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CSO: 1860-W

Acc. Nr: A70046125 Abstracting Service: INTERNAT. AEROSPACE ABST. 5-70 Ref. Code: UR0057

A70-25120 # Investigation of the rapid expansion of thin-walled metal cylinders in a strong magnetic field (Issledovanie bystrogo rasshireniia tonkostennykh metallicheskikh tsilindrov v sil'nom magnitnom pole). V. P. Kniazev and G. A. Shneerson (Leningradskii Politekhnicheskii Institut, Leningrad, USSR). *Zhurnal Tekhnicheskoi Fiziki*, vol. 40, Feb. 1970, p. 360-371. 18 refs. In Russian.

Experimental investigation of the high-speed deformation of thin-walled aluminum-alloy cylinders under the action of pulsed magnetic pressure. High-speed streak camera oscillography of the magnetic field is used to determine the instantaneous values of the pressure and the behavior of the deformation. It is shown that Maxwell's model of an elastoplastic body with an explicit relation between relaxation time, stresses, and temperature provides the best approximation to the experimental data obtained. V.P.

REEL/FRAME
19781202

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SELECTIVE SEPARATION OF NICKEL AND COBALT FROM AMMONIA SOLUTIONS BY FRACTIONAL PRECIPITATION -U-
AUTHOR-(04)-KRASKOVSKIY, G.I., LESHCH, I.YU., FRUMINA, L.M., SHNEYERSON, YA.M.
COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(3), 32-3

DATE PUBLISHED----- -70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SEPERATION, AMMONIA, AQUEOUS SOLUTION, COBALT, NICKEL, CHEMICAL PRECIPITATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1900 STEP NO--UR/0136/70/043/003/0032/0033

CIRC ACCESSION NO--AP0132162
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--13NOV70

2/2 014

CIRC ACCESSION NO--AP0132162

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INCONSISTENCY IN THE DATA ON THE PPTN. OF NI AND CO FROM HN SUB3 SOLNS. BY DISTN. IS ATTRIBUTED TO THE SIMULTANEOUS PRESENCE OF SOME FORMS OF CO AMMINES: CO PRIME2POSITIVE HEXAAMMINE, PENTAAMMINE, AND AMMINE. THE BEHAVIOR DURING REMOVAL OF NI AND CO BY DISTN. OR EVACUATION AT 20, 40, 60, AND 80DEGREES IS SHOWN. THE MOST EASILY DECOMPD., DURING DISTN., ARE THE CO PRIME2POSITIVE COMPLEXES, FOLLOWED BY NI COMPLEXES, CO PRIME3POSITIVE PENTAMMINE, AND FINALLY CO PRIME3POSITIVE HEXAAMMINE. THE LAST IS SUFFICIENTLY STABLE, IN THAT BELOW 40DEGREES, NO NOTICEABLE PPTN. OF CO DURING DISTN. WAS OBSD. THESE DIFFERENCES IN STABILITY OF THE AMMINES IS THE BASIS FOR EXPTS. ON THE SEPN. OF CO AND NI.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--EXPERIMENTAL DETERMINATION OF THE HEAT OF FORMATION OF IRIDIUM, IV, HYDROXIDE -U-

AUTHOR-(04)-LESHCH, I.YU., SHNEYERSON, YA.M., RUBEL, I.G., PRUMINA, L.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(6), 1695-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HEAT OF FORMATION, CALORIMETRY, IRIDIUM COMPOUND, HYDROXIDE, CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1405 STEP NO--UR/0078/70/015/006/1695/1696

CIRC ACCESSION NO--AP0135079

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--13NOV70

2/2 019
CIRC ACCESSION NO--AP0135079
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT 17-21DEGREES, THE HEAT OF FORMATION OF IR(OH) SUB4 FROM (IRCL SUB6) PRIME2NEGATIVE S(B(AQ) AND 4OH PRIMENEGATIVE SUB(AQ) IS MINUS 177.3 KCAL-MOLE.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--11SEP70

1/2 030

TITLE--HEAT RESISTANCE PROPERTIES OF CERTAIN PURE METALS -U-

AUTHOR--SOKOLOV, L.D., SOLENOV, V.M., SKUDNOV, V.R., SHNEYIBERG, A.M.,
GLADKIKH, A.N.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA, METALLY, MAR. APR. 1970 P. 181-189

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--DIAMOND, CRYSTAL LATTICE STRUCTURE, HEAT RESISTANT METAL,
PLASTIC DEFORMATION, INTERNAL STRESS, THERMAL EFFECT, LANTHANUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0339 STEP NO--UR/0370/70/000/000/0181/0189

CIRC ACCESSION NO--AP0108637
UNCLASSIFIED
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2/2 030 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0108637

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE RESISTANCE TO UNIAXIAL DEFORMATION AND OF THE PLASTIC PROPERTIES OF POLYCRYSTALLINE LANTANIDES AND OTHER METALS SUBJECTED TO COMPRESSION AND TENSION AT DIFFERENT TEMPERATURES AND STRAIN RATES. IT IS FOUND THAT FOR EQUAL HOMOLOGOUS TEMPERATURES AND STRAIN LEVELS, THE SENSITIVITY TO CHANGES IN THE TEMPERATURE AND STRAIN RATE INCREASES WITH AN INCREASE IN THE STACKING FAULT ENERGY AND A DECREASE OF THE LATTICE COORDINATION NUMBER ACCORDING TO THE SEQUENCE FCC, HCP, BCC, AND DIAMOND TYPE LATTICE.

ZZZZZZZZZZZ UNCLASSIFIED

USSR

UDC 576.311:591.436.044

ZUFAROV, K. A., SHNEYVAYS, V. B., and INOGAMOVA, T. Ya., Laboratory of Electron Microscopy and Cytophotometry, Tashkent Medical Institute, Tashkent

"The Response of Ergastoplasm of Liver Cells of White Rats to the Effect of an Electromagnetic Field"

Leningrad, Tsitologiya, Vol 13, No 7, Jul 71, pp 813-819

Abstract: Rats were exposed for three hours to the effect of an electromagnetic field with a frequency of 1.625 MHz. Electron microscope study and biochemical analysis showed that the protein-synthesizing structures of liver cells were affected by the action of the electromagnetic field. The most pronounced changes in the ergastoplasm (a part of the endoplasm network of cells, the principal functions of which are synthesis and transportation of proteins) were found in liver cells just after exposure. There were also distinct changes in the nucleoli, i.e., in the ribosome-synthesizing apparatus. In later periods following exposure, there was a correlation between morphological and biochemical changes in liver cells. The decrease in the synthesis of nucleic acids and proteins, which set in initially as a result of dystrophic changes produced in the cells, was followed by an increase of the content of these substances in the liver homogenate.

1/2 025 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--RESPONSE OF WHITE MCE LIVER CELL MITROCHONDRIA ON THE ELECTROMAGNETIC FIELD IRRITATION -U-

AUTHOR-(02)-ZUFAROV, K.A., SHNEYVAYS, V.B.

COUNTRY OF INFO--USSR

SOURCE--TSITOLOGIYA; 12: 146-51 (FEB 1970)

DATE PUBLISHED----FEB70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ELECTROMAGNETIC BIOLOGIC EFFECT, LIVER, MITOCHONDRION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1985 STEP NO--UR/9053/70/012/000/0146/0151

CIRC ACCESSION NO--AP0120628

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120628

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ULTRASTRUCTURE OF MITOCHONDRIA WAS STUDIED IN MICE LIVER CELLS FOLLOWING THE INFLUENCE OF ELECTROMAGNETIC FIELD OF 1625 KH FREQUENCY. THE INITIAL CHANGES ON MITOCHONDRIA INVOLVING THEIR SWELLING COULD BE TRACED DURING THE TREATMENT. LATER, PART OF MITOCHONDRIA UNDERWENT A LYSIS. IN ADDITION, SOME GIANT MITOCHONDRIA APPEARED. THREE DAYS AFTER TREATMENT, MITOCHONDRIA APPEARED TO HAVE MELIN LIKE CRISTAE AS WELL AS THOSE TRANSFORMED INTO MEILIN FIGURES. FACILITY: TASHKENT MEDICAL INST.

UNCLASSIFIED

USSR

UDC: 576.311.347:591.044.2

ZUFAROV, K.A. and SHNEYVAYS, V.B., Department of Electron Microscopy and Cytopho tometry, Tashkent Medical Institute

"Reaction of White Rat Liver Mitochondria to an Electromagnetic Field"

Leningrad, Tsitologiya, No 2, 1970, pp 146-151

Abstract: A total of three hours of exposure of rat liver mitochondria to an electromagnetic field (1,625 kHz) brought about profound changes in their ultrastructure. Most mitochondria were swollen 1-2 min after cessation of exposure. Reduction in the number of cristae and appearance of electron-dense inclusions were also characteristic. Many of the mitochondria had septa dividing them in two. Twenty-four hours after treatment, many mitochondria displayed destroyed, vacuolated regions, while the remaining part was almost normal. Almost all the cells had light structures surrounded by a double membrane. Some were filled with a homogeneous substance of medium electron density. After 3 days, the vacuole-like structures disappeared from the cytoplasm and most of the mitochondria appeared normal. Others had tightly packed bundles of membranes resembling myelin membranes. After 6 days the ultrastructure was almost completely restored.

1/1

USSR

UDC 621.33.21:627.83

BEREZINSKIY, S. A., SHNIP, S. D.

"Calculation of the Above Water Part of the Combined Hydroelectric Power Plant Building for Thermal Effects"

Tr. Vses. proyektno-izyskat. i NII Gidroproyekt (Works of the Gidroproyekt All-Union Planning, Surveying and Scientific Research Institute), 1970, collection 19, pp 297-307 (from RZh-Elektrotekhnika i Energetika, No 4, Apr 71, Abstract No 4 D80)

Translation: A study was made of the stressed state of the Plyavinyas GES [Hydroelectric Power Plant] spillway, which has arisen under the effect of axial thermal deformations. Analysis of the calculation results confirmed the expediency of lengthwise construction of the GES building where it is possible to reduce the containment of the thermal deformations as much as possible. There are 6 illustrations and a 2-entry bibliography.

1/1

Acc. Nr: AP0049764 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: 4R0458

101690s **Treatment of polyamide synthetic leather with glycerol.** Bublik, I. M.; Kul'chitskii, S. I.; Turte, L. S.; Shnirel'man, R. A.; Tumarkina, I. D. (USSR). *Kozh.-Obuv. Prom.* **1970,** 12(1), 51–4 (Russ). Artificial leather is made by satg. nonwoven, stitched cloth with a polyamide soln. After hardening, the rigid semi-product is immersed in a glycerol (I) bath to soften it. An increase of I concn. of ≤40% increased the amt. of I absorbed by leather. A further increase in I concn. is undesirable, since it remains on the surface. The bath temp. has no effect on the I absorption. The optimum conditions are 20° and 40% I concn.; the excess I is squeezed out by rollers. CPJR

1/1

REEL/FRAME
19801682

7

USSR UDC 620.171.3

PANASYUK, V. V., SHNITSER, K. M., and KOVCHIK, S. YE., Physicomechanical Institute, Academy of Sciences Ukrainian SSR, Lvov

"Effect of Prestressing in Air and Water on the Cracking Resistance of Titanium Alloy VT-14"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No 6, 1973, pp 10-13

Abstract: Results are presented from a study of the effect of static prestressing of VT-14 titanium alloy in air and tap water on its resistance to crack development. Results of the experiments for samples of the alloy prestressed to 0.8 and 0.4 of their breaking stress and without prestressing revealed that the resistance of VT-14 to crack propagation (in air at room temperature) depends on the prestress load P_1 and the time under load. When samples were prestressed for up to 10 hours their resistance to crack propagation was sharply lowered, while from 10 to 100 hours there was an increase in cracking resistance and at 100 hours the value of cracking resistance K_{1s} exceeded the initial magnitude of K_{1s} drops drastically during the first few 1/2

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PANASYUK, V. V., et al., Fiziko- Khimicheskaya Mekhanika Materialov, Vol 9, No 6, 1973, pp 10-13

few hours under load for samples prestressed to 0.8 and 0.4. Then there is a rise in K_{1s} where maximums are reached around 100 hours, with the value of K_{1s} higher for the samples prestressed to 0.8 of their breaking load than for the 0.4 P_i. From 100 to 500 hours the samples at 0.8 P_i maintain a constant K_{1s} while for the sanples at 0.4 P_i the value of K_{1s} drops off gradually. The same relationships held true for samples prestressed and then held under various loads in water. Three figures, four bibliographic references.

2/2

USSR

UDC 669. 018.25.539.56

PANASYUK, V. V., SHNITSER, K. M., and KOVCHIK, S. YE., Physical-Technical Institute, Academy of Sciences Ukrainian SSR, L'vov

"Determination of the resistance of VT-14 Titanium Alloy to Brittle Fracture"

L'vov Fiziko-Khimicheskaya Mekhanika Materialov, No 3, 1973, pp 64-69

Abstract: The resistance of VT-14 titanium alloy to brittle fracture was studied by two schemes of loading with consideration of the effect of the medium and direction of crack development relative to the direction of rolling. The alloy studied has the following chemical composition (in %): 3.5-4.5 Al, 2.8-3.8 Mo, and 0.7-1.5 V. Two methods of loading samples are proposed: cantilever bend of a beam, and tension of a square plate, both of which are applicable to the methods of applying brittle cracks -- fatigue and impact. Four figures, one table, seven bibliographic references.

1/1

USSR

SHNOL', E. E., Institute of Applied Mathematics, Academy of Sciences USSR

"Remarks on the Theory of Quasistationary States"

Moscow, Teoreticheskaya i Matematicheskaya Fizika, Vol 8, No 1, Jul 71, pp 140-149

Abstract: The author introduces a non-hermitian scalar product which gives a proper normalization and orthogonality of the eigenfunctions of quasistationary states in nonrelativistic quantum mechanics. His definitions include the Schroedinger equation with a finite potential and the Green function. The article studies jointly the eigenfunctions of the discrete spectrum and the quasistationary eigenfunctions. He then discusses briefly the canonical normalization of the eigenfunction $\psi(x)$ and assumes it to be normalized to 1. In somewhat greater detail the author discusses the non-hermitian scalar derivative, makes several comments, and cites another form of the formula for the scalar derivative: that is, the Hilbert equation. The orthogon-

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USSR

SHNOL', E. E., Teoreticheskaya i Matematicheskaya Fizika, Vol 8, No 1, Jul 71, pp 140-149

ality of the eigenfunctions is mentioned briefly, as are the formulas for the one-dimensional case of normalization. The author shows the agreement of the canonical normalization of the eigenfunctions with the normalized functions obtained from the scalar product. He speaks of regularizing the maximal transition and gives the Zel'dowich formula for the one-dimensional case. After citing the theorem and giving proof, he then generalizes his results and comments on the over-all picture with respect to the quasistationary states. The article contains 5 bibliographic entries.

2/2

Molecular Biology

USSR

DESHCHEREVSKIY, V.I., ZHABOTINSKIY, A.M., SEL'KOV, YE.YE., SIDORENKO, N.P., and SHNOL', S.E., Institute of Biophysics, Academy of Sciences USSR

"Oscillating Biological Processes on the Molecular Level"

Moscow, Biofizika, Vol15, No 2, 1970, pp 225-234

Abstract: One important task of modern biophysics is to investigate conditions under which oscillations may occur on various levels. Some oscillations represent a normal functional state of a system (myocardial fibers), while other oscillations represent an abnormal (pathological) state. Oscillating processes have been investigated in single-enzyme, multi-enzyme, and model catalytic systems, in colloidal systems, and in a system with a strict structural organization: striated muscle. A catalytic reaction is a repetitive cyclic process: each enzyme molecule forms a complex with the substrate, induces a reaction, and returns to its initial state. Solutions of actomyosin display configurational oscillations involving reversible shifts in the ATPase activity in the absence of the ATP, which arrests these oscillations. Multi-enzyme systems in cells involve hundreds of biochemical reactions and various control mechanisms, which regulate the activity of enzymes, the speed of their synthesis and destruction, the permeability of biological membranes, and so on. These mechanisms can also disrupt the equilibrium

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USSR

DESHCHEREVSKIY, V.I., et al, Biofizika, Vol 15, No 2, 1970, pp 225-234

of biochemical systems and cause fluctuations in the concentration of reacting substances. Liquid-phase models of enzymatic reactions yield reproducible results and are used to investigate the spatial synchronization of oscillations. A specific situation arises in mechanical chemistry: the enzymatic breakdown of ATP changes the mechanical state of the muscle, which in turn affects the speed of this reaction. Further studies of oscillating processes may contribute to our understanding of the following phenomena: the mechanism of enzymatic catalysis; the nature of control mechanisms in multi-enzyme systems; the molecular kinetic basis of biological motility; and the cause of morphological organization in initially homogeneous systems.

2/2

1/2 021 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--EXPRESS METHOD FOR DIAGNOSING PARATYPHOID IN ANIMALS -U-

AUTHOR--SHNUR, V.I.

COUNTRY OF INFO--USSR

SOURCE--VETERINARIYA, 1970, NR 4, PP 117-118

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PARATYPHOID FEVER, BLOOD SERUM, AGGLUTINATION, CULTURE MEDIUM, MICROORGANISM IDENTIFICATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605049/D11 STEP NO--UR/0346/70/000/004/0117/0118

CIRC ACCESSION NO--AP0143377
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--11DEC70

2/2 021

CIRC ACCESSION NO--AP0143377

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXPRESS BACTERIOLOGICAL METHOD FOR IDENTIFYING PARATYPHOID HAS BEEN DEVELOPED, WHICH PERMITS ISOLATION OF A CULTURE 12-18 HRS AFTER PATHOLOGICAL MATERIAL IS OBTAINED. AT THE SAME TIME, CULTURAL, MORPHOLOGICAL AND BIOCHEMICAL PROPERTIES MAY BE STUDIED, AND SEROTYPING CAN BE CONDUCTED WITH AGGLUTINATING PARATYPHOID SERA. THE METHOD IS SIMPLE AND DOES NOT REQUIRE COMPLICATED EQUIPMENT OR MUCH EXPENDITURE OF NUTRIENT MEDIUM. MATERIAL IS EXAMINED MICROSCOPICALLY, INOCULATED IN THREE TEST TUBES (WHICH HAVE BEEN HEATED TO 38-39 C) CONTAINING MEAT PEPTONE AGAR, GISS'S MEDIUM WITH GLUCOSE, AND GISS'S MEDIUM WITH LACTOSE. RESULTS ARE READ AFTER 12-18 HRS INCUBATION AT 37 C. IN TRIALS WITH MATERIAL FROM 162 ANIMALS FATALLY INFECTED WITH PARATYPHOID, USING THIS EXPRESS METHOD, CULTURES WERE ISOLATED AND IDENTIFIED IN 90PERCENT OF CASES. FACILITY: LENINGRADSKIY VETERINARNYY INSTITUT, LENINGRAD VETERINARY INSTITUTE.

UNCLASSIFIED

USSR

UDC 536.2.01

TANAYEVA, S. A., and [redacted]

"The Temperature Field of a Hollow Indefinite Cylinder Under Monotonous Initial Heating Conditions"

Minsk, Teplo i Massoobmen pri Nizkikh Temperaturakh, 1970, pp 38—42

Abstract : The experimental installation and the method for determination of the temperature dependence of the thermal conductivity, the coefficient of thermal diffusivity, and also the specific heat of materials by low temperatures are described. The suggested method is based on the solution of the equation of the transient thermal conductivity for a two-component indefinite cylinder by its heating up by an interior heat source of constant power under adiabatic conditions. By this method, all thermophysical characteristics of a wide class of materials in the temperature range of 4.2—400 °K can be determined with an accuracy of 5 % during a relatively short time interval of 4—5 hrs. One illustr., one table, seven formulas, five biblio. refs.
1/1

U SSR

UDC: 669.018.45:548.55

SAVITSKIY, Ye. M., BURKHANOV, G. S., SHNYREV, G. D., DORON'KIN, Ye. D., SERGEYEV, N. N.

"Use of Plasma Heating for Growth of Single Crystals of Refractory Metals"

Moscow, Tsvetnyye Metally, No 12, Dec 73, pp 40-41.

Abstract: Plasma heating is used to intensify metallurgical processes and create new methods for production and refining of metals. The method of cathode-ray zone melting allows pure, low-defect single crystals of various metals to be produced, but cannot be used for large single crystals, since the diameter is limited by surface tension. This has required the development of another method for production of single crystals of refractory metals, allowing the production of large single crystals and their purification of carbon. This article describes a method for producing large single crystals of tungsten and molybdenum using plasma-arc heating. The productivity of the method is several times higher than that of cathode ray zone melting. It is economically competitive with vacuum-arc melting, but produces higher-quality tungsten crystals. The quality of the tungsten crystals is approximately equal to those produced by cathode ray zone melting.

1/1

Titanium

USSR UDC 669.295.5'292

KONSTANTINOV, K. M., FEDOTOV, S. G., and SHNYREV, G. D., Moscow

"Phase Conversions Upon Rapid Heating of Titanium-Vanadium Martensite"

Moscow, IAN SSSR, Metally, No 2, Mar-Apr 71, pp 172-175

Abstract: Continuous heating of titanium-vanadium α' martensite at 3 deg/min and isothermal holding cause its decomposition, forming an (α + β) structure, characteristic for alloys in the equilibrium state. Increasing the heating rate to 80-100 deg/sec does not prevent decomposition of the supersaturated vanadium solid solution based on α Ti. This work studies the question as to whether similar decomposition occurs at higher heating rates such as 1,000 deg/sec or whether the reverse martensitic (α' → β) conversion occurs, as is usually thought. The experimental results indicate that heating at 1,000 deg/sec does not prevent decomposition of the martensitic structure produced in an alloy of titanium with 10% V by quenching from the β-phase area. The concentration and structural changes occurring at high heating rates during the process of decomposition of the supersaturated α solid solution do not differ significantly from those occurring during heating at relatively low rates, when the phase structure of the alloy is practically characterized by the equilibrium diagram.

1/1

USSR

UDC 669.275'25'784'018.25

SHNYREV, P. D., DROBININ, I. N., TUMANOV, V. I., GINZBURG, M. A., and SHNYREV, G. D.

"Investigation of Wear of Cermet Hard-Metal Alloys in Liquid Nitrogen Medium"

Issledovaniye iznosa metallokeramicheskikh tverdykh splavov v srede zhidkogo azota (cf. English above), Institute of Metallurgy, Academy of Sciences USSR, Moscow, 1971, 8 pp, ill, bibliography with five titles, No 3214-71 Dep (from RZh-Metallurgiya, No 1, Jan 72, Abstract No 11820 Dep by authors)

Translation of Abstract: The work investigates the influence of Co content and grain size of tungsten carbide on the wear of WC-Co alloys during testing in liquid N_2 medium. The investigation reveals that wear increases with an increase in Co content; the magnitude of wear rises with an increase in WC-phase grain size; volume wear of WC-Co alloys of varying composition and with varying grain size of tungsten carbide is inversely proportional to Rockwell hardness. Three illustrations. One table. Bibliography of five titles.

USSR

UDC 669.295.5

MIKHEYEV, V. S., and SHNYREV, G. D.

"Mechanical Properties of Beta-Titanium Alloys With 15.5% Cr Alloyed with Molybdenum, Vanadium, Niobium, and Tantalum"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 2, Mar-Apr 72, pp 178-180

Abstract: Investigation of the mechanical properties of forged beta-alloys of the system Ti+15.5% Cr+(0-5)%Mo(V,Nb,Ta) at room temperature established the regularities of change in their tensile strength, elongation, reduction in area, and impact strength. According to the nature of change of plastic properties, Ti-Cr alloys can be divided into two groups: alloys alloyed with Mo and V, and alloys alloyed with Nb and Ta. Alloys containing 1% Mo or V have the highest tensile strength (95-99 kg/mm^2), elongation (19-21%), and reduction in area (50-54%). When all the alloys contain 5% of each of the selected alloying elements, the alloy with the highest tensile strength (107-112) kg/mm^2) is the one with vanadium. This alloy has an elongation of 12-17%, reduction in area of 37-45%, and impact strength of 2-2.8 kg-m/cm^2. The best plastic properties are found in Ti-Cr alloys containing 5% Ta or Nb.

Alloys containing 2% Nb or Ta have the lowest plastic properties;

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USSR

MIKHEYEV, V. S., and SHNYREV, G. D., Izvestiya Akademii Nauk SSSR, Metally, No 2, Mar-Apr 72, pp 178-180

elongation = 11-13%, reduction in area = 19-28%, and impact strength = 2 kg-m/cm^2. Best impact strength was found in the alloys containing Mo, where at a content of 1% Mo the impact strength was almost 15 kg-m/cm^2 and at 5% Mo--almost 5 kg/cm^2, while alloys with 1 and 2% V had impact strengths of 6 and 3.5 kg-m/cm^2. One figure, 5 bibliographic references.

2/2

USSR

UDC 539.4.015

MIKHEYEV, V. S., KOSHELEV, P. F., NIKITIN, P. N., SHNYREV, G. D. (Moscow), Institute of Metallurgy imeni A. A. Baykov

"The Influence of Beta-Stabilizers on the Strength and Plasticity of Titanium at Low Temperatures"

Kiev, Problemy Prochnosti, No 10, 1970, pp 115-117

Abstract: In the article is investigated the influence of beta-stabilizing metals (tantalum, vanadium, niobium) on the strength, plasticity, and sensitivity to stress concentration in titanium-based binary alloys corresponding to the structure of an alpha-solid solution, containing two atomic percent of the second component, at temperatures of 20 to -253°C. Attention is paid to the rules governing the change of the mechanical properties of alloys in the multicomponent Ti-Ta-Cr; Ti-Ta-V-Mo systems at low temperatures. 2 figures, 1 table, 2 bibliographic entries.

1/1

Titanium

USSR UDC 669.295.5'292

KONSTANTINOV, K. M., FEDOTOV, S. G., and SHNYREV, G. D., Moscow

"Phase Conversions Upon Rapid Heating of Titanium-Vanadium Martensite"

Moscow, IAN SSSR, Metally, No 2, Mar-Apr 71, pp 172-175

Abstract: Continuous heating of titanium-vanadium α' martensite at 3 deg/min and isothermal holding cause its decomposition, forming an (α + β) structure, characteristic for alloys in the equilibrium state. Increasing the heating rate to 80-100 deg/sec does not prevent decomposition of the supersaturated vanadium solid solution based on α Ti. This work studies the question as to whether similar decomposition occurs at higher heating rates such as 1,000 deg/sec or whether the reverse martensitic (α' → β) conversion occurs, as is usually thought. The experimental results indicate that heating at 1,000 deg/sec does not prevent decomposition of the martensitic structure produced in an alloy of titanium with 10% V by quenching from the β-phase area. The concentration and structural changes occurring at high heating rates during the process of decomposition of the supersaturated α solid solution do not differ significantly from those occurring during heating at relatively low rates, when the phase structure of the alloy is practically characterized by the equilibrium diagram.

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USSR

UDC 669.172:620.17

SAVITSKIY, Ye. M., BURKHANOV, G. S., RASKATOV, N. N., and SHNYREV, G. D.

"Mechanical Properties of Large Tungsten Single Crystals"

Monokristally Tugoplavkikh i Redkikh Metallov [Single Crystals of Refractory and Rare Metals -- Collection of Works], Nauka Press, 1971, pp 139-143

Translation: The mechanical properties of large single crystals of tungsten up to 40 mm in diameter produced using a low-temperature plasma at room temperature and 1,000-2,000°C are studied. It is established that the anisotropy of the mechanical properties of single crystals, which appears strongly at room temperature, becomes insignificant at 1,000-2,000°. 2 Tables; 3 Figures; 5 Bibliographic References.

1/1

USSR

UDC 669.172

SAVITSKIY, Ye. M., BURKHANOV, G. S., RASKATOV, N. N., and SHNYREV, G. D.

"Formation of Growth Structure During Growing of Tungsten Single Crystals From a Melt"

Monokristally Tugoplavkikh i Redkikh Metallov [Single Crystals of Refractory and Rare Metals -- Collection of Works], Nauka Press, 1971, pp 19-25

Translation: The formation of the growth structure of oriented tungsten single crystals is studied with various temperature gradients as a function of the content of carbon in the tungsten and the growth rate. A possible mechanism of formation of the growth structure of tungsten single crystals is described. It is established that the formation of a coarse growth submacrostructure occurs due to macroscopic fluctuation of impurities in the crystallizing tungsten. 6 Figures; 13 Bibliographic References.

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USSR

5

UDC 669.295.5'393'296

MIKHEYEV, V. S., PUSTOVOYTOVA, T. G., SOKOLOV, V. S., and SHNYRYEV, G. D., Moscow

"Strength and Plasticity of Ti-Nb-Zr Alloys at -196 and +20° C"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 4, Jul-Aug 70, pp 171-173

Abstract: The mechanical properties of Ti-Zr-Nb alloys with an increased content of Zr and Nb were investigated at -196° C and + 20° C on specimens with a constant relation of Ti/Zr = 9/1, Nb contents between 1 and 50 at%, and Zr contents up to 10 at%. The alloys were composed of Ti, brand TG-130, with admixtures of Fe, Si, C, Cl, N_2, H_2, and the components iodine Zr and industrial Nb. The effect of Nb on the mechanical characteristics of the alloys at -196° C and + 20° C shows a notable increase in strength and yield properties in the domains of α and β solid solutions. The most different values of strength and yield properties at -196° C were observed on alloys with structures of α and $(\alpha+\beta)$ solid solution at 20 at% Nb; similar values were observed on the microstructures of β solid solutions which showed a brittle failure at tensile tests. Titanium alloys containing up to 3 at% of Nb and 9.9-9.7 at% Zr, with a tensile strength σ=114-129 kg/mm^2 and δ=9-13%, have the best combination of strength and plasticity.

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USSR

UDC 621.173.162.4

SHNYREV, P. D., Candidate of Technical Sciences, DROBININ, I. N., Candidate of Technical Sciences, docent, TUMANOV, V. I., Candidate of Technical Sciences, and GINZBURG, M. A., Engineer

"Friction Forces and the Coefficient of Friction During the Attrition of Hard Alloys in a Medium of Liquid Nitrogen"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye, No 7, 1972, pp 28-31

Abstract: The results are presented of an experimental investigation of the friction forces and the coefficient of friction during the sliding friction of pairs of specimens of hard alloys VK60M and VK6 in a medium of liquid nitrogen. It was established that within the limits of change of the rate of friction from 0.2 to 0.4 m/sec, the coefficient of friction increases as the rate of friction increases, and with an increase of the load from 35 to 135 kg/cm^2 the coefficient of friction decreases. 4 figures. 1 table. 6 references.

1/1

USSR

UDC 539.4.015

SHNYREV, P. D., and ALEKHIN, V. P., Moscow

"Some Features in the Hardening of Contact Surfaces in the Low-Temperature Friction of Hard Alloys"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 1, Jan-Feb 72, pp 153-156

Abstract: A study was made of changes in the mechanical properties of friction surfaces of hard alloys based on tungsten carbide with brands VK6, VK6M, and VK60M cobalt bonding agents. Microhardness changes of near-surface layers of hard alloys in the process of wear are shown. The main factors responsible for the hardening of contact friction surfaces and the strain characteristics of near-surface friction layers, determined by x-ray structural and electron-microscopy methods, are analyzed by reference to microdeformations. The processes of heterogeneous microdeformation together with the size reduction of tungsten carbide grains and subgrains are said to be principally responsible for the hardening of contact surfaces. Two illustrations, six biblio. refs.

1/1

USSR UDC: 546.781'261'73:669.018.25-973:620.178.16

SHNYREV, P. D. and DROBININ, I. N., Moscow Institute of Chemical Machinery

"Procedure of Studying the Wear of Tungsten Carbide-Cobalt Alloys in a Liquid Nitrogen Medium"

Moscow, Zavodskaya laboratoriya, Vol 38, No 2, 1972, pp 239-241

Abstract: The study concerns the relationships between friction wear and the physicomechanical properties of WC-Co hard alloys as well as between the wear and working conditions of friction pairs in a liquid nitrogen medium. The amount of wear during testing was determined by the loss in weight of the specimens. The per-unit loads ranged from 22.3 to 65 kg/cm^3. The wear was also tested as a function of tungsten carbide grain size to determine the effect of hardness on wear. Involved were VK4, VK6M, VK8, VK10, VK11 and VK20 alloys with 4 to 20% (by vol.) Co as well as VK60M, VK6M, VK6 and VK6V alloys with 4% Co. Of all these alloys, VK60M exhibited minimum wear. The tests for wear resistance and friction included, among others, a plunger-bushing pair of the same alloy. The experimental results revealed the effect of diametral clearance (between the plunger and the bushing) and surface finish on the wear values of the friction pair. The

USSR

SHNYREV, P. D., et al, Zavodskaya laboratoriya, Vol 38, No 2, 1972, pp 239-241

data indicate regularities of changes in wear and potential applications of the tested alloys in cryogenic technology. (3 illustrations, 1 bibliographic reference)

UDC 669.275'25'784'018.25

USSR

SHNYREV, P. D., DROBININ, I. N., TUMANOV, V. I., GINZBURG, M. A., and SHNYREV, G. D.

"Investigation of Wear of Cermet Hard-Metal Alloys in Liquid Nitrogen Medium"

Issledovaniye iznosa metallokeramicheskikh tverdykh splavov v srede zhidkogo azota (cf. English above), Institute of Metallurgy, Academy of Sciences USSR, Moscow, 1971, 8 pp, ill, bibliography with five titles, No 3214-71 Dep (from RZh-Metallurgiya, No 1, Jan 72, Abstract No 1I820 Dep by authors)

Translation of Abstract: The work investigates the influence of Co content and grain size of tungsten carbide on the wear of WC-Co alloys during testing in liquid N_2 medium. The investigation reveals that wear increases with an increase in Co content; the magnitude of wear rises with an increase in WC-phase grain size; volume wear of WC-Co alloys of varying composition and with varying grain size of tungsten carbide is inversely proportional to Rockwell hardness. Three illustrations. One table. Bibliography of five titles.

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USSR

UDC:621.651.036.002.3

SHNYREV, P.D., Moscow

"Effect of Hardness of Tungsten Carbide - Cobalt Alloys on Wear Resistance With Friction in Liquid Nitrogen"

Moscow, Mashinovedeniye, No 1, Jan-Feb 73, pp 95-98

Abstract: An experimental investigation of wear resistance of tungsten carbide, cobalt alloys in liquid nitrogen medium was conducted. The cobalt content varied from 4 to 20% with Rockwell-A hardness varying from 89 to 85 respectively. The cobalt serves as a binder for the hard, brittle tungsten carbide crystals. A plate made out of VK6 alloy (6% C_o) was rubbing against specimen of various alloys under 65 kg/cm^2 load. The wear of the plate increased and the wear of the specimen decreased with the increase of the specimen's hardness. For a given hardness the wear is lower with alloys having smaller size grains.

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1/2 016 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--OXIDATIVE SPLITTING OF SPECIFIC SUGARS DURING THE PREPARATION OF O,MONORECEPTOR CORPUSCULAR ANTIGENS FROM SALMONELLA -U-

AUTHOR--SHOBUKHOVA, T.S.

COUNTRY OF INFO--USSR

SOURCE--LAB. DELO 1970, (4), 211-14

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SALMONELLA, ANTIGEN, AGGLUTINATION, GLUCOSE, BIOLOGIC CELL, ANTIBODY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3009/0499 STEP NO--UR/9099/70/000/004/0211/0214

CIRC ACCESSION NO--AP0139288

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--27NOV70

2/2 016

CIRC ACCESSION NO--AP0139288

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A 20 HR CULTURE OF SALMONELLA CALIFORNIA WITH ANTIGENIC DETERMINANTS 4, 12, G, G, T WAS SUSPENDED IN WATER, DEFLAGELLATED MECH. (SHOBUKHOVA, T. S., 1968), AND OXIDIZED WITH K PERIODATE IN NACL BUFFER (PH 7) AT ROOM TEMP. FOR TIME PERIODS OF 30 MIN TO 7 HR. THE OXION. WAS STOPPED BY ADDN. OF 2PERCENT GLUCOSE. THE BACTERIAL SUSPENSION WAS CENTRIFUGED, WASHED WITH THE BUFFER, AND USED FOR THE AGGLUTINATION TEST ON GLASS WITH ADSORBED MONORECPTOR SERUM 0-4. THE OXION. SUPPRESSED THE FUNCTION OF ANTIGEN 12 BY DESTROYING GLUCOSE AND RHAMNOSE MOLS. IN BACTERIAL CELL WALLS. THE OPTIMUM CONDITIONS FOR OBTAINING THE CORPUSCULAR ANTIGEN O 4 OF S. CALIFORNIA WERE 18-24 HR OXION. WITH 0.015M K PERIODATE. THE OXIDIZED DEFLAGELLATED BACTERIA GAVE POS. AGGLUTINATION REACTION ONLY WITH THOSE SERA THAT CONTAINED THE ANTIBODIES AGAINST THE RECEPTOR O 4. FACILITY: GOS. KONTR. INST. MED. BIOL. PREP. IM. TARASEVICHA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 621.396.677(088.8)

KLYUYEV, O. L., TEREKHOV, V. M., FADDEYEV, V. Ye., SHOFLER, L. V.

"Drive Mechanism for a Ground-Based Antenna System"

USSR Author's Certificate No 282452, filed 30 Oct 68, published 11 Dec 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6B109 P)

Translation: This Author's Certificate introduces a drive mechanism for a ground-based antenna system. The mechanism contains a DC force converter, an even number of actuating motors, high-speed and low-speed gear boxes, and crown gears connected to the drive gears. To improve the rigidity of the gear train and simplify the construction of the mechanism, the converter is connected between the common point of the actuating motor armatures and the common point of two power diodes which are connected in series in the same direction in the armature circuits of the same motors. An additional DC source is connected in parallel with these diodes through an auxiliary diode.

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USSR

UDC 621.385.6 (088.8)

RUDNIK, V.V., SHOFMAN, L.I

"Filter Of Power Supply Lead-Ins Of Mitron"

USSR Author's Certificate No 305520, filed 16 Feb 70, published 23 July 71 (from RZh:Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 2A167P)

Translation: A filter is proposed for the power supply lead-ins of a mitron of the decimeter wave range. In order to decrease the microwave radiations of the power circuit it is made in the form of a spiral delay system located at the interior dielectric core, with a film absorbing layer which makes contact with the turns of the spiral.

1/1

USSR

UDC 632.95

AREN, A. K., FAL'KENSHTEYN, B. Yu., ZELMEN, V. N., YEGOROVA, L. V., OZOLIN', R. R., POPLAVSKAYA, N. I., and SHOFRO, E. A., Institute of Organic Synthesis, Academy of Sciences Latvian SSR

"Method of Preparing 2-(α-phenyl-α-p-fluorophenylacetyl)-1,3-indandione"

USSR Authors' Certificate No 263586, filed 14 Nov 67, published 4 Jun 70 (from RZh-Khimiya, No 1, 10 Jan 71, Abstract No 1N531P)

Translation: A mixture of 4.5 g metallic Na is heated at 130-140° in 50 ml anhydrous PhMe, 45 ml anhydrous MeOH is then added dropwise to the mixture. The mass is heated on an oil bath for 1-1.5 hr with intensive stirring, evaporated, and the residue cooled to 80° and treated with 150 ml anhydrous C_6H_6 and 20 g dimethyl phthalate. A mixture of 11.25 g freshly prepared phenyl-fluorophenylacetone in 50 ml anhydrous C_6H_6 is added dropwise over the space of 1 hr to the reaction mass, with a 50 ml mixture of C_6H_5 and MeOH distilled off at the same time. Then once more a mixture of 11.25 g freshly prepared 2-phenyl-2-p-fluorophenylacetone and 4 g anhydrous dimethyl phthalate in 50 ml anhydrous C_6H_6 is added dropwise, with 50 ml of solvents being distilled off. During condensation oil bath temperature is 118-120°. After components are mixed, the mixture is stirred for 10 hr at 118-120°,

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USSR

Aren, A. K., et al., USSR Authors' Certificate No 263586, filed 14 Nov 67, published 4 Jun 70 (from RZh-Khimiya, No 1, 10 Jan 71, Abstract No 1N531P)

evaporated at 11-15 mm; the oily residue is treated with 800 ml cold water, and heated with stirring. The layer of water is decanted, and the crystalline residue treated analogously three or four times with water until it dissolves completely. Combined water layers are treated with 40 ml dilute HCl (acid, 1:1) until the reaction of the medium is acid, are stirred, kept for ~12 hr, and decanted. The amorphous residue is treated with 80 ml hot iso-PrOH and stirred. A yellow precipitate is filtered off, which is rinsed two or three times with 10 to 15 ml portions of cold iso-PrOH, to yield 15 g (42.5%) 2-(α-phenyl-α-p-fluorophenylacetyl)-1,3-indandione (I), melting point 121-5°. The isopropyl mother liquors are diluted with 100-150 ml water and decanted; the oily residue is treated with 5 ml HCL (acid, 1:1), to yield, as described above, an additional 3 g (8.5%) I. I possesses a broad spectrum of zoocidal action.

2/2

USSR

UDC 632.95

SHOGAM, S. M., STONOV, L. D., TROITSKAYA, T. V., PARSHUTIN, B. M., and BARANOVA, L. N.

"Granulated Herbicides for Control of Overgrowth on Reclamation and Drainage Ditches"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection of works,), vyp 1, Moscow, 1970, pp 216-224 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13N532 by T. A. Belyayeva)

Translation: Formulas and a technique have been devised for the preparation of granulated herbicides (monuron, diuron, atrazine, simazine) having any prescribed resistance to elution by water, and hence carrying effective lives, as well as any prescribed particle-size range. A procedure has been devised for determining resistance to elution by water by comparison with a sample of a granulated preparation of the same herbicide taken as a standard. The highest herbicidal activity is provided by preemergence application or by application during the growing period. Under rapid water-flow conditions, granulated diuron preparations that have been dried at 90° or subjected to prolonged drying at 60-70° are recommended.

1/1

USSR

UDC 632.95

KRUTITSKAYA, M. N., KOL'TSOV, N. S., TRIKHANOV, M. D., SHOGAM, S. M., DAVYDOVA, A. N., YEGOROVA, I. L., and KUZOVLEVA, M. V.

3

"Method of Preparing Calcium Tetrathionate"

USSR Authors' Certificate No 264363, filed 27 Dec 68, published 4 Jun 70 (from RZh-Khimiya, No 1, 10 Jan 71, Abstract No 1N588P)

Translation: CaS_4O_6 (I) is obtained in an $H_2S_4O_6$ medium by the oxidation of calcium thiosulfate (II) with perhydrol, taken in 10% excess, at 10-12°. 52 g II are added in the course of 1 hr to a 13.5 ml, 27% solution of H_2O_2, cooled to 10°, to which 96 ml $H_2S_4O_6$ (concentration 235 g/l) was added beforehand. The resultant suspension is filtered out from traces of sulfate; the filtrate is evaporated in vacuum, and the residue crystallized. 23 g of 98% dihydrate of I is obtained. The mother liquor remaining after crystallization is used to prepare $H_2S_4O_6$.

1/1

1/2 008 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--CALCIUM TETRATHIONATE PREPARATION -U-

AUTHOR-(05)-KRUTITSKAYA, M.N., KOLTSOV, N.S., TRIKHANOV, M.D., SHOGAN, S.M., DAVYDOVA, A.N.

COUNTRY OF INFO--USSR

SOURCE--USSR 264,363

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(9)

DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, CALCIUM COMPOUND, THIOSULFATE, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1779 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0130612

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0130612

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CA TETRATHIONATE IS PREPD. BY OXIDIZING CA THIOSULFATE WITH PERHYDROL IN TETRATHIONIC ACID.

UNCLASSIFIED

UDC 632.95

USSR

STONOV, L. D., SERGEYEVA, T. A., SIMONOV, V. D., SHOGAN, R. Ya., RADTSEV, V. S., and TITOVA, L. M.

"Yalan -- New Herbicide for Control of Echinochloa Weeds in Rice Plantings and Wild Oats in Wheat Plantings"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection of works), Vyp 1, Moscow, 1970, pp 174-179 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13N518 by T. A. Belyayeva)

Translation: Yalan (I) is a highly effective soil herbicide for the control of millet weeds in rice plantings. Tests have been made of a 60-percent emulsion concentrate and a 10% granulated preparation of I. The herbicidal action of I in the soil persists for 50-100 days. Before rice is planted, I is applied and worked in by harrow in doses of 2-6 kg/ha. For wild-oat control, I is applied in doses of 3-6 kg/ha before wheat is planted.

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USSR

UDC 539.4

SHOKALO, I. K., (Novosibirsk)

"Influence of Scale Factor on Titanium Alloy Creep"

Kiev, Problemy Prochnosti, No 8, 1972, pp 58-60.

Abstract: This article studies the question of the influence of the technology of manufacture of specimens and their dimensions on the creep characteristics of a titanium alloy containing 4.5% Al and 1.5% V. Specimens were cut along the length of a sheet 20 mm thick, were rectangular in shape with a cross section of 5 × 10 mm, gauge length 100 mm. It was found that manufacturing technology has a significant influence on creep parameters. To eliminate possible errors in testing, final finishing of specimens to the required dimensions must be performed manually. They may be worked on machine tools, but the minimum feed rate of the cutting tool must be used. The shapes and sizes of specimens have practically no influence on creep characteristics of titanium alloys at normal temperatures. Experiments performed on specimens of standard shape and size produce reliable data on creep of these alloys.

1/1

UDC: 518:517.392

USSR

SHOKAMOLOV, I., Mathematics and Computer Center, Tadzhik SSR

"Analog of the Newton-Cotes Formulas for Some Cauchy-Type Integrals and Their Principal Values"

Dushanbe, Izvestiya AN Tadzhikskoy SSR, Otdeleniye Fiziko-Matematicheskikh i Geologo-Khimicheskikh Nauk, No 3 (45), 1972, pp 6-13

Abstract: This article is a continuation of an earlier paper by the same author (Interpolyatsionnyye kvadraturnyye formuly dlya nekotorykh integralov tipa Koshi i ikh glavnykh znacheniy -- Interpolation Quadrature Formulas for Some Cauchy-Type Integrals and their principal values -- Vestsi AN BSSR, ser. fiz-mat. navuk, No 4, 1970) in which the interpolation quadrature formulas for integrals and values of the following type were considered:

$$\Psi(z) = \Psi(f|z) = \frac{\sqrt{z^2 - 1}}{\pi} \int_{-1}^{+1} \frac{f(t)}{t - z} \cdot \frac{dt}{\sqrt{1 - t^2}}, \quad z \in /-1, +1/,$$

$$I(x) = I(f|x) = \frac{\sqrt{1 - x^2}}{\pi} \int_{-1}^{+1} \frac{f(t)}{t - x} \cdot \frac{dt}{\sqrt{1 - t^2}}, \quad x \in /-1, +1/.$$

USSR

UDC: 518:517.392

SHOKAMOLOV, I., Izvestiya AN tadzhikskoy SSR, Otdeleniye fiziko-matematicheskikh i geologo-khimicheskikh nauk, No 3 (45), 1972, pp 6-13

The present paper considers interpolation quadrature formulas in which the interpolation points are chosen in the same way as in the Newton- otes formulas for ordinary Riemann integrals with an odd number of interpolation points. A priori evaluations are made of the errors in the quadrature formulas when the density f(x) has higher-order continuous derivatives in /-1,+1/, and these evaluations are compared with the true error value.

2/2

1/2 024 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--THERMOLYSIS OF NEODYMIUM HYDROXYSULFATES AND HYDROXIDES -U-

AUTHOR-(04)-MARGULIS, YE.V., SHOKAREV, M.M., NOVOSELOVA, V.N., VERSHININA, F.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(6), 1451-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMAL DECOMPOSITION, NEODYMIUM COMPOUND, HYDROXYL RADICAL, SULFATE, COMPLEX COMPOUND, IR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1200 STEP NO--UR/0078/70/015/006/1451/1458

CIRC ACCESSION NO--AP0138215

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203010002-1"

2/2 024 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0138215
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERMOLYSIS OF (NH(OH)(H SUB2 O) SUBX (SO SUB4 (I), (ND SUB2(OH) SUB4(H SUB2 O) SUBY) SO SUB4, AND ND(OH) SUB3 GIVES ND SUB2 O SUB3 AS THE FINAL PRODUCT. IR SPECTRA OF STARTING MATERIALS AND OF INTERMEDIATE PRODUCTS ARE GIVEN. THE RELATIVE STRENGTH OF BANDS AND COORDINATION NOS. OF THESE SPECIES ARE DISCUSSED. A NEW SPECIES, ND SUB2 O(SO SUB4) SUB2, FORMED AS AN INTERMEDIATE DURING THE THERMOLYSIS OF I.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--INFRARED SPECTRA OF NORMAL SULFATES AND OF OXIDE SULFATES OF COPPER, ZINC, CADMIUM, AND MERCURY -U-

AUTHOR-(03)-SHOKAREV, M.M., VERSHININA, F.I., MARGULIS, YE.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 151-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COPPER COMPOUND, ZINC, CADMIUM, MERCURY, SULFATE, IR SPECTRUM, PYROLYSIS, METAL OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0920 STEP NO--UR/0192/70/011/001/0151/0154

CIRC ACCESSION NO--AP0116430

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--16OCT70

2/2 024

CIRC ACCESSION NO--AP0116430

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IR SPECTRA OF CUSO SUB4, ZNSO SUB4, CDSO SUB4, HGSO SUB4, CUO.CUSO SUB4, ZNO.2ZNSO SUB4, 2CDO.CDSO SUB4, AND 2HGO.HGSO SUB4 WERE RECORDED AT 2000-400 CM PRIME NEGATIVE1. THE OXIDE SULFATES OF CU, ZN AND CD WERE PREPD. BY PYROLYSIS OF THE SULFATES AT 680, 700, AND 920DEGREES, RESP. THE SAMPLES FOR IR EXAMN. WERE PREPD. AS VASELINE OIL MULLS OF THE FINELY POWD. SALTS. THE FOLLOWING FREQUENCIES WERE SELECTED FOR SULFATE DETN. IN OXIDE SULFATES: FOR CU SUALTS 708 AND 628, ZN 601 AND 542, CD 674 AND 618, AND HG 648 AND 598 CM PRIME NEGATIVE1. THE SENSITIVITY OF THE METHOD WAS SIMILAR TO 5PERCENT. FACILITY: VSES. NAUCH.-ISSLED. GORNOMET. INST. TSVET. MET., UST-KAMENOGORSK, USSR.

UNCLASSIFIED

Acc. Nr: AP0053890 Abstracting Service: CHEMICAL ABST. 6-70 Ref. Code: UR0025

116306v Cadmium hydroxide and hydroxosulfates, and products of their thermolysis. Margulis, E. V.; Shokarev, M. M.; Beisekeeva, L. I.; Vershinina, E. N. (USSR). *Zh. Neorg. Khim.* 1970, 15(2), 374–9 (Russ). The title compds. were studied by using x-ray diffraction, ir spectrophotometry, DTA and thermal gravimetry. In the investigated sulfates, SO_4^{2-} has D_2 symmetry and is coordinated to 4 Cd^{2+}. The splitting of ν (SO_4) implies that the strength of the crystal field decreases with the compds. in the order: $CdSO_4$ > $2CdO.CdSO_4$ > $CdSO_4.Cd(OH)_2$ > $CdSO_4.nCd(OH)_2$. Ir spectra of hydroxosulfates are very complex due to interactions of ν OH with lattice frequencies and due to various natures of the OH present. Thermal stability of hydroxo compds. decreases in the order: $CdSO_4.Cd(OH)_2$ > $CdSO_4.nCd(OH)$ > $Cd(OH)_2$. HMJR

1/1

REEL/FRAME
19830967

18

1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--SYNTHESIS AND STRUCTURE OF SOME DIAZONIUM SALTS OF THE 1,2,4,TRIAZOLE SERIES -U-

AUTHOR-(05)-FROLOV, A.N., PEVZNER, M.S., SHOKHOR, I.N., GALKOVSKAYA, A.G., BAGAL, L.I.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (5), 705-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC SYNTHESIS, MOLECULAR STRUCTURE, DIAZONIUM SALT, ORGANIC AZOLE COMPOUND, PERCHLORATE, NITRATE, CARBOXYL RADICAL, ELECTRONEGATIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1028 STEP NO--UR/0409/70/000/005/0705/0709

CIRC ACCESSION NO--AP0134740

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0134740
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ME
3,DIAZO,1,2,4,TRIAZOLE,5,CARBOXYLATE,
3,DIAZONIUM,5,PHENYL,1,2,4,TRIAZOLE FLUOBORATE, PERCHLORATE, AND
NITRATE, 3,DIAZONIUM,5,(P,NITROPHENYL),1,2,4,TRIAZOLE, AND THE M,NITRO
ANALOG WERE PREPD. THE H ON THE N ATOM IN
3,DIAZONIUM,5,CARBOXY,1,2,4,TRIAZOLE WAS MORE ACIDIC THAN THE ONE IN THE
CARBOXYL GROUP. THE STRUCTURE OF A CRYST. DIAZONIUM SALT OF THE
TRIAZOLE SERIES DEPENDED ON THE ELECTRONEGATIVITY OF THE SUBSTITUENT IN
POSITION 5 OF THE RING. FACILITY: LENINGRAD. TEKHNOL. INST. IM.
LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--ANIONS OF DINITROMETHYL COMPOUNDS. V. CRYSTAL STRUCTURE OF THE POTASSIUM SALT OF PHENYLDINITROMETHANE -U-

AUTHOR-(04)-GRIGORYEVA, N.V., MARGOLIS, N.V., TSELINSKIY, I.V., SHOKHOR, I.N.

COUNTRY OF INFO--USSR

5

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 165-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CRYSTAL STRUCTURE, BENZENE DERIVATIVE, X RAY STUDY, NITROMETHANE, ORGANOPOTASSIUM COMPOUND, CRYSTAL LATTICE, CONJUGATE BOND SYSTEM, ANION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0444 STEP NO--UR/0192/70/011/001/0165/0168

CIRC ACCESSION NO--AP0104057

UNCLASSIFIED

2/2 030 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104057

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE OF PHENYLDINITROMETHANE (I) WAS DETD. BY SINGLE CRYSTAL X RAY METHODS. THE MONOCLINIC LATTICE PARAMETERS ARE A 11.58, B 7.95, C 10.12 ANGSTROMS, AND BETA 99DEGREES; ZETA EQUALS 4; THE SPACE GROUP IS P2 SUB1-C. IN THE ANION, THE DIHEDRAL ANGLE BETWEEN THE PH RING AND THE N(1) MINUS C(0) MINUS N(2) PLANE IS 62DEGREES, AND THE C(1) MINUS C(4) LINE MAKES AN ANGLE OF SIMILAR TO 8DEGREES WITH THE N(1) MINUS C(0) MINUS N(2) PLANE. BOTH NO SUB2 GROUPS ARE ROTATED BY SIMILAR TO 10DEGREES ABOUT THE C AND N BONDS RELATIVE TO THE N(1) MINUS C(0) MINUS N(2) PLANE. CONJUGATION BETWEEN THE PH RING AND THE REMAINDER OF THE ANION CANNOT EXCEED 20PERCENT OF THE VALUE POSSIBLE IF THE ANION WERE PLANAR. MARY FRANCES RICHARDSON.

UNCLASSIFIED

USSR

UDC 621.375.82

ZHITKOVA, M. B., KLUSHIN, V. N., PORTNYAGIN, A. I., SHOKIN, A. A.

"Continuous Laser With a Vortex Lamp"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No 3, Moscow, "Sov. radio," 1972, pp 24-29 (from RZh-Fizika, No 1, Jan 73, Abstract No 1D895)

Translation: The effect of the heat condition on the parameters of the active element of a YAG-Nd crystal under continuous pumping is analyzed. It is shown that in theoretical calculations it is necessary to take into account the variation, with temperature, of the crystal characteristics at high pumping levels. The laser pumping efficiency using krypton arc tubes is compared with that using a vortex discharge. The dependence of the spread of the output radiation and the focal distance of the thermal lens on the pumping power was investigated experimentally. The nature of the distribution of double refraction induced by optical pumping for the case of coincidence of the crystallographic plane [100] with the axis of the cylindrical active element is investigated. 10 ref. Authors' abstract.

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1/2 011 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--EQUILIBRIUM IN, C SUB2 H SUB5, SUB2 NH,NACL,H SUB2 O AND, C SUB2 H SUB5, SUB2 NH,HCL,NAHCO SUB3 H SUB2 O SYSTEMS -U-

AUTHOR-(02)-VASONG, T.M., SHOKIN, I.N.

5

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(3), 326-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL EQUILIBRIUM, DIETHYLAMINE, SODIUM CHLORIDE, HYDROGEN CHLORIDE, CARBONATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0840 STEP NO--UR/0153/70/013/003/0326/0328

CIRC ACCESSION NO--AT0137868

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0137868

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO EVALUATE THE ADVANTAGES OF REPLACING NH SUB3 WITH ET SUB2 NH IN THE PRODN. OF NAHCO SUB3 FROM NACL, THE SOLY. OF NACL IN AQ. SOLNS: CONTG. 2.4-5.1M ET SUB2 NH IS DETD., AND D PRIME20 FOR THE AMINE SOLNS. IS GIVEN. AT LARGER THAN 35DEGREES, THE SYSTEM NACL,H SUB2 O ET SUB2 NH SEPS. INTO 2 PHASES; AT THE CRIT. POINT, THE COMPN. IS 13.5PERCENT NACL, 66.5PERCENT H SUB2 O, 20PERCENT ET SUB2 NH. A TRIANGULAR EQUIL. DIAGRAM IS GIVEN FOR THIS SYSTEN AT 40DEGREES. THE EFFECT OF TREATING NACL SOLNS. CONTG. 3.2-5.9M ET SUB2 NH WITH CO SUB2 (SMALLER THAN 85PERCENT SATN.) IS SHOWN. IT IS POSSIBLE TO ACHIEVE 95-98PERCENT UTILIZATION OF NA FOR THE PPTN. OF NAHCO SUB3 BY MEANS OF ET SUB2 NH. FACILITY: MOSK. KHIM. TEKHNOL. INST. IM. MENDELEEVA, MOSCOW, USSR.

UNCLASSIFIED

SHOKIN, M.

RSFSR Agriculture

p/s

PRE-PLANTING REPAIR OPERATIONS SURVEYED

[Article by M. Shokin, Deputy Chief of the RSFSR Ministry of Agriculture's Main Administration for the Mechanization and Electrification of Agriculture, and P. Ikoyev, Chief Engineer at the Main Administration: "Not a Minute of Idle Time"; Moscow, Izvestiya, Russian, 18 March 1972, p 2]

It is now spring. Some types of field work have already begun on farms in southern Russia. The time for massive planting operations will soon arrive.

A severe winter which did not bring much snow has brought a few additional problems to farmers in some regions in southern and central Russia. In some places it is necessary to replant winter crops or strengthen them with top-dressings of fertilizers. This requires maximum intensity from the schedule for spring field operations. This year there is a sharp increase in the work load of tractors and machinery involved in tilling and planting operations. The main task is to ensure the reliable operation of equipment.

On-the-spot information and data from statistical reports indicate that in the majority of oblasts, krays, and autonomous republics in the Russian Federation the repair of tractors, plows, drills, cultivators, and potato planters is meeting high technical standards.

Mechanics and machine operators in the Russian Federation should now put about 1 million tractors, more than 700,000 tractor drawn drills, and many other machines into the fields. About 800,000 tractors, 700,000 drills, and almost 1 million plows and cultivators are now on the ready line. Operators, mechanics, and repair workers at kolkhozes, sovkhozes, and Sel'khoztekhnika [Agricultural Equipment Association] enterprises have done extensive work. There have been good results among the initiators of the All-Russian socialist competition of mechanics and machine operators in the Tatar ASSR: tilling and planting machinery has been prepared for operation, mutual inspections of repair quality have been conducted, and all equipment had been placed in proper storage. Mechanics and machine operators in the Kabardino-Balkar ASSR, the North Ossetian ASSR, Stavropol'skiy Kray, and Rostovskaya, Belgorodskaya, and Lipetskaya oblasts were ready for field operations ahead of time.

At many farms in Stavropol'skiy Kray machines are repaired in constantly operating repair shops, without using tractor operators for these purposes. In Rostovskaya Oblast more than 20-25 percent of all tractors are repaired by the component method. This method is based on units and assemblies prepared at specialized Sel'khoztekhnika enterprises. This permits marked improvements in repair quality and reductions in repair costs.

JPRS 55577
11 Apr 72

1/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--MOLECULAR KINETIC THEORY OF THE PROPAGATION OF ULTRASONIC WAVES IN LIQUIDS -U-

AUTHOR--SHCKIROV, SH.

S

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK TADZH. SSR 1970, 13(1), 19-21

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MOLECULAR KINETICS, ULTRASONIC WAVE PROPAGATION, MATHEMATIC ANALYSIS, ABSORPTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1633 STEP NO--UR/0425/70/013/001/0019/0021

CIRC ACCESSION NO--AT0118612

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0118612

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE QUANT. INVESTIGATION OF PROPAGATION AND ABSORPTION OF ULTRASONIC WAVES IN LIQS. WAS CARRIED OUT ON THE BASIS OF EQUATIONS OF MASS, PULSE, AND ENERGY CONSERVATION. THE VELOCITY AND ABSORPTION COEFF. OF ULTRASONIC WAVES IN LIQS. DEPEND STRONGLY ON FREQUENCY AS A RESULT OF THE FACT THAT THE PROCESS IS THE MOST IMPORTANT ONE ONLY IN A CERTAIN FREQUENCY RANGE. THE DERIVED EQUATIONS ARE GENERAL FORMS OF WELL KNOWN EQUATIONS OF CLASSICAL AND RELAXATION THEORIES OF PROPAGATION AND ABSORPTION OF ULTRASONIC WAVES.

FACILITY: TADZH. GOSUNIV. IM. LENINA, DUSHANBE, USSR.

UNCLASSIFIED

Pesticides

USSR UDC 632.951:542.432

REZUNENKO, O. A., TRET'YAK, M. G., SHOKOL, V. A., Institute of Organic Chemistry, Academy of Sciences of the UkrSSR

"Identification and Quantitative Determination of Demuphos in Water"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 5, 1973, pp 44-45

Abstract: A method is given for determining Demuphos (dimethyl-*N*-methylisopropyl urethane phosphate) in the water of reservoirs and effluents. The Demuphos was extracted with carbon tetrachloride. A 3:1 hexane-acetone mixture (Rf=0.53) was used to identify the chemical in water. The sensitivity of the chromatographic method is $7.5 \cdot 10^{-2}$ μg. Quantitative determination of Demuphos in water is done by the method of wet combustion analysis with potassium persulfate followed by colorimetric determination of the phosphorus-molybdenum complex.

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USSR

UDC 541.67

YEGOROV, YU. P., KISILENKO, A. A., and SHOKOL, V. A., Institute of Organic Chemistry, Acad. Sc. UkrSSR, Kiyev

"IR-Spectra and Structure of Phosphorus Isocyanates"

Moscow, Zhurnal Strukturnoy Khimii, Vol 14, No 2, Mar-Apr 73, pp 240-245

Abstract: Continuing the studies of the Characteristics of chemical structure of phosphorus isocyanates, calculations have been carried out of the frequencies and forms of normal vibrations and the force field has been analyzed of a model molecule $Cl_2P(O)NCO$, the results being correlated with the IR spectral shifts of the assymetric valence vibration frequency of the NCO group. An increase in the force constant of the P-N bond and the characteristics of the changes in the IR spectra of phosphorus isocyanates can be interpreted on the basis of the participation of higher orbitals of the phosphorus atom in bond formations.

1/1

USSR

UDC 632.95

PROTOPOPOVA, G. V., REYDALOVA, L. I., DZYUBAN, A. D., MOLYAVKO, L. I., DOROSHENKO, V. V., MIKHAYLYUCHENKO, N. K., SHOKOL, V. A., DERKACH, G. I.

"Insecticidal Activity of Esters of bis-(3-arylcarbamido) phosphoric and thiophosphoric Acids"

Fiziol. aktivn. veshchestva. Resp. mezhved. sb. (Physiologically Active Materials. Republic Interdepartmental Collection), 1972, vyp. 4, pp 9-11 (from RZH-Khimiya, No 5 (II), 1973, Abstract No 5N579)

Translation: A study was made of the insecticidal activity of esters with the formula ROP-(X)(NHCONHR')$_2$ (I) (X = O or S; R = alkyl, aryl; R' = Ph, C_6H_4SCN-m, α-pyridyl) for rice weevils, housefly larvae and imago and greenbugs. The I containing the SCN-group have the highest insecticidal activity, and among them the activity rises on going from the methyl to the propyl and isopropyl radicals.

USSR

UDC 632.95

PROTOPOPOVA, G. V., DZYUBAN, A. D., REYDALOVA, L. I., GOLIK, G. A., and SHOKOL, V. A.

"Insecticidal and Acariasicidal Properties of the Esters of Phosphazomethylphosphonic Acid"

Fiziol. aktivn. veshchestva. Resp. mezhved. sb. (Physiological Effects of Compounds, Republic Interscience Symposium), Vyp 4, 1972, pp 11-13 (from Referativnyy Zhurnal -- Khimiya, No 4(II), 1973, Abstract No 4N603 by T. A. Belyayeva)

Translation: The esters F of phosphazomethylphosphonic acid under laboratory conditions demonstrate insecticidal and acariasicidal properties of a contact and systemic nature. Of the compounds studied, $MeP(O)(OEt)N=P(OisoPr)_3$ compound I) showed the strongest contact effect -- SK_{50} = 1.78 in 3 days for rice weevils and 0.39 for grain aphids. Contact insecticidal activity was increased by using iso-Pr in the trialkoxyphosphazo group. Comp. I in a 0.05% concentration results in 96% mortality of the mite Tetranychus urtical on the second day.

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USSR

UDC 547.26'118

GUBNITSKAYA, YE. S., GAMALEYA, V. F., and SHOKOL, V. A., Institute of Organic Chemistry, Academy of Sciences, Ukrainian SSR

"O,O-Dialkyl S-β-isocyanatoethyl dithiophosphates"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 9, Sep 72, p 2112

Abstract: The title compound can be obtained by intramolecular thermal isomerization of O,O-dialkyl S-(N-ethylenecarbomoyl) dithiophosphates or by the Curtius reaction from O,O-dialkyl S-(β-azidocarbonylethyl) dithiophosphates.

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USSR

UDC 547.26'118

SHOKOL, V. A., and KOZHUSHKO, B. N., Institute of Organic Chemistry of the Academy of Sciences Ukrainian SSR

"Ethoxyfluorophosphonylchlormethyl- and Bis(ethoxyfluorophosphonyl)methyl Isocyanates"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), Vyp 10, 1972, pp 2346-2347

Abstract: The reaction of diethyl fluorophosphite with dichlormethyl isocyanate without a catalyst yielded either ethoxyfluorophosophonylchloromethyl isocyanate (I) or bis(ethoxyfluorophosphonyl)methyl isocyanate (II) depending of the ratio of reagents:

$$Cl_2CHNCO \xrightarrow{(C_2H_5O)_2PF} F(C_2H_5O)P(O)CHClNCO$$

$$Cl_2CHNCO \xrightarrow{2(C_2H_5O)_2PF} [F(C_2H_5O)P(O)]_2CHNCO$$

The yield of (I) was 27%, b.p. 46-48°C (0.05 mm), d_4^{20} 1.3955, n_D^{20} 1.4328. The yield of (II) was 30%, b.p. 81-83°C (0.05 mm), d_4^{20} 1.3813, n_D^{20} 1.4250. Empirical formulas for (I) and (II) are: $C_4H_6ClFNO_3P$ and $C_6H_{11}F_2NO_5P$, respectively.

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USSR

UDC 547.241

SHOKOL, V. A., GOLIK, G. A., LEVCHUK, Yu. N., YEGOROV, Yu. P., and DERKACH, G. I. (Deceased), Institute of Organic Chemistry, Academy of Sciences, UkrSSR

"Structure of the Reaction Products of Amidoesters of Alkylphosphonic Acids With Phosphorus Pentachloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 43(105), No 2, Feb 73, pp 267-274

Abstract: Reactions of phosphorus pentachloride with the amides of ethyl and aryl esters of methyl-, chloromethyl-, dichloromethyl-, and trichloromethyl phosphoric acid were studied in an attempt to determine under what conditions isometic products could be obtained. Analyzing the products by the IR, NMR ^{31}P, and NMR ^{1}H spectroscopical methods, it was shown that depending on the alkyl radical attached to the phosphorus atom, the reaction products could either be trichlorophosphazoalkylchloro- and alkylaroxyphosphonyls, or their isomers -- alkyldichloro- and alkyl- aroxychlorophosphazodichlorophosphonyls or their mixture.

1/1

USSR UDC 546.185

SHOKOL, V. A., MOLYAVKO, L. I., MATYUSHA, A. G., MIKHAYLYUCHENKO, N. K., and DERKACH, G. I. (deceased)

"Diisocyanates of Phosphorus Thioacids"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 11, Nov 1971, pp 2,380-2,383

Abstract: Twenty-four derivatives of alkyl- and aryl diisocyanothiophosphates $ROP(S)(NHCOR')_2$, and the diisocyanate of phenylthiophosphonic acid, were synthesized by reacting alkyl- and aryl diisocyanophosphites and diisocyanate of phenylphosphonic acid with phosphorus thiochloride. The isocyanate groups of these compounds were found to react with substances containing active hydrogen atoms. Details of experimental procedures and tables of physical constants are given.

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USSR UDC 546.185

SLYUSARENKO, Ye. I., MAKHAYLIK, S. K., GAMALEYA, V. F., and SHOKOL, V. A., Institute of Organic Chemistry, Ukrainian Academy of Sciences

"Derivatives of Isocyanatophosphoryl Dichloride and Diisocyanatophosphoryl Chloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 11, Nov 1971, pp 2,383-2,386

Abstract: The dialkyl esters of alkoxycarbonylamido- and ureidophosphoric acids have contributed a number of substances with insecticidal and complexing properties; this suggested the synthesis the monoalkyl esters of these acids. Alcohols and aniline, and also alcohols in the presence of triethylamine and water, and triethylamine alone, react with isocyanatophosphoryl dichloride; this produced the monoalkyl esters of alkoxycarbonylamide- and 3-phenylureidophosphoric acids. Alcohols, mercaptans, thiophenols, and aniline react with diisocyanatophosphoryl chloride to form the acid chlorides of bis(alkoxycarbonylamido)-, bis[(alkylthio)carbonylamido]-, bis[(phenylthio)carbonylamido]- and bis(3-phenylureido)phosphoric acids. The hydrolysis of these substances yields free acids. Sixteen compounds were synthesized. Procedures of synthesis are given, along with some physical data on the esters.
1/1

USSR UDC 547.26'118

SHOKOL, V. A., MOLYAYEKO, L. I., and DERKACH, G. I., Institute of Organic Chemistry, Ukrainian Academy of Sciences

"Alkyl Esters of Alkoxy-Bis(dimethylamido)- and Dialkoxy(dimethylamido)carbonic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 11, Nov 1971, pp 2,379-2,380

Abstract: As part of their work on synthesizing and studying the insecticidal activity of the N-phosphorylated derivative amides of carbonic acid, the authors synthesized the alkyl esters of alkoxy-bis(dimethylamido)- and dialkoxy(dimethylamido)phosphazocarbonic acids from the azides of the alkyl esters of carbonic acid and the alkyl bis(dimethylamido)- and dialkyl (dimethylamido)phosphites. The previously unknown isopropy bis(dimethylamido)-phosphite was also obtained. Physical constants and yields of these substances are given.

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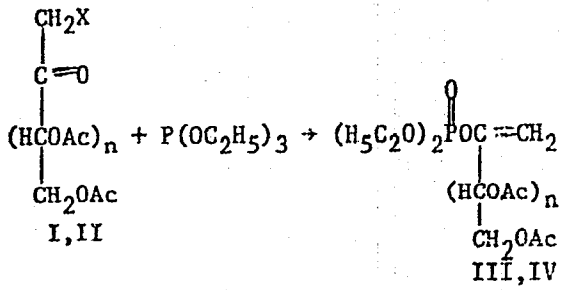
USSR

DOROSHENKO, V. V., KOZHUSHKO, B. N., STUKALO, Ye. A., and SHOKOL, V. A.
Institute of Organic Chemistry, Academy of Sciences of the UkrSSR

"Dihalophosphonylchloromethylisocyanates"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 484-485

Abstract: Dichloromethyl isocyanate reacts with alkyl difluoro- and dichlorophosphites to form difluorophosphonylchloromethyl isocyanate (I) and dichlorophosphonylchloromethyl isocyanate (II).



(I) X=Cl, n=4, D-galacto; (II) X=Br, n=3, L-arabino.

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USSR

DOROSHENKO, V. V., et al., Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 484-485

Isocyanate (II) is synthesized by chlorination of dichlorophosphonylmethyl isocyanate (III) in the presence of UV-radiation.

$$Cl_2P(O)CH_2NCO \xrightarrow{Cl_2} Cl_2P(O)CH(Cl)NHCOCl \xrightarrow{(C_2H_5)_3N} II$$

The structure of compounds (I, II, IV) was confirmed by IR-spectroscopy.

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USSR

UDC 547.26'118

SHOKOL, V. A., DOROSHENKO, V. V., DERKACH, G. I. (DECEASED), Institute of Organic Chemistry, Kiev, Academy of Sciences Ukrainian SSR

"Reaction of Chloromethylisocyanate With the Salts of Thiophosphoric and Thiocarbonic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 8, Aug 70, pp 1692-1696

Abstract: Reaction of chloromethylisocyanate with potassium salts of O,O-dialkylthio- and dithiophosphoric acids yields O,O-dialkyl-S-isocyanatomethylthio- and -dithiophosphates, and with the potassium salt of O-ethyldithiocarbonic acid, O-ethyl-S-isocyanatomethyldithio carbonate. Chloromethylisocyanate in anhydrous benzene is added dropwise to a solution of the potassium salt of O,O-diethyldithiophosphoric acid in anhydrous benzene at 20° and refluxed for 5-10 hours. The precipitate is separated, the filtrate evaporated, and the residual O,O-dialkyl-S-isocyanatothio- or dithiophosphates are redistilled. p-Chloromethylphenylisocyanate in benzene is added to the potassium salt of O,O-dimethyldithio-

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USSR

SHOKOL, V. A., et al, Zhurnal Obshchey Khimii, Vol 40, No 8, Aug 70, pp 1692-1696

phosphoric acid in benzene and refluxed for 11 hours, the precipitate is centrifuged and the filtrate evaporated to give a product with b.p. 75-78°/1mm, n_D^{20} 1.5668. The O-ethyl-S-isocyanatomethyldithiocarbonate, b.p. 70-71/0.2 mm, d_4^{20} 1.2562, n_D^{20} 1.5536 is obtained analogously to O,O-dialkyl-S-isocyanatomethylthiophosphate. To obtain O,O-dialkyl-S-(carbalkoxyaminomethyl)-dithiophosphates, a solution of anhydrous alcohol in absolute ether is added dropwise to a solution of O,O-dialkyl-S-isocyanatomethyldithiophosphate in absolute ether, stirred, and after 16-20 hours the solvent is removed at 10-15 mm, and the residue is kept at 0.2 mm (40-50°) until constant weight. The O,O-diethyl-S-(carbalkoxyaminomethyl)-thiophosphates and O-ethyl-S-(carbalkoxyaminomethyl)-dithiocarbonates are obtained analogously.

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UDC 547.26'118

USSR

SHOKOL, V. A., GOLIK, G. A., TSYBA, V. T., YEGOROV, YU. P., DERKACH, G. I. (DECEASED), Institute of Organic Chemistry, Kiev, Academy of Sciences Ukrainian SSR

"Phosphoazoalkylphosphonic Acid Esters"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 8, Aug 70, pp 1680-1691

Abstract: Reaction of trialkylphosphites, triamidophosphites, dialkyl- and diamidophosphonites, and triphenylphosphine with the azides of alkylphosphonic acid esters yields esters of phosphazo-alkylphosphonic acids -- compounds with pesticidal activity. The reaction is exothermic and occurs easily at room temperature either in ether or in benzene. After evaporation of the solvent, liquid phosphazophosphoryls are obtained. Depending on heating conditions, the esters of trialkyl- and methyldialkylphosphazoalkylphosphonic acids rearrange into diesters of the alkyldialkoxyphosphazo-phosphoric acid or into esters of N-alkyl-N-dialkylphosphonoamido-alkylphosphonic acid. In all cases the side products consist of the

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SHOKOL, V. A., et al, Zhurnal Obshchey Khimii, Vol 40, No 8, Aug 70, pp 1690-1691

diethyl ester of methylphosphonic acid and a yellow, viscous fluid, probably polyphosphorene formed by condensation. Detailed analysis of the IR and NMR spectra of the above compounds is reported and characteristic bands and shifts are listed. Physical properties of the products obtained are tabulated, but no biological data are reported.

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UDC 547.241

USSR

SHOKOL, V. A., GOLIK, G. A., and DERKACH, G. I., (deceased), Institute of Organic Chemistry, Academy of Sciences Ukrainian SSR

"Azidoisocyanate of the Methylphosphonic Acid and Its Derivatives"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 3, Mar 71, pp 545-550

Abstract: Reaction of chloroanhydride of methylphosphonic acid azide with a suspension of sodium cyanate in chloroform yields the azidoisocyanate of methylphosphonic acid (I) -- a colorless liquid with a sharp odor. Reacting (I) with alcohols, phenol, and aniline yields the azides of carbalkoxy- and carbophenoxyamides and phenylcarbamide of methylphosphonic acid which, when reacted with phosphites and phosphine give corresponding carbalkoxy- and carbophenoxyamides, and phenylcarbamide of (P-phosphazo)-methylphosphonic acid. IR spectra of these azides exhibited an intensive band at 2158-2179 cm^{-1}, characteristic of the azido group.

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USSR UDC 547.26'118.07

SHOKOL, V. A., MIKHAYLYUCHENKO, N. K., DERKACH, G. I., KIRSANOV, A. V., Institute of Organic Chemistry, Kiev, Academy of Sciences Ukrainian SSR

"A Method of Producing trichlorophosphazo Compounds"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 18, Author's Certificate No 271520, filed 18 Mar 69, p 24

Abstract: This Author's Certificate introduces: 1. A method of producing trichlorophosphazo compounds by interacting an amine or amide with a phosphorus-containing reagent and chlorine in an organic solvent in the presence of heat with subsequent isolation of the goal product by conventional methods. As a distinguishing feature of the patent, the process is simplified by using red or white phosphorus as the phosphorus-containing component. 2. The method described in (1) is distinguished by the fact that the process is carried out at 50-80°C.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203010002-1"

USSR UDC 547.26'118

SHOKOL, V. A., MOLYAVKO, L. I., MIKHAYLYUCHENKO, N. K., and DERKACH, G. I. (deceased), Institute of Organic Chemistry, Academy of Sciences Ukr. SSR

"Alkyl Esters of tris-Dimethylamido-, Methyl-bis-dimethylamido- and Dialkyl-dialkylamidophosphazocarbonic Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 2, Feb 71, pp 318-319

Abstract: The reaction of tris-dimethylamidophosphite, methyl bis-dimethylamidophosphonite, and dialkyldialkylamidophosphinite with the azides of carbonic acid esters yields corresponding alkyl esters of phosphazocarbonic acids. To a solution of 0.1 g-mole of the azide of carbonate ester in 20 ml of absolute ether, 0.1 g-mole of the respective phosphite, phosphonite in 20 ml of solvent is added dropwise. The reaction is exothermic. After the addition is completed, the mixture is heated for 30 min, the solvent is removed and the product is distilled under vacuum.

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1/5 017 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ACID DIHALIDES AND MONOHALIDES OF ISOCYANATOMETHYL,PHOSPHONIC ACID ALKYL ESTERS -U-

AUTHOR-(03)-SHOKOL, V.A., DOROSHENKO, V.V., DERKACH, G.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 535-42

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SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ISOCYANATE, PHOSPHONIC ACID, ESTER, ORGANIC PHOSPHORUS COMPOUND, CATALYTIC ORGANIC SYNTHESIS, CHLORINE, FLUORINE, AMIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0896 STEP NO--UR/0079/70/040/003/0535/0542

CIRC ACCESSION NO--AP0124559

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CIRC ACCESSION NO--AP0124559

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MIXING EQUIMOLAR AMTS. OF ROPCL SUB2, ROPF SUB2, OR (RO) SUB2 PCL AND CLCH SUB2 NCO IN THE PRESENCE OF 0.01 MOLE DRY FECL SUB3 CATALYST RESULTED IN A MILDLY EXOTHERMIC REACTION, COMPLETED BY HEATING TO 45-50DEGREES TO ELIMINATE THE EVOLVING ALKYL HALIDE TO GIVE THE FOLLOWING RP(O)(CH SUB2 NCO)X (X AND R SHOWN): CL, CL 56-75PERCENT (FROM ME, ET, OR ISO,PR ESTERS), B SUBOTIMES15 59-60DEGREES, D PRIME20 1.5744, N PRIME20 SUBD 1.4980; CL, ETO (I), 37-53PERCENT, B SUBOTIMES35 82-3DEGREES, 1.3334, 1.4625; CL, ISO,PRO, 16PERCENT, B SUBOTIMES0.4 75-6DEGREES, 1.2664, 1.4590; F, F (FROM BUOPF SUB2), 57PERCENT, B SUB15 68-9DEGREES, 1.5490, 1.4085; AND F, ETO (II), 17PERCENT, B SUBOTIMES2 68-70DEGREES, 1.3002, 1.4180. ALTERNATIVELY, HEATING EQUIMOLAR AMTS. CLCH SUB2 NCO AND EITHER ETOPCL SUB2 OF (ETO) SUB2 PCL TO 65-75DEGREES ALSO GAVE ETCL, BUT IN THE 1ST INSTANCE THE PRODUCT FORMED A TAR, WHILE IN THE 2ND CASE I WAS ISOLATED. EQUIMOLAR AMTS. (ETO) SUB2 PF AND CLCH SUB2 NCO WITH FECL SUB3 CATALYST REACTED AT 50DEGREES TO GIVE ETCL, 17PERCENT ETP(O)(OET)F, B SUB12 50-1DEGREES, 1.1130, 1.3884; AND 17PERCENT II. SIMILAR REACTION WITH (C SUB8 H SUB17 O) SUB2 PCL 6 HR AT 110DEGREES GAVE 75PERCENT C SUB8 H SUB17 CL, WHILE THE REST OF THE MATERIAL POLYMD. ON BEING HEATED. EQUIMOLAR AMTS. MEOPCL SUB2 AND CLCH SUB2 CH SUB2 NCO WITH FECL SUB3 CATALYST REFLUXED 12 HR GAVE NO MECL, AND THER REACTANTS WERE RECOVERED.

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CIRC ACCESSION NO--AP0124559

ABSTRACT/EXTRACT--EQUIMOLAR AMTS. CL SUB2 P(O)CH SUB2 NCO AND ROH IN ER SUB2 O GAVE OVERNIGHT UNDISTILLABLE RR PRIME1 P(O)CH SUB2 NHCOR PRIME2 (III) (R EQUALS R PRIME1 EQUALS CL, R PRIME2 EQUALS ETO), D PRIME20 1.4560, N PRIME20 SUBD 1.4945; ATTEMPTED DISTN. GAVE ETOH AND AN ISOCYANATE AS CONFIRMED BY THE IR SPECTRUM. REACTION OF THE CRUDE DICHLORIDES, PREPD. AS ABOVE, WITH 2 MOLES DRY ROH AND ET SUB3 N IN ET SUB2 O AT 5DEGREES AND FINALLY AR TOOM TEMP. GAVE THE FOLLOWING III, ALSO PREPD. GROM 3 MOLES ROH, 2 MOLES ET SUB3 N AND 1 MOLE CL SUB2 P(O)CH SUB2 NCO (OR SIMILARLY FROM OCNCH SUB2 P(O)(OR)CL) (R, R PRIME1, AND R PRIME2 GIVEN): F, ETO, ETO, (IIA), B SUBOTIMES05 100-12DEGREES, 1.2497, 1.4368; MEO, MEO, MEO, B SUBOTIMES03 122-5DEGREES, 1.3250, 1.4578; MEO, MEO, ISO,PRO, B SUBOTIMES06 11-12DEGREES, A.1929, 1.4495; MEO, ETO, MEO, B SUBOTIMES03 115-18DEGREES, 1.2404, 1.4525; MEO, ISO,PRO, MEO, B SUBOTIMES05 114-16DEGREES, 1.1765, 1.4503; ETO, ETO, ETO, B SUBOTIMES2 131-3UEGREES, 1.1516, 1.4465; AND ISO,PRO, ISO,PRO, ETO, B SUBOTIMES05 137-40DEGREES, 1.1149, 1.4486. EQUIMOLAR AMTS. OCNCH SUB2 P(O)(OET)F AND ETOH IN ET SUB2 O 3 DAYS GAVE UNDISTILLABLE IIA, ALSO FORMED FROM 2 MOLES ETOH IN ET SUB2 O AND 1 MOLE OCNCH SUB2 P(O)F SUB2 IN 3 DAYS.

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4/5 017 UNCLASSIFIED

CIRC ACCESSION NO--AP0124559 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--REACTION OF 1 MOLE ETOH WITH THE LATTER DIFLUORIDE (FOLLOWED BY IR SPECTRA) PROCEEDED WITH DECLINE OF NCO BAND INTENSITY OVER 10 HR, AFTER WHICH THIS NO LONGER TOOK PLACE OVER 3 DAYS, BUT NO PRODUCTS COULD BE ISOLATED INDIVIDUALLY, OCHCH SUB2 P(O)(OCHME SUB2)CL AND 1 MOLE MEOH IN ET SUB2 O AT NEGATIVE 10DEGREES, THEN AT ROOM TEMP. OVERNIGHT, GAVE AN UNDISTILLABLE MIXT. OF THE STARTING MATERIAL AND EVIDENTLY (ISO,PRO)CIP(O)CH SUB2 NHCO SUB2 ME; SIMILAR REACTION OF ETOH WITH (ETO)P(O)CLCH SUB2NCO GAVE ONLY CRUDE (ETO)P(O)CLCH SUB2 NHCO SUB2 ET AND STARTING MATERIAL, WHICH WERE NOT SEPARABLE. OCNCH SUB2 P (O)F SUB2, OR OCNCH SUB2 P(O)(OET)F, TREATED WITH 1 MOLE PHNH SUB2 IN ET SUB2 O AT NEGATIVE 15DEGREES, THEN WARMED TO ROOM TEMP. GAVE III (R EQUALS R PRIME1 EQUALS R, R PRIME2 EQUALS PHNH), DECOMPD. 128-31DEGREES; OR III (R EQUALS F, R PRIME1 EQUALS ETO, R PRIME2 EQUALS NHPH), M. 93-5DEGREES, RESP. SIMILARLY, REACTIONS WITH ET SUB2 NH AND OCNCH SUB2 P(O)CL SUB2 OR OSNCH SUB2 P(O)(OET)CL, GAVE III (R EQUALS R PRIME1 EQUALS R PRIME2 EQUALSET SUB2 N), B SUBOTIMES05 152-5DEGREES, 1.0711, 1.4740; OR III (R EQUALS R PRIME1 EQUALS R PRIME2 EQUALS ET SUB2 N) B SUBOTIMES05 140-3DEGREES, 1.0470, 1.4850. REACTION OF OCHCH SUB2 POCL SUB2 WITH 0.9 MOLE PHNH SUB2 IN ET SUB2 O AT NEGATIVE 10DEGREES, COMPLETED AT ROOM TEMP., GAVE CL SUB2 P(O)CH SUB2 NHCONHPH, CONTAMINATED WITH MUCH STARTING MATERIAL AND M. 142-5DEGREES; THIS CONTAINED ALSO SOMEP,AMIDE MATERIAL. SN OCTOATE AS A CATALYST GAVE A SIMILAR RESULT. REACTION OF AMINES OR ALCS. WITH OCHCH SUB2 P(O)(OR)CL RESULTED IN INVOLVEMENT OF BOTH CL AND NCO GROUPS SO THAT PURE PRODUCTS COULD NOT BE ATTAINED.

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5/5 017 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124559

ABSTRACT/EXTRACT--OCNCH SUB2 POCL SUB2 AND 5 MOLES ET SUB2 NH GAVE ET SUB2 NCONHCH SUB2 PO(NET SUB2) SUB2, AS EXPECTED. FACILITY: INST. ORG. KHIM., KIEV, USSR.

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1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--CHLOROMETHYL AND DICHLOROMETHYLDICHLOROPHOSPHAZO ACYLS -U-

AUTHOR-(03)-SHOKOL, V.A., GAMALEYA, V.F., KUKHAR, V.P.

COUNTRY OF INFO--USSR

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DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1380 STEP NO--UR/0079/70/040/003/0554/0557

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2/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128780

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EQUIMOLAR MIXT. OF (SHOWN ON MICROFICHE). PYROLYSIS OF THESE, COMPLETED AT 130-50DEGREES FOR CHLORO AND DICHLOROMETHYL MEMBERS AND 210-30DEGREES FOR THE REMAINDER, GAVE DICHLORIDES OF HALOMETHYLPHOSPHONIC ACIDS AND NITRILES. TREATED WITH 1 MOLE DRY (SHOWN ON MICROFICHE). FACILITY: INST. ORG. KHIM., USSR.

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USSR

UDC: 546.185

~~SHOKOL, V.A.~~, GOLIK, G.A., TSYBA, V.T., and DERKACH, G.I., (Deceased), Institute of Organic Chemistry, Kiev, Academy of Sciences Ukrainian SSR

"Structure of Reaction Products of Amidoesters of Alkylphosphonic Acids With Phosphorus Pentachloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, pp 931-932

Abstract: A detailed study of the reaction product of amide of ethyl ester of methylphosphonic acid with phosphorus pentachloride showed that in its physicochemical constants it is identical to the isomeric product obtained by the authors from amide of diethyl ester of phosphoric acid and methyltetrachlorophosphorus. A comparison of IR spectra, P^{31} NMR and especially Cl^{35} NQR spectra shows that the compounds obtained in both cases have the structure of methyldichlorophosphazophosphoric acid dichloride $CH_3(Cl_2)P_\alpha = NP_\beta OCl_2$ rather than isomeric trichlorophosphazomethylphosphonic acid $CH_3PO(Cl)N=PCl_3$.

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