) yield; (5) analysis; (6) found; (7) calculated; (a) n-; (b) iso-.

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APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

ANDRIANOV, K.A.; ASTAKHIN, V.V.; KOCHKIN, D.A.

Reaction of hexaalkydisilasanes with aluminum and boron halides.
Izv. AN SSSR.Otd.khim.nauk no.10:1852-1853 O '62 (MIRA 15:10)

1. Institut elementoorganicheskikh soyedineniy i Elektrotekhnicheskiy institut im. V.I.Lenina.
(Silasanes) (Aluminum halides) (Boron halides)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

43994
S/079/62/032/012/007/008
D424/D307

5.3700

AUTHORS: Kochkin, D.A. and Chirgadze, Yu.N.

TITLE: Synthesis and ir spectra of some oxygen-containing organotin and organosilicotin compounds

PERIODICAL: Zhurnal obshchey khimii, v. 32, no. 12, 1962, 4007-4012

TEXT: The synthesis and properties of the following are described: $(CH_3)(\underline{iso}\text{-}C_4H_9)(C_6H_5)SiOSn(\underline{iso}\text{-}C_4H_9)_3$, $[(\underline{iso}\text{-}C_4H_9)_3SnO]_2Si(C_2H_5)_2$, $[(CH_3)(\underline{iso}\text{-}C_4H_9)(C_6H_5)SiO]_2Sn(\underline{n}\text{-}C_4H_9)_2$. The ir spectra of these compounds and of the hexaalkylstannoxides $R_3SnOSnR_3$ where R = $\underline{iso}\text{-}C_4H_9$, $\underline{n}\text{-}C_7H_{15}$ and the dialkylstannones R_2SnO where R = C_2H_5, $\underline{n}\text{-}C_3H_7$, $\underline{iso}\text{-}C_5H_{11}$, $\underline{n}\text{-}C_7H_{15}$ are given in order to study the spectroscopic characteristics of the → SnO, → SiO-, and → SnOSi ← bonds. The organosilicotin compounds were synthesized, respectively, by the reaction of the appropriate hexaalkylstannoxide

Card 1/2

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

Synthesis and ir spectra ... S/079/62/032/012/007/008
D424/D307

with the appropriate silanol and silanediol and of the appropriate dialkylstannone with the appropriate silanol. By comparing the ir spectra of all these compounds and those of stannic oxide and tetra-iso-butylstannane, assignments of the main bands are made. The absorption frequency of the Sn—O bond in the Sn—O—Sn group is about 780 cm-1. In the Si—O—Sn group, the Sn—O frequency is lowered to 720 cm-1 and that of Si—O to 980 cm-1. In the case of the dialkylstannones, strong bands at 570 ± 5 and 415 ± 10 cm-1 are assigned to the Sn—O—Sn group, confirming their polymeric nature, $[R_2SnO]_x$. There are 3 figures and 1 table.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut (All-Union Scientific Research Vitamin Institute)

SUBMITTED: July 10, 1961

Card 2/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

AZERBAYEV, I.N.; KOCHKIN, D.A., kand.tekhn.nauk

Achievements and prospects of the chemistry of tin organic and lead organic compounds. Vest. AN Kazakh.SSR 19 no.10:18-26 O '63. (MIRA 17:1)

1. Chlen-korrespondent AN KazSSR (for Azerbayev).

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

L 13350-63 EWP(j)/EWT(c)/EWT(m)/BDS ASD Pc-4/Pr-4 RM/WW

ACCESSION NR: AP3002626

S/0079/63/033/006/1945/1951

AUTHOR: Kochkin, D. A.; Luk'yanova, L. V.; Reznikova, Ye. B.

TITLE: Investigations in the area of oxygen-containing organotin and organolead compounds. 3. Preparation and properties of stannanols, triphenylplumbanol, polydiphenylplumboxane and their derivatives

SOURCE: Zhurnal obshchey khimii, v. 33, no. 6, 1963, 1945-1951

TOPIC TAGS: oxygen-containing organotin, organolead compounds, stannanol, triphenylplumbanol, polydiphenylplumboxane, tetramethylstannane, trimethylbromostannane, triethylstannanol, hexaethyldistannoxane, dimethyethylchloromethylsilane, dimethylethylsilylpropanol, dimethylethylmagnesium-chloromethylsilane, dimethylethylsilyl triethylstannyl methane, triethylsiloxy triethylsiloxy triethylstannane, glycidoxy tributylstannane, triphenylmethacryloxyplumbane, polydiphenylplumboxane, hydrolysis, dehydration, IR spectrum

ABSTRACT: The following stannanols, stannoxanes, plumbanols and plumboxanes and derivatives were synthesized: tetramethylstannane, trimethylbromostannane, triethylstannanol, hexaethyldistannoxane, dimethyethylchloromethylsilane, dimethylethylmagnesium-chloromethylsilane, dimethylethylsilylpropanol, dimethylethylsilyl

Card 1/2

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

L 13350-63

ACCESSION NR: AP3002626

triethylstannyl methane, triethylsiloxy triethylstannane, glycidoxy tributylstannane, triphenylmethacryloxy-plumbane, polydiphenylplumboxane. The properties, especially hydrolysis, dehydration and product disproportionation, of these compounds were investigated; their IR spectra were obtained. "Yu. P. Novichenko took part in carrying out the syntheses." Orig. art. has: 3 figures, 5 equations.

ASSOCIATION: Vsesoyuzny*y nauchno-issledovatel'skiy vitaminny*y institut Ministerstva zdravookhraneniya SSSR (All-Union Scientific Research Vitamin Institute, Ministry of Public Health, SSSR)

SUBMITTED: 05Oct61 DATE ACQ: 20Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 016 OTHER: 010

Card 2/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

KOCHKIN, D.A.; VASHKOV, V.I.; DREMOVA, V.P.

Oxygen-containing organotin and organolead compounds. Part 4: Synthesis and insecticidal activity of stannanols and plumbanols, their acetates and methacrylates, hexaalkyldistannoxanes and polydialkyl(aryl)stannoxanes. Zhur.ob.khim. 34 no.1:325-328 Ja '64. (MIRA 17:3)

1. TSentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut Ministerstva zdravookhraneniya SSSR.

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

ACC NR: AP6013477 SOURCE CODE: UR/0374/66/000/002/0292/0295

AUTHOR: Zubov, P. I.; Sukhareva, L. A.; Grozinskaya, Z. P.; Krylova, L. M.; Kochkin, D. A.; Rzayev, Z. M.

ORG: Institute of Physical Chemistry, Academy of Sciences SSSR (Institut fizicheskoy khimii Akademii nauk SSSR)

TITLE: Study of the physicomechanical properties of styromal-base coatings

SOURCE: Mekhanika polimerov, no. 2, 1966, 292-295

TOPIC TAGS: polymer structure, protective coating, solid physical property, solid mechanical property, adhesion

ABSTRACT: A two-component system obtained by copolymerizing styrene with maleic anhydride in the proportion of 1:1 at 60°C without catalyst or solvent was studied. The mechanism of forming was investigated by studying the internal stresses, the structure of the coatings, and the strength and adhesion characteristics. Kinetic data on internal stresses showed that the forming process is practically complete after one hour of curing and that the limiting value of these stresses is independent of the conditions under which the coatings were formed. The effect of forming temperature on the structure was studied by IR spectroscopy. Coatings formed from acetone solutions were

UDC: 678:539.4019

Card 1/2

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

L 26116-66

ACC NR: AP6013477

3

found to have a weak adhesion to glass (6-7 kg/cm^2), but those formed from solutions of styromal in dimethylformamide had a higher adhesion (25 kg/cm^2). The elasticity of the coatings increased upon addition of triethylene glycol diester of methacrylic acid (TGM). An increase in the latter gradually lowered the physicomechanical characteristics of the coatings. Coatings most stable to the action of high temperatures were those obtained from solutions in dimethylformamide containing up to 20% TGM. Orig. art. has: 6 figures, 1 table.

SUB CODE: 07,11/ SUBM DATE: 21Jun65/ ORIG REF: 005/ OTH REF: 000

Card 2/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

L 44585-66 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6015668 (A) SOURCE CODE: UR/0413/66/000/009/0075/0075

INVENTOR: Zubov, P. I.; Kochkin, D. A.; Rzayev, Z. M.; Sukhareva, L. A.

ORG: none

31
B

TITLE: Method of obtaining copolymers. Class 39, No. 181289

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 9, 1966, 75

TOPIC TAGS: copolymer, styrene, ether, maleic anhydride, copolymerization, esterification, dehydration

ABSTRACT: An Author Certificate has been issued for a method of obtaining copolymers by esterification of styromal or maleic anhydride, with subsequent copolymerization of the ether obtained with styrene and esterification reagents. To obtain copolymers possessing bactericidal activity, tin or organolead hydroxyl-containing compounds or byproducts of their dehydration are used as esterifying reagents. [Translation] [NT]

SUB CODE: 11/ SUBM DATE: 15May64/

Card 1/1 UDC: 678.746.22-134.434.2:667.613:620.193.81

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

ACC NR: AP6034761 (N) SOURCE CODE: UR/0020/66/170/005/1189/1191

AUTHOR: Stroganov, N. S.; Kochkin, D. A.; Khobot'yev, V. G.; Kolosova, L. V.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Use of tin-organic compounds to combat plankton

SOURCE: AN SSSR. Doklady, v. 170, no. 5, 1966, 1189-1191

TOPIC TAGS: organotin compound, water purifying compound, fungicide

ABSTRACT: In view of the large cost of commercial water purification equipment by filtering, and in view of the absence of a universal chemical poison for plankton, the authors have tested the possible use of tin-organic compounds, especially trialkyl (allyl) substitutes, which have bactericidal, fungicidal, and insecticidal properties. This is the first published reference to the use of these compoinds for combatting plankton. The synthesized tin-organic compounds were $(CH_3)_3SnOH$, $(CH_3)_3SnOOCCH_3$, $(C_6H_5CH_2)_3SnOH$, and $(C_6H_5CH_2)_3SnCl$, and were tested on phytoplankton and zooplankton. The tests were made in accordance with a procedure described elsewhere (Zool. zhurn. AN SSSR v. 41, no. 1, 1962) and lasted on the average for 30 days. The results showed that even a concentration of 0.02 mg/l killed most of the phytoplankton, and decreased the birth rate of zooplankton by a factor of 3. Ionic tin ($SnCl_2$), tested for comparison, is much weaker and calls for a dose of 35 mg/l. It is proposed that tin-organic

Card 1/2

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

ACC NR: AP6034761

compounds are superior to mineral tin in that they exhibit a higher toxicity at much lower concentrations. This report was presented by Academician V. N. Shaposhnikov 10 March 1966. Orig. art. has: 2 figures and 2 tables.

SUB CODE: 06/ SUBM DATE: 03Mar66/ ORIG REF: 007/ OTH REF: 008

Card 2/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

KOCHKIN, G.B., arkhitektor

Preparing for the Builders' Day. Mul. tekh. inform. po stroi. 5 no.7:1-3 Jl '59. (MIRA 12:10)

1.Zaveduyushchiy otdelom stroitel'stva i stroitel'nykh materialov Leningradskogo oblastnogo komiteta Kommunisticheskoy partii Sovetskogo Soyuza.

(Leningrad--Construction industry)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

KOCHKIN, G.B.

Petrological and geochemical characteristics of some alaskite granites of the Uymen' depression (Gornyy Altai). Geokhimiia no.1:76-78 '60. (MIRA 13:6)
(Turochak region--Alaskite)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

ANIKIYEV, K.A.; VYSOKOOSTROVSKAYA, Ye.B.; KOCHKIN, G.B.; OPARIN, O.M.

Uranium and thorium in igneous rocks of the Uymen' Depression (Gornyy Altai). Inform.sbor. VSEGEI no.22:41-54 '59. (MIRA 14:12)

(Al Tai Mountains--Uranium)
(Al Tai Mountains--Thorium)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

ANIKIYEV, K.A.; KOCHKIN, G.B.

Petrolchemical characteristics of Devonian effusives in the Uymen' Depression (Gornyy Altai). Geol.i geofiz. no.12:63-69 '61. (MIRA 15:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut, Leningrad.

(Uymen' Depression—Rocks, Igneous)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

KOCHKIN, G.B.

Some new data on the Terekta metamorfic complex (Gornyy Altai). Inform. sbor.VSEGEI no.53:91-99 '62. (MIRA 17:1)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

KOCHKIN, G.B.

Some characteristics of the distribution of uranium and thorium in the rocks of the Terekta metamorphic complex (Gornyy Altai). Trudy VSEGEI 95:149-153 '63. (MIRA 17:11)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

KOCHKIN, I., mayor

Collapsible spade for a sighting device. . Voen. vest. 41 no.11: 120 N '61. (MIRA 16:11)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

COUNTRY : USSR
CATEGORY : M-4

ABS. JOUR. : RZBiol., No. 14, 1959, No. 97015

AUTHOR : Kochkin, I. P.
INST. :
TITLE : Regional Varieties for Non-Chernozem Belt.

ORIG. PUB. : Kukuruza, 1958, No 3, 35-37

ABSTRACT : Of the 12 varieties and hybrids of corn the following 4 are most widely used: Voronezhskaya 76, Voronezhskaya 80 (early midseason), Grusievskaya (mid-season), Sterling (late midseason). Data are presented concerning the yields of the regional varieties according to region.

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

KOCHKIN, I.F., agronom

Sorgo in arid areas. Zemledelie 25 no.11:42-46 N '63.
(MIRA 17:2)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

KOCHKIN, Ivan Fedorovich; ZAGORSKIY, G., red.; PAVLOVA, S., tekhn. red.

[Preparing seeds for sowing] Podgotovka semian k posevu. Moskva, Mosk. rabochii, 1961. 21 p. (MIRA 14:7)
(Corn (Maize))

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

KOCHKIN, I.N.

Using textolite bushings in suspended bearings of driving spindles. Sbor.rats.predl.vnedr.v proizv. no.1:25 '61. (MIRA 14:7)

1. Azerbaydzhanskiy truboprokatnyy zavod.
(Plastic bearings)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

POZIN, A.A.; TOKAREVA, T.Ye.; KOCHKIN, K.I.; PYATETSKAYA-SHAPIRO, I.P.

Mechanized method for the manufacture of warm rubber boots. Kauch. i res. 24 no.4:32-35 Ap '65. (MIRA 18:5)

1. Nauchno-issledovatel'skiy institut rezinovykh i lateksnykh izdeliy.

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

SHOSTAKOVSKIY, M.F.; ANDRIANOV, K.A., chlen-korrespondent; SHIKHIYEV, I.A.; KOCHKIN, L.A.; KAZANSKIY, B.A., akademik.

Investigation in the field of synthesis and conversions of oxygen-containing silicon organic compounds. Synthesis of methyl-, ethyl- and isopropyl-triethylsilane acetals. Dokl.AN SSSR 93 no.4:681-683 D '53. (MLRA 6:11)

1. Akademiya nauk SSSR (for Andrianov and Kazanskiy). 2. Institut organicheskoy khimii im. N.D.Zelinskogo Akademii nauk SSSR (for Shostakovskiy, Andrianov, Shikhiyev and Kochkin).
(Acetals) (Silicon organic compounds)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

KOCHKIN, M. A.

USSR/Agriculture

Card 1/1 : Pub. 124 - 22/29

Authors : Kochkin, M. A., Cand. of Agricult. Sc.

Title : Introduction of scientific achievements into practical agriculture

Periodical : Vest. AN SSSR 6, 90-93, June 1954

Abstract : Minutes of scientific meeting held at the Crimean Branch of the Academy of Sciences USSR in Simferopol, at which closer cooperation between science and practical agriculture was emphasized.

Institution : ...

Submitted : ...

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

Name: KOCHKIN, Mikhail Andreyevich

Dissertation: Soils, forests, and climate of the Gornyy [mountain] Crimea and methods for their rational utilization

Degree: Doc Agr Sci

Affiliation: Department of Forest Amelioration and Planting of Greenery, Crimean Affiliate of the Acad Sci UkSSR

Defense Date, Place: 12 Apr 56, Council of Soil Inst imeni Dokuchayev, Acad Sci USSR

Certification Date: 15 Jun 57

Source: BMVO 16/57

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

DOLGILEVICH, M.I.; KOCHKIN, M.A.; SEVAST'YANOV, N.F.

Composition and some properties of humus in brown soils in Crimea. Pochvovedenie no.2:92-99 F '62. (MIRA 15:3)

1. Ukrainskiy nauchno-issledovatel'skiy institut pochvovedeniya.
(Crimea--Soils) (Humus)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

KOCHKIN, M.A.; DONYUSHKIN, V.I.

Methods of studying eroded soils. Pochvovedenie no.12:88-96 D '63. (MIRA 17:11)

1. Gosudarstvennyy Nikitskiy botanicheskiy sad, Yalta.

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

KOCHKIN, M.A., prof., doktor sel'skokhozyaystvennykh nauk

The 150th anniversary of the Nikita State Botanical Garden.
Agrobiologiia no.5:777-784 S-O '62. (MIRA 15:11)

1. Gosudarstvennyy Nikitskiy botanicheskiy sad, Yalta.
(Nikita (Crimea)--Botanical gardens)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

KOCHKIN, M.A., prof., doktor sel'skokhoz.nauk

The 150th anniversary of the Nikita Botanical Garden. Zemledelie 24 no.11:26-33 N '62. (MIRA 16:1)

1. Direktor Nikitskogo botanicheskogo sada.
(Nikita (Crimea)--Botanical gardens)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

AUTHORS: Nikitin, P. Z., Engineer, Kochkin, M. S., Engineer 105-58-3-28/31

TITLE: Transactions of the Conference on Glass Insulators (Soveshchaniye po steklyannym izolyatoram)

PERIODICAL: Elektrichestvo, 1958, Nr 3, pp. 93-94 (USSR)

ABSTRACT: A conference on production problems of glass insulators was initiated by the State Scientific and Technical Committee at the Council of Ministers of the USSR, the "Gosplan" of the USSR and the Ministry for Electric Power Stations of the USSR in December 1957. Lectures were held by: V.K. Kokhushov (All Union Institute for Electrical Engineering imeni Lenin), I.D. Tykachinskiy (VNIIS) and N.A. Nikolayev (L'vov Polytechnical Institute). The conference confirmed the existence of a number of valuable research works and constructions. Analyses in the laboratories and practical testing showed, that glass poor in alkali as well as hardened alkali glass can be utilized for high-voltage glass suspension insulators. A glass poor in alkali was developed with good insulation properties and a high thermal and chemical strength. This increase of the dielectric and mechanical properties of these insulators

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

KOCHKIN, M.S., insh.; NIKITIN, P.Z., insh.

Conference on the manufacturing of glass insulators. Elek.sta.29 no.5: 91-92 My '58. (MIRA 12:3)
(Electric insulators and insulation)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

MARINCHENKO, P., inzhener-polkovnik; VIGANT, V., inzhener-podpolkovnik; YEGOROV, M., podpolkovnik tekhnicheskoy slusyby; KOCHKIN, P., inzhener-mayor

Mechanizing the cleaning of reservoirs and oil tankers. Tyl i snab. Sov. Voor. Sil 21 no.9:92-94 S '61. (MIRA 14:12)
(Tank vessels--Cleaning)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

AKSENOV, Ya.V.; YEGOROV, M.G.; KOCHKIN, P.I.

Newly designed steam heaters for tanks. Mash. i neft. obor. no.7:11-12 '63. (MIRA 17:1)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

KOCHKIN, P. V.

Mathematics - Study and Teaching

Work of the Section for Teachers of Mathematics in 5th-7th Grades during the 6th Conference for Stalingrad City and Province. Mat. v shkole, no. 3, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 1953, Uncl.
2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

Koshkin, I. V.

Teachers

Observing "a day dedicated to young teachers." Mat. v shkole No. 4, 1952.

9. Monthly List of Russian Accessions, Library of Congress, September 1952, Uncl.

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

1. KOCHKIN, P. V.

2. USSR (600)

4. Stalingrad Province--Teachers, Training of

7. Conducting courses for the improvement of teachers' qualifications, at the Stalingrad Provincial Institute for the improvement of teachers during the 1951/1952 year, Mat. v. shkole, No. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April, 1953, Uncl.

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

KOCHKIN, S.A.

Review of Applied Mycology

KOCHKIN (S. A.). The epidemics of yellow rust in winter Wheat in the Issyk Kul Basin.—*Selection & Seed Growing, 1949*, 10, pp. 87-89, 1949. [Russian. Abs. in *Plant Breed. Abstr.*, 20, 2, p. 281, 1950.]

Winter wheat varieties bred at the Kirghizian Breeding Station were much less susceptible to yellow rust [*Puccinia glumarum*: C.M.I. map No. 97] in the Kirghizian Republic than introduced varieties. *Erythrospermum* 9, which was made a standard in 1947, yielded 3-8 c. [centner] more per ha. than the previous standard Ukrainka [see above, p. 105] in the average season, and 12-6 to 17-2 c. per ha. more in seasons when rust epidemics occurred. The new lines *erythrospermum* 72, 118, 132, and 4656 showed promise in trials.

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

GLAZOV, A.A.; SHVABE, Ye.; KOCHKIN, V.A.

A model of the high frequency system of the ring-shaped proton synchrotron. Nukleonika 7 no.7/8:455-463 '62.

1. Ob"yedinennyy institut yadernykh issledovaniy, Dubna, Laboratoriya yadernykh problem.

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

GLAZOV, A.A.; KOCHKIN, V.A.; ONISHCHENKO, L.M.; SHVABE, E.

High frequency system for proton accelerators built as cavity resonators. Nukleonika 8 no.2:89-100 '63.

1. Ob"yedinennyy institut yadernykh issledovaniy, Dubna.

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

ACCESSION NR: AP4042004 S/0057/64/034/007/1272/1284

AUTHOR: Glazov, A.A.; Kochkin, V.A.; Novikov, D.L.; Onishchenko, L.N.

TITLE: A high frequency resonant cavity for accelerating protons to 1 MeV

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.7, 1964, 1272-1284

TOPIC TAGS: particle accelerator, proton accelerator, injector

ABSTRACT: A re-entrant resonant cavity is described which, when operated as a single stage proton accelerator, produces 20 microsec 10 mA pulses of approximately 1 MeV protons at a repetition rate of 50 sec^{-1}. The accelerator was developed during the years 1960 to 1962 at the Joint Institute for Nuclear Research as an injector for the phasotron described elsewhere by D.P.Vasilevskaya and 13 other authors (Preprint OIYaI R-930, Dubna, 1962; Nucl.Instr.21,85,1963). The accelerator consisted of a 1 m diameter 1 m long steel cylinder with 30 cm diameter copper cylinders projecting radially inward from each end to within 2 cm of the center. One of these cylinders was movable in the axial direction for adjustment of the 4 cm accelerating gap, and the other contained the cold cathode Penning discharge ion source. The interior of the cavity was covered with polished copper; a Q of 14 000 was thereby achieved.

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ACCESSION NR: AP4042004

The cavity was excited by a self-excited grounded grid oscillator of which the cavity was the frequency determining element. Difficulty was experienced with resonant reflex discharge in the accelerating gap at an amplitude of about 1000 V. The cavity was therefore pre-excited at each pulse by a separately excited oscillator, and the self-excited oscillator took over only after the resonant discharge region was past. When the instrument was operating under presumably typical conditions, the beam was 3 cm in diameter and contained protons with energies from 0.7 to 1.1 MeV with half the protons in the energy range from 0.83 to 0.95 MeV. The possibility of employing a buncher between the ion source and the accelerator to obtain a more nearly monoenergetic beam is discussed, and it is concluded that this would be feasible. It is pointed out that although the accelerator was designed as an injector for a phasotron, it would be suitable as a primary accelerator for low energy nuclear research. For this purpose it has over electrostatic accelerators the advantages of compactness, low cost, and high pulse current. "In conclusion, the authors thank V.P.Dmitriyevskiy for valuable advice in planning the work and for discussing the results, Ye.Shvabe and M.Kummyak for assistance in developing certain critical parts of the accelerator, and also comrades V.V.Kudryashov, V.A.Akkuratov, P.T.Rybakov and M.G.Akimov for participating in the assembly of the electronic accessories and the construction of the accelerator." Orig.art.has: 17 formulas and 8 fi-

Card
2/3

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

ACCESSION NR: AP4042004

gures.

ASSOCIATION: none

SUBMITTED: 18Sep63 ENCL: 00

SUB CODE: MP NR REF SOV: 010 OTHER: 006

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L 4230-66 EWT(m)/EPA(w)-2/EWA(m)-2 IJP(c) OS

ACCESSION NR: AT5007967 S/0000/64/000/000/0946/0949

36
25
BT

AUTHOR: Glazov, A. A.; Kochkin, V. A.; Ogishchenko, L. M.; Rovfe, I. M.; Semenov, M. M.; Tuzov, I. V.; Shvabe, Ye.

TITLE: High-frequency system of the 700-Mev cyclotron 19

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963. Trudy. Moscow, Atomizdat, 1964, 946-949

TOPIC TAGS: high energy accelerator, cyclotron, proton accelerator

ABSTRACT: The accelerating system of the 700-Mev cyclotron must ensure a regime of continuous proton acceleration for a current at maximum radius up to 1 milliampere. It is necessary here to have the maximum possible collection of energy of the accelerated protons per revolution, with the restriction that the power of the high-frequency supply to the accelerating electrodes be technically possible and economically admissible. The configuration and structure of the region where the particle acceleration occurs and the design of the accelerator electromagnet are the determining factors in the selection of the scheme for the accelerating system. The small height of the acceleration region, the absence of gap variation accord-

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"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520007-5

L 4230-66
ACCESSION NR: AT5007967

ing to azimuth, and insignificant variation according to radius ($2h_{min}$=146 mm, $2h_{max}$=220.4 mm) with maximum gap in the middle radii are the special features of the accelerator under consideration; namely, a high-field machine with small variation of the magnetic field strength and large spiral. A similar structure for the operating zone excludes the use of simple bulk resonators as accelerating systems even during operation at multiple frequencies of considerable multiplicity, because the vertical dimension of the resonator must amount to about one half of the wavelength of the accelerating voltage, and the period of revolution of a proton in the cyclotron field is 83.3 nanosecond ($f = 1/T = 12$ megahertz). It is also practically impossible to use a multi-electrode (three or more) accelerating system operating at multiple frequencies in the case of an effectively structured region where the acceleration of the protons occur. Even for operations at a frequency equal to twice the frequency of proton revolution, the radius of the accelerator turns out to be greater than a quarter of the wavelength of the accelerating voltage. Moreover it is hardly technically feasible to create a cantilever design more than three meters with supporting elements arranged in the small interpole gap, with rigid requirements upon the constancy and magnitude of the gap between the accelerating electrode and the chamber. A two-dee accelerating system with dees in

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which the proton flight angle is close to 180° can be realized by various methods. The Joint Institute of Nuclear Research and the Scientific Research Institute of Electrophysical Apparatus have investigated theoretically and experimentally modifications of the accelerating system with semicircular dees, which are closed in a small part of the arch near the axis of symmetry, dees that are part of the homogeneous rectangular line, and dees that are part of the rectangular line with variable wave resistance. Of all the considered possibilities of accelerating system design, the accelerating system in the form of the rectangular line with increased wave resistance outside the gap of the electromagnet possesses the optimum characteristics from the viewpoint of the magnitude of the losses, excitation, and realization of the design. The accelerated system chosen is shown in the present report to satisfy the requirements imposed upon it. The radio-engineering and mechanical designs carried out at the mentioned two institutes and the modelling of the various accelerating system elements point to the possibility of realizing its design and construction and to the expediency of selecting the indicated scheme and principal parameters. Orig. art. has: 3 figures.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy, Dubna (Joint Institute of Nuclear Research)

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TSEFT, A.L.; RUMYANTSEV, Yu.V.; ZHITENEVA, O.M.; KOCHKIN, V.P.

Extraction of selenium and tellurium in the treatment of copper and copper-nickel slimes. Trudy Vost.-Sib.fil. AN SSSR no.25:52-59 '60. (MIRA 13:9)

(Selenium) (Tellurium)

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RUMYANTSEV, Yu.V.; SHITENEVA, G.M.; KOCHKIN, V.P.

Volatility of indium sulfide. Trudy Vost.-Sib.fil. AN SSSR no.25: 110-116 '60. (MIRA 13:9)

(Indium sulfide)

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