USSR

UDC 666.113.431.47.32-31.28

BLINOV, V. A., UDOVENKO, N. G., NIKULIN, V. KH., PRUSAKOVA, L. M., SOKOLINSKIY, A. G., ORLOV, V. N., VYSOTSKAYA, Z. I., and CHERNYSHEV, A. V.

"Glass for Ultrasonic Delay Lines"

USSR Author's Certificate No 366156, Filed 26 Jun 70, Published 16 Jan 73 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7, Mar (a) 73, Claim No 1453164/29-33)

Translation: A glass for ultrasonic delay lines, including SiO_2, ZnO, BaO, K_2O, is distinguished by the fact that, in order to obtain stable acoustic properties it contains the above components in the following amounts, weight %: SiO_2 49-65; ZnO 5-25, BaO 10.5-30; K_2O 6-25, and furthermore Sb_2O_3 0.05-3.

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USSR

UDC 662.75:662.61

BLINOV, V. I., LUSHPA, A. I., KHAYLOV, V. M., and KHUDYAKOV, G. N.

"Burning Rich Kerosene-Air Mixtures in a Tunnel-Type Combustion Chamber"

Moscow, Goreniye i vzryv -- sb. (Combustion and Detonation -- Collection of Works), Nauka Publishing House, 1972, pp 416-420 (from Referativnyy Zhurnal -- Teploenergetika, No 3, 1973, Abstract No 3T71)

Translation: The authors present the results of experimental research in the effect of the excess air ratio ($\alpha = 1.0-0.3$), the air temperature ($T_a = 0-1,000^\circ C$), and the length of the combustion chamber (0.5-0.2 meters) on the degree of approximation of the mixture and the combustion products' parameters to their equilibrium values in a chamber with an internal diameter of 100 mm and at a pressure of 1.1 kg/cm^2. As the values of α and T_a are reduced, the difference between the experimental and theoretical parameters increases, while the curves showing the change in the experimental data along the length of the chamber have a greater slope. The authors show that the process of achieving an equilibrium state is limited by the heterogeneous combustion of the solid carbon given off during the thermal decomposition of the kerosene in the initial combustion zone. (4 illustrations; 5 bibliog. ref.)

1/1

USSR

UDC 629.7.036.3:536.46

BLINOV, V. I., LUSHPA, A. I., KHAYLOV, V. M., and KHUDYAKOV, G. N.

"The Combustion of Rich Kerosene-Air Mixtures in a Tunnel-Type Chamber"

Moscow, Goreniye i Vzryv--Sbornik (Combustion and Explosion--Collection of Works), Nauka, 1972, pp 416-420 (from Referativnyy Zhurnal--Aviatsionnyye i Raketnyye Dvigateli, No 2, 1973, Abstract No 2.34.26. Resume)

Translation: Results are presented of an experimental investigation of the influence of the air-excess coefficient ($\alpha = 1.0$ -- 1.3), the air temperature ($T_{air} = 0$ -- $1000^{\circ}C$), and the combustion-chamber length (0.5--2.0 m) upon the degree of approximation of the composition and parameters of the combustion products to their equilibrium values in a chamber with an inner diameter of 100 mm at a pressure of 1.1 absolute atmospheres. The result is obtained that as α and T_{air} decrease, the difference between the experimental and theoretical parameters increases, and the curves of change of the experimental data with respect to the chamber length become flatter. It is shown that the process of attainment of the equilibrium state is limited by the heterogeneous combustion of solid carbon escaping during the thermal decomposition of kerosene in the initial zone of combustion. 4 figures. 5 references.

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1/2 013 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--AUTOMATIC STRAIGHTENING AND CUTTING MACHINE -U-

AUTHOR-(05)-~~BLINOV, V.~~P., YASINSKIY, YU.G., POLYARIN, YU.N., CHEREPANOV, YU.S., NAZAROV, V.A.
COUNTRY OF INFO--USSR

B

SOURCE--U.S.S.R. 238517
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI NO 10
DATE PUBLISHED--31JUL70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--PATENT, AUTOMATIC CONTROL SYSTEM, CUTTING TOOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/0836 STEP NO--UR/0482/69/000/000/0000/0000

CIRC ACCESSION NO--AA0114932
UNCLASSIFIED

USSR UDC 621.396.267:629.123.053

FRIDMAN, V. Ts., MALYSHEV, V. M., BLINOV, V. V.

"The 'Kivach-1' and 'Kivach-2' Marine Navigational Radar Systems"

Sudovyye navigatsionnyye radiolokatsionnyye stantsii "Kivach-1" i "Kivach-2" (cf. English above.), Moscow, "Pishch. prom-st'", 1971, 168 pp, ill. 75 k. (from RZh-Radiotekhnika, No 7, Jul 71, Abstract No 7G20 K)

Translation: The book contains information on the principles of design, on the operational and technical characteristics, construction and working principles of the "Kivach-1" and "Kivach-2" radar installations. The wiring connections, and the functional circuit of the radar installations are described together with schematic diagrams and the construction of the instruments. Rules are given for regulating and adjusting the radar installations on board the ship, day-to-day operation, technical servicing, and replacement of the units and modules of the installations. The distinctive features of the image on the screen are discussed, and recommendations are given on controlling and monitoring the operating condition of the station. Forty-seven illustrations, twenty-five tables, bibliography of thirteen titles. Annotation.

1/1

2/2 013 UNCLASSIFIED PROCESSING DATE--09OCT70
CIRC ACCESSION NO--AA0114932
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AUTOMATIC STRAIGHTENING AND CUT[illegible] CONTAINS CUTTING MACHANISMS 1 AND 2 WITH MOBILE BLADES, MECHANISMS FOR STRAIGHTENING, ROD DELIVERY AND REMOVAL OF CUT OFF DETAILS. IN ORDER TO INCREASE EFFICIENCY WHEN FIXING IT AFTER THE PRESS WHICH PERFORMS SIMULTANEOUS PRESSING OF A ROW OF PARALLEL RODS, THE MACHINE HAS SEVERAL MECHANISMS FOR STRAIGHTENING, DELIVERY, CUTTING AND REMOVAL OF CUT OFF DETAILS, SITUATED IN PARALLEL. THE MECHANISMS ENABLE THE MOVEMENT OF THE DETAILS TO A VIBROPLATFORM (16) WHICH IS SITUATED UNDER THE MECHANISMS. THE VIBRO PLATFORM HAS A DEBALANCING DRIVE (18) AND HAS TWO PAIRS OF INCLINED GUIDES WHICH ARE SITUATED ONE ABOVE THE OTHER. IN THE CLEARANCE BETWEEN THE UPPER GUIDES WHICH FORM A HOPPER, A TURNING SLIDE IS FIXED. THE SLIDE HAS TWO FIXED POSITIONS AND DIVIDES THE DETAILS INTO TWO STREAMS WITH THE HELP OF THE LOWER GUIDES. THE MOBILE BLADE (7) OF THE CUTTING MECHANISM (1) IS FIXED ON A COUPLING ROD (11) WHICH PERFORMS REVERSE FORWARD MOTION AND IS AFFECTED BY A SPRING (12). THE SPRING CREATES ADDITIONAL EFFORT DURING CUTTING AND PROVIDES A REDUCTION IN INERTIAL FORCES DURING THE REVERSE STROKE.
FACILITY: TSENTRAL'NYY NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT TARY I UPAKOVKI.

1/2 025 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--IMMEDIATE AND LONG TERM RESULTS OF SPLENECTOMY IN HEMOLYTIC ANEMIA
-U-

AUTHOR-(04)-SENCHILO, YE.A., BLINOVA, A.I., KURALEVA, V.V., ABDULKADYROVA,
A.S.

COUNTRY OF INFO--USSR

B

SOURCE--SOV MED 33(1): 72-77. 1970

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANEMIA, SURGERY, SPLEEN, HORMONE, CORTICOSTEROID, TEST,
HEMOLYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0304 STEP NO--UR/0399/70/033/001/0072/0077

CIRC ACCESSION NO--AP0135799

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE---11DEC70
CIRC ACCESSION NO--AP0135799

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPLENECTOMY WAS PERFORMED IN 55 PATIENTS WITH HEMOLYTIC ANEMIA, AND IN 41 IT WAS DONE FOR CONGENITAL MICROSPHEROCYTIC HEMOLYTIC ANEMIA WITH GOOD IMMEDIATE OPERATIVE RESULTS. IN 11 OF 14 PATIENTS WITH ACQUIRED AUTOIMMUNE FORM OF HEMOLYTIC ANEMIA IMMEDIATE RESULTS OF THE OPERATION WERE SATISFACTORY. REMOTE OUTCOMES OF SPLENECTOMY WERE STUDIED IN 40 PATIENTS. FOLLOWING SPLENECTOMY CLINICAL RECOVERY IN PATIENTS WITH CONGENITAL HEMOLYTIC ANEMIA OCCURRED IN 29 OUT OF 30 CASES. IN INSTANCES OF ACQUIRED AUTOIMMUNE HEMOLYTIC ANEMIA SPLENECTOMY HELPED TO IMPROVE THE CONDITION OF THE PATIENTS, WHILE SOME OF THEM DEMONSTRATED COMPLETE CLINICAL RECOVERY. MAINTENANCE THERAPY WITH CORTICOSTEROID HORMONES IS INDICATED POSTOPERATIVELY IN PATIENTS WITH ACQUIRED AUTOIMMUNE FORM OF HEMOLYTIC ANEMIA PRESENTING SYMPTOMS OF HEMOLYSIS AND CONTINUED POSITIVE COOMB'S TEST.

FACILITY: CLIN. SURG. HEMATOL., LENINGRAD RES. INST. HEMATOL. BLOOD TRANSFUS., LENINGRAD, USSR.

UNCLASSIFIED

1/3 024 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--CONDITIONS FOR PRODUCTION AND ISOLATION OF VALINOMYCIN, A REGULATOR OF CELL MEMBRANE PERMEABILITY -U-

AUTHOR-(04)-SMIRNOVA, G.M., BLINOVA, I.N., KOLODITSKAYA, T.A., KHOKHLOV, A.S.

B

COUNTRY OF INFO--USSR

SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 5, PP 387-392

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTIBIOTIC DRUG EFFECT, STREPTOMYCES, CELL MEMBRANE, FLUID PERMEABILITY, DRUG PRODUCTION, CONTINUOUS CULTURE, CHEMICAL PURIFICATION/(U)VALINOMYCIN ANTIBIOTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1362 STEP NO--UR/0297/70/015/005/0387/0392

CIRC ACCESSION NO--AP0115332

UNCLASSIFIED

2/3 024 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0115332

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONDITIONS FOR BIOSYNTHESIS OF VALINOMYCIN BY STREPTOMYCES SPECIES PRL 1642 UNDER PILOT PLANT CONDITIONS WERE DEVELOPED. A METHOD OF SERIAL TITRATION AGAINST CANDIDA ALBICANS WAS PROPOSED FOR DETERMINATION OF VALINOMYCIN CONTENT IN SAMPLES TAKEN DURING THE CULTURE GROWTH AND THE ANTIBIOTIC ISOLATION. SAMPLES OF THE FERMENTATION BROTH WERE ACIDIFIED WITH HYDROCHLORIC ACID TO PH 2.3-2.5, THE PRECIPITATE WAS WASHED AND EXTRACTED TWICE WITH ETHANOL, THE VOLUME OF THE EXTRACT WAS ADJUSTED WITH DISTILLED WATER TO 70 PER CENT. THE COMPOSITION OF THE FERMENTATION MEDIUM WAS THE FOLLOWING (IN PER CENT), CORN STEEP LIQUOR 0,5 (DRY WEIGHT), AMMONIUM SULFATE 0,4, GLUCOSE 1, STARCH 1.5, SODIUM CHLORIDE 0.5, CALCIUM CARBONATE 0.5. THE TIME OF FERMENTATION IN 45-, 100- AND 500-LITER FERMENTORS WAS 4 TO 5 DAYS. THE AVERAGE CONTENT OF THE ANTIBIOTIC IN 1 LITER OF THE MEDIUM WAS ABOUT 40 MG. THE ACTINOMYCETE DEVELOPMENT PROCEEDED IN 2 STAGES. THE ANTIBIOTIC PRODUCTION WAS OBSERVED IN THE 2ND STAGE, WHEN FRAGMENTATION OF THE MYCELIUM TOOK PLACE. VALINOMYCIN WAS ISOLATED BY 3-4 FOLD EXTRACTION OF THE MYCELIUM WITH ETHANOL, FOLLOWED BY PURIFICATION WITH BUTYLACETATE, SATURATED SOLUTION OF SODIUM BICARBONATE AND CARBON TETRACHLORIDE. AFTER THAT THE SUBSTANCE WAS ELUTED IN AN ALUMINA COLUMN BY CARBON TETRACHLORIDE AND THEN BY ITS MIXTURE WITH ABSOLUTE ETHANOL. ACTIVE FRACTIONS WERE EVAPORATED, DISSOLVED IN ETHER AND THE SOLUTION WAS PASSED THROUGH A COLUMN WITH ACTIVATED CHARCOAL AND CELITE 545. VALINOMYCIN WAS CRYSTALLIZED FROM HEXANE.

UNCLASSIFIED

3/3 024 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0115332

ABSTRACT/EXTRACT--A COLOURLESS CRYSTALLINE SUBSTANCE WITH A MELTING POINT OF 185-186DEGREES, ACTIVE AGAINST CANDIDA ALBICANS IN A DOSE OF 0.1 MUG-ML WAS OBTAINED. FACILITY: INSTITUTE FOR CHEMISTRY OF NATURAL SUBSHTANCES OF ACADEMY OF SCIENCES OF THE USSR, MOSCOW.

UNCLASSIFIED

USSR UDC 547-94

YAKHONTOVA, L. D., KOMAROVA, M. N., PEREL'SON, M. YE., BLINOVA, K. F., and TOLKACHEV, O. N., All Union Scientific Research Institute of Medicinal Plants, Leningrad Chemical-Pharmaceutical Institute

"Hypecoum Erectum Alkaloids. Structure of Hypecorine and Hypecorinine"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 5, 1972, pp 624-628

Abstract: Two new alkaloids were isolated from the Hypecoum erectum L. grass -- hypecorine, m.p. 154-156° and hypecorinine, m.p. 197-198°. The structures of these compounds were determined on the basis of their chemical reactions and IR, UV, NMR, and mass-spectroscopic data. Hypecorine was assigned the structure of 7-methyl-2,3,11,12-dimethylenedioxy-9-oxahomospirobenzyltetrahydroisoquinoline, and hypecorinine was identified as 7-methyl-2,3,11,12-dimethylenedioxy-15-keto-9-oxahomospirobenzyltetrahydroisoquinoline. Both compounds are optically inactive, probably due to the ease of the racemization stemming from their spiroaminoketal structures.

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USSR UDC 576.858:616-002.77

BOCHAROV, Ye. F., YAVOROVSKAYA, V. Ye., SHKURUPIY, V. A., BLINOVA, L. I., and KAZNACHEYEV, V. P., Novosibirsk Medical Institute, and Central Order of Lenin Institute of Advanced Training of Physicians, Moscow

"Morphogenesis of Coxsackie A 13 Virus Isolated From Rheumatic Fever Patients"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Biologicheskikh Nauk, No 10 (190), 1971, pp 131-137

Abstract: Light and electron microscope examination of human embryonic fibroblasts infected with Coxsackie A 13 virus, strain 689, isolated from rheumatic fever patients, showed that the nature and dynamics of the observed changes were identical to those in fibroblasts infected with the prototype virus. Signs of degeneration were evident within 6 to 8 hours when the virus began to reproduce and emerge from the cells. Two hours later eosinophilic and basophilic inclusions appeared in most of the affected cells. As the infection developed, the nucleus shifted to one of the poles. Structural changes in the cell organelles, especially the mitochondria, were prominent. Complex membranous-vesicular structures consisting of cytoplasmic vacuoles formed around the cells. Discrete granules were scattered about the cytoplasm. Virus particles concentrated on the periphery of the cells. These findings

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BOCHAROV, Ye. F., et al., Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Biologicheskikh Nauk, No 10 (190), 1971, pp 131-137

are in agreement with the results of morphological studies on other picorna viruses and support the view that virus isolated from rheumatic fever patients belongs to the enterovirus group.

2/2

USSR

UDC 534.6

BLINOVA, L. P., KOLESNIKOV, A. Ye., LANGANS, L. B.

"Acoustical Measurements"

Moscow, Izdatel'stvo standartov, 1971, p 2

Translation of Annotation: The book considers methods of measuring the parameters of acoustical processes in air, liquids, and solids and evaluates methods of measuring sonic pressure in various media as well as the effect of interference and diffraction phenomena on measurement results.

General problems of acoustical metrology are considered. Descriptions are given of modern electroacoustical sonic transmitters and receivers used in measurements. Problems in spectral, correlational, and statistical analysis, as applied to various cases of measurement practice, are discussed. Attention is given to questions connected with measurements in physiological acoustics. Methods of calibrating electroacoustical converters

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USSR

BLINOVA, L. P. et al, Izdatel'stvo standartov, 1971, p 2

for the reception of sound and vibrations are analyzed in detail. Also, methods are described for estimating the measurement error, and recommendations are made for processing measurement results.

The book is designed for workers engaged in verification operations, for metrological organizations, for control and measurement laboratories, and for specialists in acoustical measurements.

There are 24 tables, 143 illustrations, and a bibliography of 89 titles.

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USSR

UDC 534.6

BLINOVA, L. P., KOLESNIKOV, A. Ye., LANGANS, L. B.

"Acoustical Measurements"

Moscow, Izdatel'stvo standartov, 1971, pp 270-271

Translation:

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BLINOVA, L. P., et al, Izdatel'stvo standartov, 1971, pp 270-271

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2.2. Measuring sonic pressure in air. Dampening and reverberating chambers.

2.3. Measuring sonic pressure in liquids. Measuring hydroacoustical basins, devices for absorption of sound. Requirements of measurement basins. Measurements in open tanks.

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BLINOVA, L. P. et al, Izdatel'stvo standartov, 1971, pp 270-271

2.4. Effect of interference and diffraction phenomena on acoustical measurements.

2.5. Measuring the power of sonic transmitters, determining their efficiency.

2.6. Determining the directional characteristics and the directional factors of transmitters and receivers in various media.

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2.8. Measuring acoustical resistance.

2.9. Measuring vibrations: acceleration, velocity, and displacement.

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BLINOVA, L. P. et al, Izdatel'stvo standartov, 1971, pp 270-271

Chapter 3. Analysis of Measurement Signals

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BLINOVA, L. P. et al, Izdatel'stvo standartov, 1971, pp 270-271

Chapter 4. Measurements in Physiological Acoustics:

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4.2. Psychological aspects of hearing and its quantitative characteristics.

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BLINOVA, L. P. et al, Izdatel'stvo standartov, 1971, pp 270-271

5.2. Calibrating sonic transmitters and receivers on the basis of the reciprocity principle.

5.3. Calibrating microphones and hydrophones with acoustical tubes.

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5.5. Calibrating electroacoustical converters by the electrostatic method.

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5.9. Calibrating vibration receivers.

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USSR

BLINOVA, L. P. et al, <u>Izdatel'stvo standartov</u>, 1971, pp 270-271

7/7

USSR UDC 616.288.75+616.2-036.11]-053.2-085.339:576.858]-039.71

YERMOL'YEVA, Z. V., BLINOVA, M. I., FURER, N. M., RITOVA, V. V., KUCHERENKO, L. P., NEMIROVSKAYA, B. M., SHCHERBAKOVA, E. G., SCHASTNYY, E. I., ORLOVA, L. N., and FAYNSHTEYN, S. L., Chair of Microbiology, Central Institute for Advanced Training of Physicians, and Institute of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, Moscow

"Prophylaxis of Influenza and Other Acute Respiratory Diseases Among Children Through Administration of Leukocytic Interferon and a Stimulant of Interferon Production (UF Virus)"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, pp 442-446

Abstract: An express method of preventing influenza and other acute respiratory diseases was tested in childrens' institutions in Moscow during the interepidemic period of March-June 1968 and during the influenza epidemic in January-February 1969. The project was carried out under strictly controlled, coded experimental conditions. The 750 children, aged 10 months to 7 years, were divided into four groups at random, and the preventive agents were administered intranasally. One group received leukocytic interferon two times per day for 7 to 42 days. The second group received interferon with liquid ecmoline. The third group received UF virus once daily for 3-4 days with

USSR

YERMOL'YEVA, Z. V., et al, Voprosy Virusologii, No 4, Jul/Aug 71, pp 442-446

intervals of 3-4 days. The fourth group received placebos. The effectiveness index of interferon was 3.0 (frequency of diseases three times smaller than in the placebo group) in the interepidemic period and 2.2 during the epidemic. The effectiveness index of interferon with ecmoline was 1.8, and that of UF virus was 3.0 in the interepidemic period. All differences are statistically significant. Since no toxic effects were observed, the method is recommended for the prevention of influenza and other acute respiratory diseases.

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USSR

UDC: 616.988.75-085.371:576.85.23(ECHO)7-036.8

BLINOVA, M. I., RITOVA, V. V., VOROSHILOVA, M. V., YERMOL'YEVA, Z. V., Central Institute for the Advanced Training of Physicians, Institute of Virology imeni Ivanovskiy, Academy of Medical Sciences USSR, Institute of Poliomyelitis and Viral Encephalitides, Academy of Medical Sciences USSR, Moscow

"Study of the Epidemiological Effectiveness of the Stimulator of Interferon Formation During an Outbreak of A2 (Hong Knog) Influenza"

Moscow, Zhurnal Mikrogiologii Epidemiologii i Immunobiologii, Vol 48, No 1, Jan 71, pp 70-73

Abstract: More than 100 new viruses producing respiratory diseases have been discovered during the past ten years, requiring development of new prophylactic methods.

A study in groups of children and adults showed that ZhEV-4 (Zhivaya enterovirusnaya vaktsina--live enterovirus vaccine), a stimulator of interferon formation, had a prophylactic effect for healthy persons in contact with infected persons. Per=oral immunization of children by vaccine (in a 1:10 dilution) at

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USSR

BLINOVA, M. I., et al., Zhurnal Mikrogiologii Epidemiologii i Immunobiologii, Vol 48, No 1, Jan 71, pp 70-73

two-week intervals reduced incidence by a factor of 2.8; the protective coefficient was 64%. The same results were obtained with adults. After intranasal administration of the vaccine, the incidence of influenza dropped by a factor of 2.6 and the protective coefficient was 61%. Persons who received a single vaccine administration had a mild form of flu. When people received the vaccine twice or three times, only isolated cases were observed. There were no incidents of allergy or side reactions. The best effect was observed when the vaccine was used in a 1:10 dilution perorally.

1/2 027 UNCLASSIFIED PROCESSING DATE--11SEP70

3

TITLE--AMYLASE INDUCTION IN L CELLS. EFFECT OF THE MODE OF CELL HARVESTING ON THE AMOUNT OF REGISTERED AMYLASE ACTIVITY -U-

AUTHOR--PODGAYETSKAYA, D.YA., GERSHUN, V.A., IGNATOVA, T.N., BLINOVA, M.I., FRIDLYANSKAYA, I.I.

COUNTRY OF INFO--USSR

SOURCE--TSITOLOGIYA 1970, 12(2), 253-6

B

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TISSUE CULTURE, CULTURE MEDIUM, AMYLASE, BIOSYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0943 STEP NO--UR/9053/70/012/002/0253/0256

CIRC ACCESSION NO--AP0102884

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--11SEP70
CIRC ACCESSION NO--AP0102884
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INCREASED AMYLASE ACTIVITY IN L CELLS AFTER ADDN. OF STARCH TO THEIR NUTRIENT TRYPSIN CONTG. MEDIUM INDICATE SUBSTRATE INDUCTION OF ENZYME SYNTHESIS. THE SIZE OF THE REGISTERED EFFECT COULD BE CHANGED BY DIFFERENT METHODS OF HARVESTING CELLS FROM THE GLASS. DURING MECH. OR SIMPLE HARVESTING, INDUCTION DECREASED.

UNCLASSIFIED

Inorganic Compounds

USSR

UDC 542.61:546.791-31

BLINOVA, N. I., KOZHINA, I. I., RODIONOVA, L. P., and SOLNTSEV, V. M.

"Solution of Some Uranium Oxides in Sulfuric Acid"

Leningrad, Radiokhimiya, Vol 15, No 3, 1973, pp 391-397

Abstract: Changes in the composition and structure of tetragonal and cubic uranium oxides during solution at 90° in 2.0, 10.0, and 15.0 N H_2SO_4 were studied. Solution was carried out in an Ar atmosphere. Solution of U_4O_9 and beta-U_3O_7 proceeded with an insignificant change in the chemical composition. Other oxide phases did not form in the process. The concentration of H_2SO_4 had no effect on the limiting composition of the two oxides. The lower limit of the existence of the U_4O_9 phase was at a composition in the vicinity of $UO_{2.231\pm0.005}$ and that of the beta-U_3O_7 phase at a composition in the vicinity of $UO_{2.287\pm0.005}$. For gamma-U_3O_7 and tetragonal and pseudocubic oxides with the compositions $UO_{2.37}$ to $UO_{2.40}$, the limiting compositions varied with the concentration of H_2SO_4 and with the method by which the initial oxide had been

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BLINOVA, N. I., et al., Radiokhimiya, Vol 15, No 3, 1973, pp 391-397

prepared. As shown by the compositions on solution first in 2 N H_2SO_4 and then in 10 N H_2SO_4, the changes in composition were reversible for these oxides. The lower limit of existence of the gamma-U_3O_7 phase at 90° was at a composition in the vicinity of $UO_{2.346 \pm 0.005}$. In the case of the oxides the behavior of which varied with the method of preparation, one could assume a lack of uniformity in the phase composition of the samples, which were apparently inhomogeneous in that respect. The authors thank Prof. U. M. Tolmachev for his help in the investigation.

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USSR

UDC 576.851.49.097.21.07

PETROVSKAYA, V. G. and [redacted] Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"Assessment of the Significance of Type-Specific Antigen in the Virulence of Shigella flexneri 2a in Studies of Recombinants of Certain Genetic Classes"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971, pp 69-74

Abstract: Conjugation of the virulent S. flexneri 516 2a strain with the nonpathogenic E. coli K12 HfrC, Ab 312, and AB 732 strains produced different classes of hybrids with definite genetic characters and antigenic structure. The virulence of these hybrids was studied in different biological models. After intraperitoneal infection of white mice, it was impossible to differentiate the cultures from the results of the keratoconjunctival test. However, extremely virulent strains could be differentiated from attenuated ones in chick embryos. The virulence of the attenuated hybrids that included the $rha^{+}xyl^{+}$ region was regularly reduced by a factor of two compared with virulent cultures. Shigella strains can be differentiated more accurately with respect to virulence by using the

USSR

PETROVSKAYA, V. G. and BLINOVA, N. I., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971, pp 69-74

"pulmonary" model, quantitative keratoconjunctival test, and Formal model. Loss of the type-specific antigen by lactose-positive hybrids did not affect the virulence of the strains. Loss of the type-specific antigen by previously attenuated hybrids resulted in behavioral differences in the models studied compared with attenuated recombinations possessing the type-specific antigen. The authors concluded that type-specific antigens play a secondary role in the virulence of S. flexneri 2 a and that some still unknown factor is of decisive significance in this respect.

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USSR UDC 541.451:546.791

BLINOVA, N. I., RODIONOVA, L. P., and TOLMACHEV, YU. M.,

"Reactions of Mixed Uranium Oxides With Acids"

Leningrad, Radiokhimiya, Vol 12, No 6, 1970, pp 835-838

Abstract: When U_3O_8 is dissolved in acetic acid at 60°C in concentrations ranging from 0.3 to 17.2 M, the lower equilibrium oxide formed in 7.0 M CH_3COOH is $UO_{2.57}$. In perchloric acid U_3O_8 yields U_2O_5 ($UO_{2.50}$) as the lower equilibrium oxide in concentration range 0.25 to 2.0 N. When U_2O_5 is dissolved either in acetic or perchloric acid at 90°, the same oxides are formed as in the case of U_3O_8. Reaction of U_3O_8 with 1 N nitric acid at 40° or 60° in presence of anthranilic acid yields the pentoxide U_2O_5. X-ray analysis showed that in the equilibrium oxides (up to $UO_{2.57}$) there exists the hexagonal phase, characteristic of the U_2O_5 oxide.

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USSR

UDC 576.851.49(Shigella).097.21.07

BLINOVA, N. I., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"Use of a Pulmonary Model for Determining the Virulence of Shigella Hybrids With Various Genetic Characteristics"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunologii, No 9, Sep 70, pp 32-36

Abstract: The "pulmonary model" was developed by Voyno-Yasenetskiy in 1957 to study the virulence of pathogenic intestinal bacteria. The model was considered to represent in excellent means for studying the virulence of Shigella flexneri recombinants with various genetic characteristics. It indicates the specific capacity of Shigella strains to enter a given type of epithelium, is suitable for quantitative determination of their multiplication in cells, and may be applied in studies with readily available animals. In the present study a virulent strain of Sh. flexneri (516 2a) was used as a recipient, and two strains of E. coli (HfrC and Hfr AB 312) were used as donors. The animals were infected intranasally. Distinct differences were noted in the propagation of virulent attenuated and avirulent hybrids of Shigella. The "pulmonary model" is an expedient means for characterizing the virulence of Shigella hybrids, which could not be differentiated distinctly by the keratoconjuctival test.

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[redacted]

USSR UDC 632.95

NURIDZHANYAN, K. A., BLINOVA, V. G., STONOV, L. D., BAKUMENKO, L. A., and USACHEVA, N. M.

"Concerning the Herbicidal Activity of Certain Aryl- and Alkyl-Containing Thioureides, Thioureas and Thiouracils"

V sb. Khim sredstva zashchity rast. (Chemical Agents for Plant Protection -- collection of works), vyp 1, Moscow, 1970, pp 197-200 (from RZh-Khimiya, No 11, Jun 72, Abstract No 11N445)

Translation: The following compounds were synthesized: 3-R-methyl-2-thiouracils (I) (R and the melting point in °C are cited): Me, 264-5; Et, 202-3; Pr, 172-3; Bu, 163-4; iso-Bu, 214; C_6H_{13}, 120; Ph, 256; o-ClC_6H_4, -; substances with the formula PhCONHCSNHR (II) (R and the melting point in °C are cited): Me, 150; Et, 133; Pr, 133; iso-Pr, 113-4; Bu, 51-2; tert-Bu, 127-8; C_8H_{17}, 152-3; Ph, 143; o-ClC_6H_4, 145-6; p-$O_2NC_6H_4$, 182; p-$Me_2NC_6H_4$, 166-7; and substances with the formula H_2NCSHR (III) (R and the melting point in °C are cited): Me, 108; Et, 108; iso-Pr, 157; Bu, 79; iso-Bu, 93.5; tert-Bu, 165; C_6H_{13}, 83;

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NURIDZHANYAN, K. A., et al., V sb. Khim. sredstva zashchity rast., Vyp 1, Moscow, 1970, pp 197-200

C_8H_{17}, 97; Ph, 154; o-ClC_6H_4, 142; p-$O_2NC_6H_4$, 190; p-$Me_2NC_6H_4$, 182-3. Compounds I show higher herbicidal activity with respect to monocotyledons and dicotyledons than the corresponding uracils. Data are presented from tests of compounds II and III.

USSR UDC 632.95

BLINOVA, V. G., IVANOVA, S. N., KLIMKINA, L. G., SHVETSOV-SHILOVSKIY, N. I., and MEL'NIKOV, N. N.

"Method of Preparing 2-Oxo-3-chrysanthemoylhydroxymethylbenzoxazoline or 2-Thio-3-chrysanthemoylhydroxymethylbenzoxazoline"

USSR Authors' Certificate No 259891, filed 2 Aug 68, published 12 May 70 (from RZh-Khimiya, No 1, 10 Jan 71, Abstract No 1N597P)

Translation: Compounds of the general formula $\overline{C(=Y)OCH_3(XN}CH_2OCO\overline{CHCMe_2}CHCH=CMe_2$ [I; $C_6H_3(X)$ = substituted o-phenylene; X = H, halogen; Y = O or S] are obtained by the reaction of benzoxazolinones or benzoxazolinethiones with acid chloride of chrysanthemumic acid (II) in the presence of an HCl acceptor, e.g. C_5H_5N, at temperature 0–9° in an organic solvent or without it. Example. To a suspension of 0.01 mole 3-hydroxymethylbenzoxazolinethione in 10 ml anhydrous PhMe are added 0.04 mole C_5H_5N with stirring and then, dropwise, at temperature 5–9° a solution of 0.01 mole II in 10 ml PhMe. The reaction mixture is stirred for 5 hr at ∿20°, after which $C_5H_5N \cdot HCl$ is filtered off. The solution is extracted consecutively with a 5% HCl acid solution, an $NaHCO_3$ solution, an NaCl solution, and dried over Na_2SO_4. The solvent is distilled off in vacuum, and the residue is

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BLINOVA, V. G., et al., USSR Authors' Certificate No 259891, filed 2 Aug 68, published 12 May 70 (from RZh-Khimiya, No 1, 10 Jan 71, Abstract No 1N597P)

crystallized from heptane, to yield 2.9 g I (X = H, Y = S), melting point 91-2°. The following I's are synthesized (indicated here are X, Y, % yields, melting point, °C): H, O, 90, 85-6 (heptane); 6-Cl, O, 93, oil; 6-Br, O, 91, 78-9 (heptane); 6-Br, 95, S, oil. Compounds possess high fungicidal activity.

2/2

1/2 013 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--LARGE SCALE PROCESSES AND NUMERICAL SIMULATION OF THE GENERAL CIRCULATION OF THE ATMOSPHERE AND LONG RANGE WEATHER PREDICTION -U-

AUTHOR--BLINOVA, YE.N.

B

COUNTRY OF INFO--USSR

SOURCE--METEOROLOGIYA I GIDROLOGIYA, 1970, NR 6, PP 3-15

DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--ATMOSPHERIC CIRCULATION, LONG RANGE WEATHER FORECAST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1744 STEP NO--UR/0050/70/000/006/0003/0015

CIRC ACCESSION NO--AP0125362

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0125362

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROSPECTS OF THE DEVELOPMENT OF INVESTIGATIONS ON LARGE SCALE PROCESSES AND NUMERICAL SIMULATION OF THE GENERAL CIRCULATION OF THE ATMOSPHERE AND LONG RANGE WEATHER PREDICTION ARE STATED. FACILITY: GIDROMETEOROLOGICHESKIY NAUCHNO ISSLEDOVATEL'SKIY TSENTR SSSR.

UNCLASSIFIED

USSR

BLIOKH, ZH. L., and LIBERMAN, YE. A. Institute of Problems of Information Transmission, Academy of Sciences, USSR, Moscow

"The Influence of Beryllium Ions on the End Plate Potential and Frequency of Miniature End Plate Potentials at Myoneural Junctions in the Frog"

Moscow, Biofizika, Vol 15, No 3, May/Jun 70, pp 447-452

Abstract: The addition of 0.05-0.1mM of beryllium to Ringer's solution, containing a muscle-nerve preparation from a frog, results in a block at the myoneural junction caused by inhibition of the release of mediator quanta. Analysis of end plate potential amplitudes during Be-block indicates that Be^{++} reduces the probability of release of mediator quantum in response to a nerve impulse. There is evidence that Be^{++} is a competitive antagonist to Ca^{++} in this process. The mechanism of this competition correlates with the decrease of Ca-influx into the nerve endings in response to nerve impulse.

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USSR

13

UDC 535.421:62-86(088.8)

BLOKH, A. A., Leningrad Opticomechanical Association

"Device for Scanning a Diffraction Grating"

USSR Author's Certificate No 234704, filed 1 Apr 67, published 30 May 69 (from RZH-Metrologiya i Izmeritel'naya Tekhnika, No 1, Jan 70, Abstract 1.32.1343 P)

Translation: The proposed device for scanning a diffraction grating consists of a rotating stand, mechanism for changing the grating, and a mechanism for turning operations which is made up of levers with rulers of cosecant mechanism and a roller with an actuator screw with a nut. In order to increase the accuracy of angular displacement of diffraction gratings, a correcting mechanism is installed in the device which consists of a guide bar with carriage to which a roller is fastened, which, in turn, is connected to a drive mechanism in such a manner that the carriage can receive motion only along the axis of the guide bar. The mechanism for changing gratings has catches, connected through a vertical shaft with levers, which shift simultaneously with the changing of gratings.

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1/2 029 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--THERMALLY ACTIVATED SLIP IN LITHIUM FLUORIDE CRYSTALS -U-

AUTHOR-(03)-GAYDUCHENYA, V.F., BLISTANOV, A.A., SHASKOLSKAYA, M.P.

COUNTRY OF INFO--USSR

B

SOURCE--FIZ. TVERD. TELA 1970, 12(1), 36-41

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--THERMAL EFFECT, RELAXATION PROCESS, SINGLE CRYSTAL, ACTIVATION ENERGY, CRYSTAL LATTICE STRUCTURE, LITHIUM FLUORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1980/0239 STEP NO--UR/0181/70/012/001/0036/0041

CIRC ACCESSION NO--AP0048518
UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0048516

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY MEASURING THE YIELD POINT (TAUTAU) AND THE RATE OF STRESS RELAXATION (TAU) ON COMPRESSION OF SINGLE CRYSTAL SPECIMENS AT 77-450DEGREESK, THE MECHANISM OF SLIP WAS INVESTIGATED IN PURE SINGLE CRYSTAL LIF AND LIF CONTG. 0.1 AT. PERCENT MG IN THE QUENCHED AND TEMPERED STATES. THE TEMP. DEPENDENCE OF THE THERMAL COMPONENT OF THE YIELD POINT TAU AGREES WELL WITH THE THEORY OF STRENGTHENING OF CRYSTALS BY ATOMS OF THE IMPURITY AS A RESULT OF THE APPEARANCE OF TETRAGONAL DISTORTIONS OF THE LATTICE (THE FLEISCHER THEORY). THE ENERGY OF ACTIVATION OF THE MOTION OF DISLOCATIONS H AND THE ACTIVATION EXHANGE V AGREE SUFFICIENTLY WELL WITH THE THEORY AT 77-200DEGREESK. A BETTER CORRESPONDENCE OF H AND V OF THE ABOVE THEORY WAS OBSD. FOR LIF CRYSTALS WITH A LOW IMPURITY CONCN. AND FOR LIF CONTG. MG IN THE ANNEALED STATE. THE OBSD. DEVIATIONS FROM THE THEORY OF THE DEPENDENCES H(TAU) AND V(TAU), ESP. PRONOUNCED STARTING AT 180-210DEGREESK, ARE RELATED TO THE BLOCKING OF DISLOCATIONS IN THE PROCESS OF RELAXATION OF STRESSES BY IMPURITY ATOMS WHICH BECOME MOBILE AS THE TESTING TEMP. INCREASES.

USSR

UDC 539.376:532.135

BLITSHTEYN, Yu. M., Voronezh

"Determination of Rheological Parameters in Quasistatic Problems of the Nonlinear Theory of Visco-elasticity"

Prikladnaya Mekhanika, Vol 8, No 3, 1972, pp 68-72.

Abstract: The rheological relationships between stresses and strains are studied on the basis of the generalized conditions of isochronism of creep curves for a complex stress state. These relationships are used to solve problems of torsion of an isotropic, visco-elastic straight circular cylinder. The possibilities for determination of visco-elastic parameters are discussed.

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USSR UDC 632.954:631.445.2

BLIYEV, YU. K., KOZLOVA, L. M., Candidate of Biological Sciences, Leningrad Scientific Research Institute of Forestry

"Effect of Various Doses of Herbicides on Soil Fertility"

Moscow, Khimiya v sel'skom Khozyaystve, No 11, 1972, pp 50-53

Abstract: Results are presented from laboraotry tests in 1968-1970 conducted to study the effect of ordinary and increased doses of herbicides recommended for application in forest nurseries on the nutritive regime of the soil. Tabulated data are presented for simazine, dalapone, and sodium trichloroacetate indicating their effect on the nitrate and ammoniacal nitrogen content in the soil, the humus and total nitrogen content in the soil and the P_2O_5 and K_2O content. The soil mechanisms giving rise to the results are discussed. When used in the recommended doses, the herbicides resulted in increased accumulation of nitrates after a month with maximum nitrate content in the version with a mixture of dalapone and 2,4-D. Twenty days after injection of the herbicides the ammoniacal nitrogen content increased somewhat. In increased doses the herbicides inhibited the nitrate accumulation process in the soil for the first month. The strongest inhibiting effect resulted from a mixture of sodium trichloroacetate and 2,4-D. Intensifica-

Environmental & Ecological Problems

USSR

ELIZEYEV, V. I., D'YACHKOV, V. I., LERNER, I. B., MISHIN, V. K., NEKHAMKINA, G.S. NIKITINA, Ye. I., DIANOVA, YE. F., and MAKLONOVA, R. Ye.

"Joint Hygienic Study of Atmospheric Pollution in Certain Industrial Centers of the Central Volga Region"

Sb. nauch. tr. Kuybyshev, NII gigiyeny (Collection of Scientific Works of the Kuybyshev Scientific Research Institute of Hygiene), No 7, 1972, pp 92-93 (from RZh-Geofizika, Svodnyy tom, No 5, 1973, Abstract No 5B504 by L.S.G.)

Translation: A study was made of the contamination of the atmosphere by chemical and oil-refining complexes and of the impact of pollutants on the health and sickness rate of children and on immunohematological indexes of animals. Measures have been elaborated for the elimination and reduction of specific discharges into the atmosphere, for the organization of sanitary shielding of industrial sites, and for improving the health of the child population.

Organophosphorous Compounds

USSR UDC 632.95

BLIZNYUK, N. K., KVASHA, Z. M., SPLNTSEVA, L. M., FADEYEV, YU. N., UNTERBERGER, V. K., and YOLOVA, M. N. , All-Union Scientific Studies Institute of Phytopathology

"Process for Preparing Mixed Dialkyl Esters of the Higher Alkylphosphonous Acids"

Author's Certificate No 340665, filed 22 Jun 70, publsihed 29 Jun 72, (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8N470P by T. G. Chekareva)

Translation: Compounds having the general formula RP(O)(OR')OR" (I)(R= alkyl, R' and R" = C_1 to C_6) have acaricidal activity to the stable and sensitive form of vegetation mites. They are prepared by the reaction of RP(O)(OR')OH (II), with a 5-10-fold excess of R"OH. For example, Cl_2 is passed through a solution of 0.03 moles of II (R=C_9H_{19}, R'=C_6H_{13}) and 0.15 moles of absolute BuOH in 20 ml of CH_2Cl_2 until the appearance of a yellow-green color. It is then concentrated and product I (R=C_9H19, R'+C_6H13, R"=Bu) is obtained, having $n^{20}D$ = 1.4435, d_4^{20} =0.9211, a boiling temperature of 176 to 178° at 1 (?)mm, a yield of about 100%. Other analogous compounds were prepared. R,R' and R"

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UDC 632.95

USSR

BLIZNYUK, N. K., KVASHA, Z. N., VARSHAVSKIY, S. L., BARANOV, Yu. I., **LIBMAN**, B. Ya., STREL'TSOV, R. V., PROTASOVA, L. D., MARKOVA, L. I., **KHOKHLOV**, P. S., MADZHARA, G. A., KIRILINA, L. E., All-Union Scientific Research Institute of Phytopathology

"A Method of Making Thiophosphonyl Dihalides"

USSR Author's Certificate No 337384, filed 31 Oct 69, published 2 Jun 72 (from RZh-Khimiya, No 9, May 73, abstract No 9N500 by T. G. Chekareva)

Translation: Compounds of the general formula $RP(S)X_2$ (I) ($R = C_1$-C_{12}-alkyl, Cl cycloalkyl, aryl, unsubstituted alkyl or alkyl containing substituents, or Br; X = Cl, Br) are synthesized by reacting $(RS)_3P$ (II) with a 2-10-fold excess of PX_3 with heating to 250-330°C in an autoclave. Example. A mixture of 0.07 mole of II (R = Me) and 0.7 mole of PCl_3 is heated in an autoclave test tube of stainless steel at 290-320°C for 5 hours. The excess PCl_3 is driven off at atmospheric pressure and distillation of the residue in a vacuum gives I (R=Me, X=Cl), boiling point 70-3°/80, $n^{20}D$ 1.5510, d_4^{20} 1.4421, yield 52%. Similar methods are used to produce other compounds of type I (given are R, X, boiling point in °C/mm, $n^{20}D$, d_4^{20}, yield in %): Et, Cl, 64-8/15, 1.5418, 1.3527, 58; Pr, Cl, 85-8/15, 1.5285, 1.2942, 40; iso-Pr, Cl, 72-5/15, 1.5290, 1.3017, 47.5; Bu, Cl, 111-13/25, 1.5269, --, 65;

USSR

SUKHOMLINOV, B. P., Vopr. tekhnol. ulavlivaniya i pererab. produktov koksovaniya, Kharkov, 1972, pp 50-56

sulfur with a sufficient amount of powdered SL. A SN screw mixer is recommended for bringing the components into contact under pressure and pulverizing them at the same time.

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UDC 632.95

USSR

BLIZNYUK, N. K., KOLOMIYETS, A. F., GOLUBEVA, R. N., GRANIN, Ye. F., FADEYEV, Yu. N., VRUBLEVSKAYA, L. S., VARSHAVSKIY, S. L., KOFMAN, L. P., VIKHANSKIY, K. N.

"A Method of Making Derivatives of Aryl Esters of β-Isothiuronium Ethanesulfonic Acid"

USSR Author's Certificate No 337381, filed 1 Aug 63, published 1 Jun 72 (from RZh-Khimiya, No 9, May 73, abstract No 9N522P by T. G. Chekareva)

Translation: Compounds of the general formula $RO_3SC_2H_4SC(NH_2)=NH\cdot HA$ (I) (R = aryl unsubstituted or substituted by Cl, No$_2$, Me; A = Cl or an organic acid radical) are synthesized by reacting $Ch_2=CHSO_3R$ (II) with salts of thiourea or a mixture of thiourea with inorganic or organic acids. Example. Solutions of equimolar quantities of II and thiourea hydrochloride in butanol which are saturated at 60-90°C are heated at 80-90°C for 1 hour, cooled, and filtered, giving I with a yield of 85-96%. Evaporation of the mother liquor gives an additional quantity of I. The overall yield of I is 95-100%. The following compounds of type I (A = Cl) are synthesized (given are R and the melting point in °C): Ph, 165-6; 4-ClC_6H_4 (Ia),

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BLIZNYUK, N. K., et al., USSR Author's Certificate No 337381, filed 1 Aug 63, published 1 Jun 72

144-6; 3-ClC_6H_4, 168-70; 2,4-$Cl_2C_6H_3$, 157-9; 2,4,5-$Cl_3C_6H_2$, 178-80; 2,4,6-$Cl_3C_6H_2$, 184 (decomp.); 4-$NO_2C_6H_4$, 155-8; 3-MeC_6H_4, 160-2. Saturated aqueous solutions of equimolar quantities of Ia and 2,4-$Cl_2C_6H_3OCH_2COONa$ are mixed at 90-100°C, cooled, and filtered, giving compound I (A = 2,4-$Cl_2C_6H_3OCH_2COO$-, R = 4-ClC_6H_4), melting point 134-5°C, yield 99.5%. In concentrations of 3.1-25 mg per liter compound I suppresses the growth of the mycelium Botritis cinerea and Piricularia orysae by 50-100%; in concentrations of 0.25-1 mg per liter, compound I suppresses the growth of spores of Botritis cinerea and Piricularia orysae by 8-100%, and in a concentration of 0.1% the chemical suppresses rust of the wheat strain Puccinia graminis f. tritici by 42-58%.

USSR UDC 632.95

BLIZNYUK, N. K., PROTASOVA, L. D., KVASHA, Z. N., KLIMOVA, T. A., and KLOPKOVA, R. S., All-Union Institute of Phytopathology

"Synthesis of Thiophosphocyclopentenyl Chlorides"

USSR Author's Certificate No 327208, filed 16 Jun 70, published 28 Mar 72 (from Referativnyy Zhurnal -- Khimiya, Svodnyy Tom, (I, L-S), No 1(II), 1973, Abstract No 1N457P by T. A. Belyayeva)

Translation: The intermediate products for the synthesis of pesticides, the alkylthiophosphocyclopentenyl chlorides, were prepared during the reaction of diene hydrocarbon with alkyldichlorophosphite and $PSCl_3$ at 100-150°C. Example. One mole BuOH is added to 3 moles PCl_3 at 15-20°C with constant stirring, the mixture is heated at 60-65°C for 2-3 hr; the reaction mixture is cooled to 0-5°C, then 1 mole of colled $CH_2=CHCH=CH_2$ and 3 moles $PSCl_3$ are added, the mixture is heated in a stainless autoclave at 110-120°C for 3 hr. The mixture is distilled and the mixture of acid chloride isomers of thiophosphocyclopentenic (2 and 3) acid is separated from the reaction mixture. The yield was 81%, b.p. 120-140°C/14, $n^{20}D$ 1,5840, d^{20}_4 1,3225. The acid chloride of 3-methylthiophosphocyclopentenic-3 acid was also obtained, b.p. 137-140°C/12, $n^{20}D$ 1,5895, m.p. 43-45°C, as well as mixture

BLIZNYUK, N. K., et al., USSR Author's Certificate No 327208, filed 16 Jun 70, published 28 Mar 72

of isomers of acid chloride of 3-methylthiophosphocyclopentenic (2 and 3) acid, b.p. 125-135°C/12, $n^{20}D$ 1,5845. Example of the reaction with piperylene.

USSR UDC 632.95

BLIZNYUK, N. K., LEVSKAYA, G. S., KVASHA, Z. N., MATYUKHINA, Ye. N.

"Procedure for Obtaining Bis-thiolphosphonates"

USSR Author's Certificate No 319605, filed 16 Mar 70, published 17 Jan 72 (from RZh-Khimiya, No 2 (II), Feb 73, Abstract No 2N530)

Translation: Fungicides with the formula $A[CH_2SP(O)(OR')R]_2$ (I) (R = alkyl, aryl, aralkyl; R' = alkyl or aryl, A = arylene) are obtained by the reaction RP(O)(OR')SR" (II) (R" = alkyl) with xylylendihalogenide at a temperature of 140-200° in an organic solvent. As an example, a mixture of 0.05 moles of II (R = r-ClC_6H_4, R' = R" = Me) and 0.025 grams of 1.4-$(BrCH_2)_2$-C_6H_4 in 5 mℓ of xylol is boiled to completion of precipitation of MeBr, it is evaporated and the I (A = 1,4-C_6H4, R = 4-ClC_6H_4, R' = Me) is separated. The yield is 67.3%, the melting point 167-8°. The I is synthesized analogously (R, R', yield in %, $n^{20}D$ or melting point in "C are presented) A = 1,4-C_6H_4: Et, Me, 96, 1.5580; Me, Et, 97.4, 1.5330; 4-MeC_6H_4, Me, 88, 160-2 (acetone); $PhCH_2$, Me, 95.7, 1.6075; A = 4-MeC_6H_3-1,3: 4-ClC_6H_4, Me, 92.4, 152-4 (acetone).

USSR UDC 632.95

BLIZNYUK, N. K., KHOKHLOV, P. S., KVASHA, Z. N., MARKOVA, L. I., LEVSKAYA, G. S., PROTASOVA, L. D., SOLNTSEVA, L. M., MATYUKHINA, Ye. N., VARSHAVSKIY, S. A., BARANOV,Yu. I., LIBMAN, B. Ya., ZHEMCHUZHIN, S. G.

"Method of Production of Dichlorides or Dibromides of Thiophosphonic Acids or Their Bis Analog"

USSR Author's Certificate No 332095, filed 19/08/69, published 17/04/72 (Translated from Referativnyy Zhurnal Khimiya, No 24(II), 1972, Abstract No 24N591, by T. A. Belyayeva)

Translation: Compounds of the formula $RP(X)X_2$ (I) (R=alkyl, aryl, aralkyl; X=Cl or Br) and $X_2P(S)A(S)PX_2$ (II) (A-bivalent hydrocarbon radical) were produced by the reaction of mono- or dihalo hydrocarbons with S, P and PX_3 with heating to 250-400° in an autoclave of stainless steel or nickel in the presence of catalytic quantities of I_2 or its compounds. Example. A mixture of 0.24 mole PhCl, 0.24 g-atom S, 0.16 g-atom white P, 35 ml PCl_3 and 0.05 g I_2 is heated at 290-330° for seven hours in an autoclave of stainless steel, the PCl_3 is distilled, then vacuum distillation is used to separate I (R=Ph, X=Cl), yield 60%, B. T. 109-112°/3, $n^{20}D$ 1.6241. Similarly, I were produced (given R, X, yield in %, B. P. in °C/mm, $n^{20}D$): 4-Clc_6H_4,

USSR

BLIZNYUK, N. K., et al., USSR Author's Certificate No 332095, filed 10/08/69, published 17/04/72

Cl, 53.5; 124-3/1.5-2, 1.6229; p-MeC_6H_4, Cl, 54.5, 125-7/1, 1.6120; $4FC_6H_4$, Cl, 72.2, 95-7/0.5, 1.6028; Ph, Br, 61, 127-130/2, 1.6850; 4-FC_6H_4, Br, 55, 135-8/1, 1.6758; $PhCH_2$, Cl, 76.4, 120-3/2, 1.6150; 3-FC_6H_4, Cl, 108-110/1.5, 1.5908; 4-$MeC_6H_4CH_2$, Cl, 53.3, 126-9/2, 1.6035; 4-$ClC_6H_4CH_2$, Cl, 61.6, 129-133.2, m. p. 74-6°, --; 2-$FC_6H_4CH_2$, Cl, 61.6, 129-133.2, m. p. 48-9°, --; 2.4-$Me_2C_6H_3CH_2$, Cl, 47.5, 140-1.6045; 2.4-$Cl_2C_6H_3CH_2$, Cl, 43.4, 147-9/2, m. p. 100-1", --. Also produced were II (X=Cl, A=CH_2CH_2), yield 61.5%, m. p. 92-3°. I and II are intermediate products for the production of insecticides, acarocides, fungicides and herbicides.

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USSR UDC 632.95

BLIZNYUK, N. K., PROTASOVA, L. D., and KVASHA, Z. N., VNII (All-Union Scientific Research Institute) of Phytopathology

"Preparation Method of Anhydrides of Phosphacyclopentenic Acid"

USSR Author's Certificate No 314754, filed 4 Feb 70, published 26 Jan 72 (from Referatinvyy Zhurnal -- Khimiya, Svodnyy Tom, No 19 (II), 1972, Abstract No 19N458 P by I. A. Mel'nikova)

Translation: Anhydrides of phosphacyclopentenic acids which are intermediate products in the synthesis of organophosphorous compounds are prepared during the reaction of corresponding acids with their acid chlorides (AC) by heating the mixture in the absence of solvent and HCl acceptor. A mixture of 0.05 moles of phosphacyclopentenic acid (I) and 0.05 moles of AC of I is heated at 150°C for 30 min. to 1 hr followed by a removal of the AC of I (II). The yield of product was 97%, with m.p. 43-44°C, boiling point 215-220°C/1. Acid chlorides of other acids are synthesized similarly (acid involved, % yield, boiling point in °C/mm are given in that order): 2-methyl-I, 93, 190-195/0.5, $n^{20}D$ 1.5265, d_4^{20} 1.2512; 3-methyl-I, 93, 230-235/1. A mixture of 0.05 mole of II and 0.25 mole of absolute MeOH is heated at ~ 20°C for 10-12 hr and ME (methyl ester) of I is separated. The yield 76%, boiling point 80-82°C/2,

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BLIZNYUK, N. K., et al., USSR Author's Certificate No 314754, filed 4 Feb 70, published 26 Jan 72

$n^{20}D$ 1.4860, d^{20}_{4} 1.1913. To the remaining amount of I 0.06 mole of AC I is added, the mixture is heated at 100-150°C until evolution of HCl stopps (gas), and evoporate at 130-150°C/15. The residue contains II to which 0.25 mole MeOH is added without a preliminary purification. After separating the methyl ester of I by the above method, the yield was 84% (on conversion to starting II). To the remaining residue (white crystals) AC of I is added again and the whole process is repeated again. The yield of a ready product is 86%. The methyl esters of acids (constant, % yield, boiling point in °C/mm, $n^{20}D$, d^{20}_{4} are given in this order) are prepared in analogoud way: 2-methyl-I, 80-90, 100-105/2, ~1.4830, ~1.1343; 3-methyl-I, 63-87, 100-105/2, 1.4860, 1.1476.

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USSR UDC 632.95

BLIZNYUK, N. K., PROTASOVA, L. D., and KVASHA, Z. N., VNII (All-Union Scientific Research Institute) of Phytopathology

"Preparation Method of Anhydrides of Phosphacyclopentenic Acid"

USSR Author's Certificate No 314754, filed 4 Feb 70, published 26 Jan 72 (from Referatinvyy Zhurnal -- Khimiya, Svodnyy Tom, No 19 (II), 1972, Abstract No 19N458 P by I. A. Mel'nikova)

Translation: Anhydrides of phosphacyclopentenic acids which are intermediate products in the synthesis of organophosphorous compounds are prepared during the reaction of corresponding acids with their acid chlorides (AC) by heating the mixture in the absence of solvent and HCl acceptor. A mixture of 0.05 moles of phosphacyclopentenic acid (I) and 0.05 moles of AC of I is heated at 150°C for 30 min. to 1 hr followed by a removal of the AC of I (II). The yield of product was 97%, with m.p. 43-44°C, boiling point 215-220°C/1. Acid chlorides of other acids are synthesized similarly (acid involved, % yield, boiling point in °C/mm are given in that order): 2-methyl-I, 93, 190-195/0.5, $n^{20}D$ 1.5265, d_4^{20} 1.2512; 3-methyl-I, 93, 230-235/1. A mixture of 0.05 mole of II and 0.25 mole of absolute MeOH is heated at ~ 20°C for 10-12 hr and ME (methyl ester) of I is separated. The yield 76%, boiling point 80-82°C/2,

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USSR

BLIZNYUK, N. K., et al., USSR Author's Certificate No 314754, filed 4 Feb 70, published 26 Jan 72

$n^{20}D$ 1.4860, d_4^{20} 1.1913. To the remaining amount of I 0.06 mole of AC I is added, the mixture is heated at 100-150°C until evolution of HCl stopps (gas), and evoporate at 130-150°C/15. The residue contains II to which 0.25 mole MeOH is added without a preliminary purification. After separating the methyl ester of I by the above method, the yield was 84% (on conversion to starting II). To the remaining residue (white crystals) AC of I is added again and the whole process is repeated again. The yield of a ready product is 86%. The methyl esters of acids (constant, % yield, boiling point in °C/mm, n20D, d_4^{20} are given in this order) are prepared in analogoud way: 2-methyl-I, 80-90, 100-105/2, ~1.4830, ~1.1343; 3-methyl-I, 63-87, 100-105/2, 1.4860, 1.1476.

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USSR

UDC 632.95

BLIZNYUK, N. K., KALUTSKIY, L. A., ZHEMCHUZHIN, S. G.

"Procedure for Obtaining O-Chloralkyl Amidothiolphosphates"

USSR Author's Certificate No 296773, filed 28 Nov 69, published 15 Jun 71 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 6N610)

Translation: Substances with the general formula $ClROP(SR^1)(O)NR^2R^3$ having high fungicidal activity (I; R = alkylene; R^1 = alkyl, aryl, aralkyl; R^2 and R^3 = H, alkyl or R^2R^3N = a ring radical) are obtained by the reaction of cyclic alkyleneglycol chlorophosphites with sulfenamides with heating of an equimolar mixture of reagents to 60-100°. A solution of 0.025 moles of ethyleneglycolchlorophosphite in 10 ml of C_6H_6 is added to a solution of 0.025 moles of phenylsulphenmorpholite in 5 ml of C_6H_6 (reaction temperature of the mass $\leq 60°$), it is mixed ~ 1 hour at 50-60°, evaporated and I is obtained ($R = CH_2CH_2$, R^1 = Ph, NR^2R^3 = morpholino) with a yield of 96.3%, a boiling point of 144-5/0.02, d_4^{20} 1.3331, $n^{20}D$ 1.5655. The I was obtained analogously (R^1, NR^2R^3, the yield in percentages, d_4^{20}, $n^{20}D$ are presented) $R = CH_2CH_2$, Ph, NHBu, 100, 1.2560, 1.5690; Ph, piperidino, 97.5, 1.2789, 1.5645; Ph, morpholino, 77.6, 1.2982, 1.5630; Ph, ethylenimino, 93, 1.3549, 1.5720, $R = (CH_2)_3$: Ph, morpholino, 91.7, 1.3057, 1.5612;

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BLIZNYUK, N. K., et al, USSR Author's Certificate No 296772, filed 28 Nov 69, published 15 Jun 71

Ph, piperidino, 86.6, 1.2520, 1.5598; Ph, NHBu, 91.6, 1.2569, 1.5672; Ph, ethyleniminо, 93.1, 1.3283, 1.5710; R = CH (Me) CH (Me): Bu, NEt_2, 77.1, 1.0975, 1.4621.

USSR UDC 632.95

BLIZNYUK, N. K., LEVSKAYA, G. S., MATYUKHINA, YE. N., KVASHA, Z. N.

"Procedure for Obtaining Bisanilidophosphonates or Thiophosphonates"

USSR Author's Certificate No 298592, filed 23 Jan 70, published 25 May 71 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 5N611)

Translation: Substances with the general formula $A[OP(X)(R)NR'R'']_2$ (I; R = alkyl, aryl, aralkyl; R' = lowest alkyl; R" = aryl; A = 2-valent aromatic or aliphatic aromatic radicals; X = O or S) are obtained on interaction of di-N-alkylanilides of phosphonic or thiophosphonic acid with aromatic dioxy compounds at a temperature of 150-180° and a pressure of 10-30 mm with simultaneous distillation of the N-alkylaniline formed. The mixture of 0.01 moles of di-N-methylanilide of phenylphosphonic acid and 0.005 moles of 2,2-bis-(4'-oxy-phenyl)-propane (II) is heated to 170-180°, PhNHMe is distilled off simultaneously at a pressure of 20-30 mm, the residue is ground with ether and I is obtained [R = Ph, R' = Me, R" = Ph, X = O, $A = 4\cdot C_6H_4C(Me_2)C_6H_4\text{-}4'$], with a yield of 90.6% and a decomposition temperature of 45-62°. The I is obtained analogously (R, R', R", X, A, the yield in %, and the melting point in °C are presented): Ph, Me, Ph, S, $4(3.5\text{-}Cl_2C_6G_2(C(Me_2)(3.5\text{-}Cl_2C_6H_2)\text{-}4'$, 97.5, 140-5; $PhCh_2$, Me, Ph, O, $4\text{-}C_6H_4C$

USSR

BLIZNYUK, N. K., et al., USSR Author's Certificate No 298592, filed 23 Jan 70, published 25 May 71

$(Me_2)C_6H_4$-4', 91.6, 122-6; Me, Me, Ph, S; 4-$C_6H_4C(Me_2)C_6H_4$, 4', 98.1, 78-80; Me, Me, Ph, S, 4,4'-$(3\text{-}NH_2C_6H_3)_2SO_2$ 95, 185-7. A mixture of 0.02 moles of $PhCH_2P(O)Cl_2$ and 0.08 moles of $PhNEt_2$ (III) are boiled to cessation of separation of EtCl, 0.01 moles of dichlorodiphenylolpropane are added, it is heated, simultaneously driving off the residue of III and PhNHEt at a pressure of 10-20 mm. The residue is ground with petroleum ether and I is obtained [R = $PhCH_2$, R' = Et, R" = Ph, X = O, A = $ClC_6H_3C(Me_2)C_6H_3Cl$] with a yield of 97.8% and a melting point of 124-5°. The I can be used as fungicides.

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USSR

UDC 632.95

SPIRIDONOV, YU. A., SHCHEGLOV, YU. V., SPIRIDONOVA, G. S., MITESHEV, A. I., KHOKHLOV, P. S., BLIZNYUK, N. K., All-Union Scientific Research Institute of Phytopathology

"A Desiccant"

USSR Author's Certificate No 296545, filed 16 Oct 69, published 10 May 71 (from RZh-Khimiya, No 1(II), Jan 72, Abstract No 1N457 P)

Translation: Substances of the general formula $ROC(S)SCH_2COOSn(R')_3$ (I), where $R = C_2-C_4$-alkyl, $R' = C_3-C_4$-alkyl or aryl are proposed as desiccants. When introduced into the soil in a dose of 10 kg/ha before seeding, compounds I have no noticeable effect on plants, but when the same dose of the compounds is used for treatment in the vegetative stage, they case wilting or death. G. A. Belyayeva.

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USSR UDC: 547.26'118.07

BLIZNYUK, N. K., KVASHA, Z. N., MADZHARA, G. A., All-Union Scientific Research Institute of Phytopathology

"A Method of Making Bis-(Organothiol)-Pentaerythritol Phosphates"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 15, Apr 73, Author's Certificate No 374324, Division C, filed 5 Mar 71, published 14 Jul 73, p 52

Translation: This Author's Certificate introduces: 1. A method of making bis-(organothiol)-pentaerythritol phosphates distinguished by the fact that pentaerythritol chlorophosphite is reacted with sulphenyl chlorides and acetic acid in an inert organic solvent with subsequent isolation of the goal product by conventional methods. 2. A modification of this method distinguished by the fact that chloroform is used as the inert organic solvent. 3. A modification of the method covered in point 1 distinguished by the fact that the process si carried out at a temperature from -40 to $+20^{\circ}$C. 4. A modification of the process covered in point 1 distinguished by the fact that the pentaerythritol and phosphorus trichloride in an inert organic solvent such as chloroform in the presence of catalytic quantities of an organic base such as

USSR

BLIZNYUK, N. K., et al., Otkrytiya, Izobreteniya, Primyshlennyye Obraztsy, Tovarnyye Znaki, No 15, Apr 73

pyridine. 5. A modification of the procedure covered in point 1 distinguished by the fact that the sulphenyl chloride is the product of interaction of an organic thiol or disulfide with an equimolar quantity of chlorine or sulfuryl chloride.

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USSR

BABII, V. V., BLIZNYUK, N. K., DENISENKOVA, R. N., KOLOMIYETS, A. F.,
STREL'TSOV, R. V., FILIN-KOLDAKOV, B. V.

"Method of Fighting Undesirable Vegetation"

USSR Author's Certificate No 303038, filed 20/04/67, published 5/07/71. (Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract No 4N705P by T. A. Belyaeva).

Translation: In order to increase the herbicidal properties of α-(2, 4, 5-tricholorophenoxy)-propionic acid, it is suggested that it be used as its benzylester, which is more active than the other esters of this acid and has very low volatility.

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USSR

BLIZNYUK, N. K., KVASHA, Z. N., MADZHARA, G. A., MARKOVA, L. I.

'Method of Producing Arylthiophosphonic or Benzylthiophosphonic Acids"

USSR Author's Certificate No 298593, filed 30/03/70, published 4/05/71. (Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract No 4N585P by T. A. Belyaeva).

Translation: Substances with the general formula $R_mC_6H_{5-m}(CH_2)_nP(S)Cl_2$ (I) (R=H, alkyl, halide; n=0 or 1; m=1-5), used in the synthesis of pesticides, are produced by reacting PCl_3 with $R_mC_6H_{5-m}(CH_2)_nSH$ in a molar ratio of 3-5:1. $PhCH_2SH$ is added to PCl_3, mixed 0.5-1 hr at about 20° and boiled 2 hr. The solution is heated 2.5-3 hr in an autoclave of stainless steel at 250-270°, cooled and I is separated (R=H, m=n=1), b. p. 122-5°/2-3, $n^{20}D$ 1.6140. Also produced were I (presented are R_m, n; yield in %, b. p. in °C, b. p. in °C/mm): H, 0, 90, -, 120-3/5; 2.5-Cl_2, 0, 72, -, 150-3/2; p-tert-Bu, 0, 80, 39-41, 153-6/2; Cl_5, 0, 65, 110-4, -.
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USSR UDC 632.95

BLIZNYUK, N. K., STREL'TSOV, R. V., KHOKHLOV, P. S., and ZHEMCHUZHIN, S. G., All-Union Scientific Research Institute of Phytopathology

"A Method of Synthesizing Dithiophosphonic Acid Amide-Esters"

USSR Author's Certificate No 259879, filed 17 Jan 69, published 12 Apr 70 (from RZh-Khimiya, No 3, 10 Feb 71, Abstract No 3N557 P)

Translation: Dithiophosphonic acid amide-esters of the general formula $RCONHCH_2CH_2SP(S),(R')NR''R'''$ (I) (R = aryloxyalkyl; R' = alkylaralkyl or aryl; R'' and R''' = H, alkyl, or aralkyl), which have a wide spectrum of physiological activity and may be used as pesticides, are synthesized by the reaction of anhydrides of dithiophosphonic acids with primary or secondary amines in the presence of tertiary amines, followed by treating the resultant dithiophosphonic acid amide salt with RCOCl and ethylenimine. Twenty five thousandths mole of Et_3N is added at approximately 20°C (cooling) with agitation to a mixture of 0.025 mole of methyldithiophosphonic acid anhydride, 0.025 mole of $BuNH_2$ and 30 ml of C_6H_6. The mass is stirred for one hour at 20°C and for two hours at 50°C, after which a solution of 0.025 mole of $2,4\text{-}Cl_2C_6H_3OCH_2COCl$ in 15 ml of C_6H_6 is added slowly, stirred

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BLIZNYUK, N. K., et al., USSR Author's Certificate No 259879, filed 17 Jan 69, published 12 Apr 70 (from RZh-Khimiya, No 3, 10 Feb 71, Abstract No 3N557 P)

for two hours, and treated with a solution of 0.025 mole of ethylenimine in 5 ml of C_6H_6. The mixture is agitated for one hour at 20°C, 3 hours at 50°C, cooled and the Et_3N hydrochloride is removed by filtration. The filtrate is washed with water, dried, and after concentration by evaporation under vacuum, compound I is obtained in the residue (given are R, R', R'', R''', empirical formula, yield in %, and $n^{20}D$): 2,4-$Cl_2C_6H_3OCH_2$, Me, H, Bu, $C_{15}H_{23}Cl_2N_2O_2PS_2$, 89.5, 1.5865; 2,4,5-$Cl_3C_6H_2OCHMe$, Ph, H, Bu, $C_{21}H_{26}Cl_3N_2O_2PS_2$, 87.5, 1.5975; 2,4-$Cl_2C_6H_3OCH_2$, $PhCh_2$, H, Bu, $C_{21}H_{27}Cl_2N_2O_2PS_2$, 92, 1.6080; 2,4-$Cl_2C_6H_3OCH_2$, $PhCH_2$, Et, Et, $C_{21}H_{27}Cl_2N_2O_2PS_2$, 92, 1.6050; 2,4-$Cl_2C_6H_3OCH_2$, $PhCH_2$, H, $PhCH_2$, $C_{24}H_{25}Cl_2N_2O_2PS_2$, 93.8, 1.6285; 2,4-$Cl_2C_6H_3OCH_2$, $PhCH_2$, H, Ph, $C_{23}H_{23}Cl_2N_2O_2PS_2$, 96.1, 1.6235.

USSR

UDC 632.95

BLIZNYUK, N. K., LEVSKAYA, G. S., KVASHA, Z. N., and VARSHAVSKIY, S. L.,
All-Union Scientific Research Institute of Phytopathology

"A Method of Synthesizing 1,4-bis-(dialkyl- or dibenzyltrithiophosphoryl)-benzene"

USSR Author's Certificate No 259881, filed 1 Jul 68, published 28 May 70 (from RZh-Khimiya, No 2, 25 Jan 71, Abstract No 2N566 P)

Translation: Compounds of formula $C_6H_4[P(S)(SR)_2]_2$-1,4 (I) (R is an unsubstituted or substituted alkyl or benzyl) are synthesized by interacting 1,4-bis-(dichlorothiophosphoryl) benzene (II) with alkyl or benzyl halides and H_2S at 120-70°C in the presence of catalytic quantities of organic base (C_5H_5N). For instance, two drops of C_5H_5N are added to a mixture of 0.02 mole of II and 0.09 mole of $PhCH_2Cl$, and H_2S is bubbled through at 130-40°C for 10-12 hours, and then for 3-4 hours at 150-60°C until liberation of HCl ceases. Upon cooling, the resultant product is compound I (R = $PhCH_2$), melting point 114-5°C (PhH), yield 80.7 percent. The following compounds (I) are synthesized analogously (given are R, melting point in °C or d_4^{25} and $n^{25}D$): 4-$ClC_6H_4CH_2$, 137-8 (ethyl amine); 2,4-$Me_2C_6H_3CH_2$, 94-5; C_7H_{15}, 1.071, 1.5072. Compounds I can be used as insecticides or as additives to lubricants.

USSR UDC 547.241.07

BLIZNYUK, N. K., KVASHA, Z. N., PROTASOVA, L. D., MADZHARA, G. A., VARSHAVSKIY, ~~S. L., LIBMAN~~, B. Ya., and BARANOV, Yu. I., All-Union Scientific Research Institute of Phytopathology

"A Method of Making Dihalophosphines"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 5, Feb 71, Author's Certificate No 292988, Division C, filed 10 Nov 69, published 15 Jan 71, p 102

Translation: This Author's Certificate introduces: 1. A method of making dihalophosphines by interacting a hydrocarbon halide or polyhalide with white phosphorus or a phosphorus trihalide with the application of heat and in the presence of a catalyst, with subsequent isolation of the goal product by conventional methods. As a distinguishing feature of the patent, the yield of the goal product is increased by using selenium, selenium anhydride or phosphorus selenide as the catalyst. 2. A modification of this method distinguished by the fact that the process is done at a temperature of 250-380°C.

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UDC 547.241.07

BLIZNYUK, N. K., KVASHA, Z. N., and MADZHARA, G. A., All-Union Scientific Research Institute of Phytopathology

"A Method of Synthesizing Trithiophosphonates"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 5, Feb 71, Author's Certificate No 292985, Division, C, filed 20 Jan 69, published 15 Jan 71, p 101

Translation: This Author's Certificate introduces: 1. A method of making trithiophosphonates by interacting phosphorus acid chlorides with alkyl halides and hydrogen sulfide in the presence of a catalyst such as pyridine with heating. As a distinguishing feature of the patent, the method is simplified by using phosphonic acid dichloride as the phosphorus acid chloride. 2. A modification of this method distinguished by the fact that the process is done at a temperature of 120-170°C.

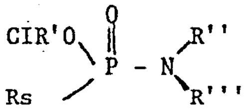
USSR UDC 547.298.1'26.118.07

BLIZNYUK, N. K., KALUTSKIY, L. A., and ZHEMCHUZHIN, S. G., All-Union Scientific Research Institute of Phytopathology

"A Method of Making O-Chloroalkyl-amidothiolphosphates"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 9, Mar 71, Author's Certificate No 296773, Division C, filed 28 Nov 69, published 2 Mar 71, pp 82-83

Translation: This Author's Certificate introduces a method of making O-chloroalkyl-amidothiolphosphates of the general formula



where R is an alkyl, aryl or aralkyl, R' is an alkylene, R'' and R''' are hydrogen, an alkyl, or form together with a nitrogen atom a cyclic system based on phosphorus acid chlorides. As a distinguishing feature of the patent, the process is simplified by interacting cyclic alkylene glycol

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BLIZNYUK, N. K., et al., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 9, Mar 71, Author's Certificate No 296773, Division C, filed 28 Nov 69, published 2 Mar 71, pp 82-83

chlorophosphites with sulfenamides with subsequent isolation of the goal product by conventional methods. 2. A modification of this method distinguished by the fact that the process is carried out with heating of an equimolar mixture of the reagents to 60-100°C.

USSR

BLIZNYUK, N. K., LEVSKAYA, G. S., KIRILINA, L. E., VARSHAVSKIY, S. L., All-Union Institute of Plant Pathology

"A Method for Preparing 1,4-Phenylenebisthiophosphonic Acid Esters"

USSR Author's Certification No 255267, class 12o, 26/01 (C 07 f), filed 17 Sep 68, published 25 Mar 70 (from RZh-Khimiya, No 21 (II), 10 Nov 70, Abstract No N562 P by I. A. Mel'nikova)

Translation: Compounds with the general formula $1,4\text{-}/R_2P(S)7_2C_6H_4$ (I) (R = aryloxy-, arylthio-, alkylthio group), active as pesticides or used as intermediates for synthesizing them, are obtained by reaction of 1,4-bis-(dichlorothiophosphoryl)-benzol (II) with phenols, thiophenols, mercaptans in the presence of a catalyst at 120-190°. For example, a mixture of 0.01 mole of II, 0.06 mole of thiophenol, 0.01 g of P_2S_5 and 0.016 g of C_5H_5N is heated for 2 hours at 140-160° until HCL (gas) ceases to evolve, blowing dry N_2 through the reaction mixture. The mixture is allowed to evaporate, forming in the residue I (R = PhS), yield 100%, boiling point 173-4°. I is prepared in a similar fashion: (R, yield in %, boiling point

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USSR

BLIZNYUK, N. K., et al, USSR Author's Certification No 255267, class 12o, 26/01 (C 07 f], filed 17 Sep 68, published 25 Mar 70 (from RZh-Khimiya, No 21 (II), 10 Nov 70, Abstract No N562 P by I. A. Mel'nikova)

in °C or nD (t) are given)7: 4-ClC_6H_5S, 62, 183-3; BuS, 93.2, 1.6130 (24); n-$C_6H_{13}S$, 95.8, 1.5755 (22); n-$C_8H_{17}S$, 96.5, 1.5590 (20); PhO, 100, 88-9; 4-$NO_2C_6H_4O$, 95.4, 205-7; 2-ClC_6H_4O, 83.5, 125-6; 4-ClC_6H_4O, 82.5, 145-6; 2,4-$Cl_2C_6H_3$, 86.5, 146-7; 2,4,5-$Cl_3C_6H_2$, 70.9, 193-4.

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USSR

BLIZNYUK, N. K., KVASHA, Z. N., VARSHAVSKIY, MADZHARA, G. A., All-Union Institute of Plant Pathology

"A Method for Preparing Mixed Thiophosphonates"

USSR Author's Certificate No 239946, class 12a, 23/03, (C 07 f), filed 20 Jun 66, published 13 Feb 70 (from RZh-Khimiya, No 21 (II), 10 Nov 70, Abstract No 21 N559 P by I. A. Mel'nikova)

Translation: Compounds with the general formula RP(S)(OR')(OR") (I) (R = Me, Ph, $PhCH_2$; R' = Et, R" = alkyl, naphthyl, subst. aryl), active as pesticides, are obtained by reaction of chlorides of thiophosphinic acids with alcohols at 60-100° without a HCl acceptor in the presence of a catalyst (derivatives of P acids, their mixtures with bases, boron trifluoride ester, heterocyclic bases). For example, a mixture of 0.03 g mole of MeP(S)(OPh)Cl, 0.09 mole of abs. EtOH and 74 mg (1 mole %) beta-diethylaminoethyltrithiomethylphosphonate (II) is boiled for 4 hours and allowed to evaporate, producing in the residue I (R = Me, R" = Ph, R' = Et), yield 92.7%, boiling point 102-121, $n^{20}D$ 1.5370, d_4^{20}1.1486. I (R'

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USSR

BLIZNYUK, N. K., USSR Author's Certificate No 239946, class 12a, 23/03, (C 07 f), filed 20 Jun 66, published 13 Feb 70 (from RZh-Khimiya, No 21 (II), 10 Nov 70, Abstract No 21 N559 P by I. A. Mel'nikova)

= Et, R, R", and catalyst are given, yield in %, boiling point in °C, $n^{20}D$, d_4^{20}) is prepared in a similar fashion: Me, 2,4,5-$Cl_3C_6H_2$, $P_2S_5 + C_5H_5N$, 67, 157-9/1, 1.5683, 1.4159; Me, 2-$MeOC_6H_4$, II, 88, 139-41/1, 1/5400, 1.1922; Me, iso-Bu, II, 81, 65-6/2, 1.4585, 1.0010; Me, 2-ClC_6H_4, II 65, 125-7/1, 1.5310, 1.3062; Me, 2,4-$Cl_2C_6H_3$, II, 77, 142-3/0.5, 1.5500, 1.3177; Me, beta-naphthyl, II, 70, 176-8/0.5, 1.5720, 1.1811; $PhCH_2$, II, 58, 219-22/1, 1.5850, 1.3230; Me, alpha-naphthyl, $(PhO)_2P(S)SK$, 66, 176-9/1, 1.5980, 1.2210; Ph, beta-naphthyl, $MePS_2 + Et_3N$, 76, 237-40/1, 1.6260, -; Ph, 2-$MeOC_6H_4$, $MePS_2 + C_5H_5N$, 61, 174-6/1, 1.5775, 1.1627.

USSR

UDC: 632.95

BLIZNYUK, N. K., PROTASOVA, L. L., KVASHA, Z. N., LEVSKAYA, G. S., VARSHAVSKIY, S. L., and BARANOV, Yu. I., A--Union Research Institute of Plant Pathology

"A Method for Preparing 1,4-Phenylene-bis-O-Alkyl-oxy-2,2,2,-Trichloroethyl-phosphinates"

USSR Author's Certificate No 255266, filed 27 Jun 68, published 24 Mar 70 (from RZh-Khimiya, No 22, 25 Nov 70, Abstract No 22 N653 P by G. V. Kuznetsova)

Translation: Phosphinates with the general formula $CCL_3CH(OH)P(OR)(O)C_6H_4P(O)(OR)CH(OH)CCl_3$ (I) (R=C_1-C_4-alkyl; from here on the substitutes are in the para-position) are obtained from the reaction of $ROPH(O)C_6H_4PH(O)OR$ with $CCl_3CH(OH)_2$ in an organic solvent medium under conditions of azeotropic distillation of water. The original phosphonites are formed by the action of excess alcohol on $Cl_2PC_6H_4PCl_2$ (II). A mixture of 0.75 mole of $C_6H_4Cl_2$, 1 g--atom of white phosphorus, 300 ml of PCl_3, and 3 g of I_2 is heated for 6 hours in a stainless steel autoclave at 340-60°. After cooling the excess PCl_2 is driven off and 143.3 g (63.3%) II is obtained by distilling the residue, boiling point 132-3°/1, melting point 58-9°. A solution of 0.02 mole of II in 30 ml of CCl_4 is added at 0-5° and while being mixed to 0.4 mole of ab-

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BLIZNYUK, N. K., et al, USSR Author's Certificate No 255266, filed 27 Jun 68, published 24 Mar 70 (from RZh-Khimiya, No 22, 25 Nov 70, Abstract No 22 N653 P by G. V. Kuznetsova)

solute MeOH. The excess MeOH and HCl is removed under vacuum (toward the end at 80°) and 0.04 mole of $CCl_3OH(OH)_2$ and 50 ml of C_6H_6 is added to the residue. The mixture is boiled with Dean-Stark packing until water is no longer driven off. C_6H_6 is distilled under vacuum and I (R=Me) obtained in the residue, yield 96% (in II), melting point 146-9°. The next I are obtained in a similar fashion (R, yield in %, and melting point in °C (ethyl alcohol) are given): Et, 97, 186-7; Pr, 85, 190-1; Bu, 61, 186-7; and iso-Bu, 66, 198-9. I can be used as intermediate products in the synthesis of physiologically active substances.

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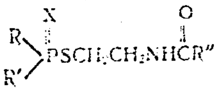
USSR UDC: 547.495.1'26.118.07

BLIZNYUK, N. K., STREL'TSOV, R. V., KIRILINA, L. E., ZHEMCHUZHIN, S. G., KHOKHLOV, P. S., All-Union Scientific Research Institute of Phytopathology

"A Method of Producing Organophosphorus Compounds"

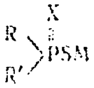
Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 28, 1970, Soviet Patent No 2[illegible]75, Class 12, filed 15 May 69, p 26

Abstract: This Author's Certificate introduces: 1. A method of producing organophosphorus compounds of the general formula



$$\begin{matrix} R \\ R' \end{matrix}\!\!>\overset{X}{\overset{\|}{P}}SCH_2CH_2NH\overset{O}{\overset{\|}{C}}R''$$

where X is oxygen or sulfur, R is an alkyl, aryl, aralkyl, alkoxyl, alkylthio, aryloxy or arylthio, R' is an alkoxy, alkylthio, aryloxy, or arylthio, benzyloxy, benzylthio or amino group, and R" is an alkyl, alkoxyl or amino group. As a distinguishing feature of the patent, the yield of the goal products is increased by interacting amido- or ether salts od phosphorus acids of the general formula



$$\begin{matrix} R \\ R' \end{matrix}\!\!>\overset{X}{\overset{\|}{P}}SM$$

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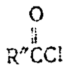
BLIZNYUK, N. K., et al, Otkrytiya. Izobreteniya. Promyshlennyye Obraztsy, Tovarnyye Znaki, No 28, 1970, Soviet Patent No 260475, Class 12, filed 15 May 69, p 26

where X, R and R' have the meanings listed above, and M is an alkali metal or substituted ammonium, with acid chlorides of the general formula



$$R''\overset{\overset{\displaystyle O}{\|}}{C}Cl$$

where R" has the meanings listed above, in an inert organic solvent followed by ethylenimine treatment of the reaction mass and isolation of the goal product by conventional methods. 2. A modification of this method in which the process is carried out at a temperature of 20-80°C.

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USSR UDC 632.95

KHOKHLOV, P. S., SAVENKOV, N. F., BLIZNYUK, N. K., CHAYEVA, T. I., All-Union Scientific Research Institute of Phytopathology, Moscow, Ministry of Agriculture USSR

"Method of Obtaining Amides of Dialkylphosphoric Acid"

USSR Author's Certificate No 248659, Cl. 12o, 16 (C 07c), filed 4 Mar 68, published 26 Feb 70 (from RZh-Khimiya, No 19 (II), 10 Oct 70, Abstract No 19 N576P by L. V. RAZVODOVSKAYA)

Translation: Compounds of the formula $RC(O)CH=CHNHP(O)(OR')_2$ (I), where R = alkyl, aryl, R' = alkyl, are obtained by the interaction of $RC(O)CH=CHNH_2$ (II) with $ClP(O)(OR')_2$ (III) in the presence of Et_3N. To a solution of 0.02 mole II (R = 4-ClC_6H_4) and 0.02 mole Et_3N in 20 ml benzene, 0.02 mole III (R' = Et) in 5 ml benzene is added, heated 4 hours at 75-80°, and filtered, the filtrate is evaporated, and I (R = 4-ClC_6H_4, R' = Et) is obtained, yield 85.2%, melting point 172-4°. Analogously obtained are the following I (shown are R, R', yield, melting point): 4-ClC_6H_4, Bu, 86.3, 179-80; 4-BrC_6H_4, Bu, 55.7, 207-9 and I (R = H, R' = Et), yield 94, $n^{20}D$ 1.4802, d_4^{20} 1.1562. I can be employed as pesticides.

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USSR UDC 632.95

BLIZNYUK, N. K., MATYUKHINA, YE. N., LEVSKAYA, G. S., All-Union Scientific Research Institute of Phytopathology, Moscow, Ministry of Agriculture USSR

"Method of Obtaining O-Alkyltrichloromethyl Thiophosphonates"

USSR Author's Certificate No 251576, Cl. 12o, 26/01, (C 07 f), filed 8 Apr 68, published 20 Feb 70 (from RZh-Khimiya, No 19 (II), 10 Oct 70, Abstract No 19 N578P by G. V. KUZNETSOVA)

Translation: Compounds of formula $Cl_3CP(S)(OH)OR$ (I) (R = alkyl) are obtained by the reaction of $Cl_3CP(S)Cl_2$ with lower alcohols at 60-120° in the presence of catalytic quantities of C_5H_5N. To 0.2 mole absolute MeOH containing 20 mg C_5H_5N 0.06 mole $Cl_3CP(S)Cl_2$ is added. The mixture is boiled 3-5 hours, the excess MeOH distilled and I (R = Me) is obtained, yield 93.6 percent, d_4^{20} 1.6431, $n^{22}D$ 1.5450; NH_4 salt, $C_2H_7Cl_3NO_2PS$, decomposition temperature > 185°; K salt, $C_2H_3Cl_3KO_2PS$, decomposition temperature > 300°. Analogously obtained are the following I (enumerated are R, yield

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BLIZNYUK, N. K., et al, USSR Author's Certificate No 251576, Cl. 12o, 26/01, (C 07 f), filed 8 Apr 68, published 20 Feb 70 (from RZh-Khimiya, No 19 (II), 10 Oct 70, Abstract No 19 N578P by G. V. KUZNETSOVA)

in percent, d_4^{22} and n^{22-23}_D): Et, 94.6, 1.5669, 1.5360; and Pr, 84.5, 1.5436, 1.5350. I are intermediates of the synthesis of biologically active substances.

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1/2 011 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--ANOMALOUS REACTION OF ARYLTHIOETHANOLS WITH PHORPHORUS TRICHLORIDE
-U-

AUTHOR-(05)-KHOKHLOV, P.S., KALUTSKIY, L.A., NAZAROV, T.A., MOCHALKIN,
A.I., BLIZNYUK, N.K.

COUNTRY ~~OF INFO--USSR~~

B

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 795-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

OPIC TAGS--ETHANOL, PHOSPHORUS CHLORIDE, ORGANIC SULFUR COMPOUND, ARYL
RADICAL, ORGANIC SYNTHESIS

ONTROL MARKING--NO RESTRICTIONS

OCUMENT CLASS--UNCLASSIFIED
ROXY REEL/FRAME--3006/1502 STEP NO--UR/0079/70/040/004/0795/0797

IRC ACCESSION NO--AP0135163

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--27NOV70
IRC ACCESSION NO--AP0135163
BSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDING 0.01 MOLE PCL SUB3 TO 0.03
MOLE PHSCH SUB2 CH SUB2 OH AND 0.05 MOLE ETHYLENE OXIDE IN MEPH AT
0-5DEGREES, HOLDING AT 10-15DEGREES UNTIL REACTIVE CL HAD BEEN CONSUMED,
AND EVACUATING THE MIXT. SEVERAL HR AT 100DEGREES GAVE AFTER ADDN. OF
0.01 MOLE H SUB2 O AND HEATING TO 100DEGREES, A LITTLE PHSCH SUB2 CH
SUB2 OH, B SUB2 110-17DEGREES, AND 80.9PERCENT (PHSCH SUB2) SUB2, M.
61-2DEGREES. SIMILARLY WERE PREPD. THE ANALOGS WITH ARYL GROUPS SHOWN:
P-MEOC SUB6 H SUB4 (I) M. 102-3DEGREES; O,CLC SUB6 H SUB4, M.
75-6DEGREES; AND P,CLC SUB6 H SUB4, M. 87-8DEGREES. IF PCL SUB3 IS
REPLACED BY PHCH SUB2 PCL SUB2 THE 1ST REACTIONGAVE THE SAME PRODUCT BUT
IN 61PERCENT YIELD; REPLACING ETHYLENE OXIDE BY ET SUB3 N GAVE A
68PERCENT YIELD OF THE SAME PRODUCT; IF HCL ACCEPTOR IS OMITTED, THE
REACTION WITH PCL SUB3 GIVES MAINLY CLCH SUB2 CH SUB2 SPH. HEATING 3
MOLES PHSCH SUB2 CH SUB2 OH WITH 1 MOLE (ET SUB2 N) SUB3 P AT
120-30DEGREES WITH DISTN. OF ET SUB2 NH GAVE AFTER FINIAL TREATMENT WITH
1 MOLE H SUB2 O AT 90-100DEGREES 2 HR, 77PERCENT (PHSCH SUB2) SUB2.
HEATING 0.06 MOLE PHSCH SUB2 CH SUB2 OH WITH 0.03 MOLE H SUB3 PO SUB3
AND A TRACE H SUB2 SO SUB4 IN XYLENE 3 HR WITH SEPN. OF H SUB2 O GAVE
68PERCENT (PHSCH SUB2) SUB2. REACTION OF P,MEOC SUB6 H SUB4 SK WITH
(BRCH SUB2) SUB2 IN ETOH GAVE 83PERCENT I; ANALOGS WERE PREPD. SIMILARLY
FOR STRUCTURE PROFF. FACILITY: VSES. NAUCH.-ISSLED. INST.
FITOPATOL., USSR.

UNCLASSIFIED

USSR UDC 632.95

BLIZNYUK, N. K., KVASHA, Z. N., VARSHAVSKIY, S. L., and MADSHARA, G. A., All-Union Scientific Research Institute of Phytopathology, Moscow, Ministry of Agriculture USSR

"A Method of Preparing Mixed Esters of Dithiophosphonic Acids"

USSR Authors; Certificate No 222384, filed 26 Oct 66, published 20 Jan 70 (from Referativnyy Zhurnal Khimiya, No 17, 10 Sept 70, Abstract No 17 N594 P)

Translation: A mixture of 0.03 g-mole of acid chloride of S-ethyl methylthiophosphante, 0.12 g-mole alcohol, 1 mol% P_2S_5 and 2 mol% pyridine is heated for 4 hours at 90-100°C, and O,S-diethyldithiophosphonate, $C_5H_{13}OPS_2$, is isolated with a yield of 82% and a boiling point of 78-80°C/2, $n^{20}D$ = 1.5310. O-Methyl-S-phenyldithipmethylphosphonate $C_8H_{11}OPS_2$ is also prepared with a yield of 100%, molting point of 46-7°C, $N^{20}D = 1.6125$.

T. A. Belyayova

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USSR UDC: 547.26'118.07

BLIZNYUK, N. K., LEVSKAYA, G. S., MATYUKHINA, Ye. N., and VARSHAVSKIY, S. L., All-Union Scientific Research Institute of Phytopathology, Moscow, Ministry of Agriculture USSR

"A Method of Synthesizing 1,4-bis-(O-alkyl-O-arylthiophosphoryl)-benzenes"

Moscow, Otkrytiya, Izobretdniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 14, 1970, Author's Certificate No 268420, filed 22 May 68, p 23

Abstract: This Author's Certificate introduces: 1. A method of synthesizing 1,4-bis-(O-alkyl-O-arylthiophosphoryl)-benzenes of the general formula

where Ar is a substituted or unsubstituted phenyl or napthyl, and R is an alkyl. As a distinguishing feature of the patent, the appropriate 1,4-bis-(O-arylchlorothiophosphoryl)-benzenes are interacted with alcohols in an organic solvent such as benzene with the application of heat in the presence of an organic base such as pyridine as a catalyst, with subsequent isolation of the

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BLIZNYUK, N. K., et al., Otkrytiya, Izobretneiya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 14, 1970,

goal product by conventional methods. 2. The method described in (1) is distinguished by the fact that the temperature reaches 60-90°C.

USSR UDC 547.241.07

BLIZNYUK, N. K., PROTASOVA, L. D., KVASHA, Z. N., and VARSHAVSKIY, S. L., All-Union Scientific Research Institute of Phytopathology, Moscow, Ministry of Agriculture USSR

"A Method of Synthesizing 1,4-Phenylenehexabenzyldiphosphonium Chlorides"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 14, 1970, Author's Certificate No 268418, filed 7 Jun 68, p 23

Abstract: This Author's Certificate introduces: 1. A method of synthesizing 1,4-phenylenehexabenzyldiphosphonium chlorides. The distinguishing feature of this procedure is that 1,4-phenylene-bis-dichlorophosphine is interacted with substituted bensylchloride and white phosphorus in the presence of heat with subsequent isolation of the goal product by conventional methods. 2. The method described in (1) is distinguished by the fact that the temperature reaches 170-220°C.

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USSR UDC 547.558.1.26'.118.07

BLIZNYUK, N. K., LEVSKAYA, G. S., and VARSHAVSKIY, S. L., All-Union Scientific Research Institute of Phytopathology, Moscow, Ministry of Agriculture USSR

"A Method of Synthesizing Bis-(aryloxychlorothiophosphoryl)-benzenes"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 14, 1970, Author's Certificate No 268421, filed 1 Mar 68, pp 23-24

Abstract: This Author's Certificate introduces: 1. A method of synthesizing bis-(aryloxychlorothiophosphoryl)-benzenes of the general formula

where Ar is an unsubstituted phenyl, or a chloro- or nitrosubstituted phenyl, or an unsubstituted naphtyl. As a distinguishing feature of the patent, 1,4-bis-(dichlorothiophosphoryl)-benzene is interacted with a substituted phenyl or naphthyl with heating in the presence of catalytic quantities of salts of esters of polythiophosphoric or thiophosphoric acids or semiproducts of

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BLIZNYUK, N. K., et al., Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 14, 1970

their synthesis such as a mixture of phosphorus pentasulfide or pyridine pentasulfide in an organic solvent such as xylene with subsequent isolation of the goal product by conventional methods.
2. The method described in (1) is distinguished by the fact that the temperature reaches 100-200°C.

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USSR UDC 632.95

BLIZNYUK, N. K., PROTASOVA, L. D., and KVASHA, A. N., All-Union Scientific Research Institute of Phytopathology, Moscow, Ministry of Agriculture USSR

"Method of Preparing Tin-Containing Dithiophosphonates"

USSR Authors' Certificate No 248673, filed 7 May 68, published 22 Jan 70, (from RZh-Khimiya, No 20 (II), 25 Oct 70, Abstract No 20 N554P by S. LYUBARSKAYA)

Translation: Compounds of the formula /zop9s09r0ssn(R_2')7$_2$0 (I; R = alkyl, aryl, aralkyl; R' = alkyl; Z = substituted or unsubstituted aryl) are obtained by the interaction of the anhydride of dithiophosphonic acid with bis-(arylhydroxydialkyltin)-oxide at 50-100°. To a solution of 0.014 mole $(MePS)_2S_2$ in 10 ml ClPh is added 0.007 mole /2,4,5-Cl_3-$C_6H_2OSn(Bu_2)$/$_2$0, and on conclusion of the exothermic reaction it is heated for 2 hours in a boiling water bath; the solvent is distilled off and bis-(2,4,5-trichlorophenoxymethyldithiophosphinyldibutyltin)- oxide, $n^{20}D$ 1.6005, melting point 87-90°, is obtained. Analogously obtained are the following I (R' = Bu; given are R, A, melting or softening point, $n^{20}D$): Me, alpha-naphthyl, 47-50, --; Ph, 2,4-$Cl_2C_6H_3$, 58-60, --; Ph, p-$NO_2C_6H_4$, 50-2, 1.635; $PhCH_2$, Ph, 52-4, 1.6083; $PhCH_2$, 2,4-

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BLIZNYUK, N. K., et al., USSR Authors' Certificate No 248673

$Cl_2C_6H_3$, 87-9, 1.6145. I's can be used as physiologically active substances and catalysts.

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USSR UDC 632.95

BLIZNYUK, N. K., PROTASOVA, L. D., KVASHA, Z. N., VARSHAVSKIY, S. L., All-Union Scientific Research Institute of Phytopathology, Moscow, Ministry of Agriculature USSR

"Method of Preparing Quaternary Phosphonium Chlorides"

USSR Authors' Certificate No 250134, filed 23 Mar 68, published 4 Jan 70 (from RZh-Khimiya, No 20 (II), 25 Oct 70, Abstract No 20 N553P by I. M. MIL'SHTEYN)

Translation: Compounds of the general formula /‾(R) (R')P(CH_2X) (CH_2-Y)_7$^+$Cl$^-$ (I) (R and R' = alkyl, Ph, PhCH_2, substituted Ph or PhCH_2; and X and Y are substituted or unsubstituted aryl)_7, which may possess physiological activity, are obtained by conjugated alkylation of chloro or dichlorophosphines with benzyl chlorides at 170-320°. I_2 or Lewsi acids can be used as catalyst. The process can be initiated by UV irradiation. A mixture of 0.03 mole benzyldichlorophosphine, 0.04 gram atom white Ph and 0.135 mole PhCH_2Cl is heated in a stream of N_2 until distillation of PCl_3 ceases (3-3.5 hours); excess PhCH_2Cl is distilled off the residue is dissolved in alcohol, and kept in a crystallizer 19-20 hours, and I (R = R' = PhCH_2, X = Y = Ph) is separated out,

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