

JISSR

GINZBURG, I. P., KOCHERYZHENKOV, G. V., MATVEYEV, S. K., *Teplo. i Massoperenos. T. 1.*, Minsk, 1972, pp 65-74.

where $\lambda = 0.10$ is an empirical constant. The distribution of friction stress over the cross section of the boundary layer on an impermeable plate is found to be little sensitive to Reynolds number.

As analysis of numerical solutions shows, when there is a moderate longitudinal pressure gradient or injection, when the last expression is used for displacement path length, the dependence of u/v_e on yv_w/v near the wall remains near universal. Nevertheless, the pressure gradient is found to have a strong influence on the dependence of $c_+ / 2$ on $R^{**} = u_e \delta^{**} / \nu$, which is related to the influence of pressure gradient or injection on the velocity profile and on the friction stress profile in the external portion of the boundary layer. To provide a single-parameter representation of the friction stress profile in the boundary layer when there is a pressure gradient and injection, it is suggested that the new parameter

$$A = \frac{\delta}{\tau_w} \frac{dp}{dx} + \frac{\delta}{v_e} \frac{dv_e}{dx} \tau_w \beta^2 + \frac{v_e \delta}{\nu} \frac{1}{k_1} e^{(k_1 - k_2) A}$$

be used, which provides a universal representation for $\tau/\tau_w = \tau/\tau_w(y/\delta)$ with various condition of friction in the boundary layer. 16 Biblio. Refs. 2/2

USSR

UDC 621.386.8

KOCHEZHINSKIY, Yu. A., and PET'KOV, V. V., Institute of Physics of Metals of the Academy of Sciences of the UkrSSR, Kiev

"High-Temperature Attachment to the X-Ray Diffractometer"

Moscow, Pribory i Tekhnika Eksperimenta, No 1, Jan-Feb 72, pp 191--194

Abstract: The attachment to the X-ray diffractometer with a built in sorption pump providing a 10^{-5} torr vacuum and the possibility of free rotation of the attachment on the goniometer axis is described. The special features of the attachment, including the built in pump, the hermetic all-welded beryllium opening for preheating the body by pumping out the facility for fixing, heating, and temperature measuring of specimens up to 2000 °C, and the insertion of a vacuum-metering lamp in immediate proximity to the specimen, are discussed by reference to the schematic drawing and the circuit of the attachment. The temperature measuring accuracy is $\pm 1\%$, the accuracy in maintaining the temperature is $\pm 1^{\circ}\text{C}$, the

1/2

USSR

KOCHERZHINSKIY, YU. A., and PET'KOV, V. V., Pribory i Tekhnika Eksperimenta, No 1, Jan-Feb 72, pp 191-194

interval of diffraction angles is 0--80 deg., and the power input is up to 3 kw. The attachment weighs 7.5 kg, it can be used for the investigation of metallic and non-metallic materials. Fragments of diffraction patterns of Fe, Hf, and HfO₂ obtained with the help of the described attachment are shown. Three illustr., six biblio. refs.

2/2

- 173 -

Instrumentation and Equipment

USSR

UDC 621.386.1

KOCHERZHINSKIY, Yu. A. and PET'KOV, V. V.

"X-ray Cameras for High-Temperature (above 1000°C) Studies"

Kiev, Metallofizika, No 32, 1970, pp 130-142

Translation: A survey is made of the designs of Debye X-ray cameras and attachment cameras for X-ray diffractometers for investigations at high temperatures (1000-3000°C). Their advantages and disadvantages of these cameras in investigations of phase equilibria in metal systems are discussed and prospects for further improvement are reviewed.

Bibliography: 38 entries. Illustrations: 17

1/1

USSR

K
UDC: 621.394.4

KOCHESHKOV, B. I., STAROBENSKIY, M. O.

"A Device for Improving the Reliability of Transmitted Information"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 21, 1970, Author's Certificate No 274153, filed 24 Mar 1969, p 39

Abstract: This author's certificate introduces a device for improving the reliability of transmitted information in a system for data transmission with automatic error interrogation. The device contains a transmitter with cyclic code decoder and a receiver with cyclic code decoder. As a distinguishing feature of the patent, the message handling capacity of the channel for information signals is improved without impairing the reliability of the received signals by connecting a rectifier at the receiver input. An "error or interrogation" signal is sent to the controlling input of this rectifier, while a control module is connected to the transmitter decoder and to the receiver decoder. Each of these control modules contains a controlling section made in the form of a bistable memory element. An AND logic circuit is connected to the output of the bistable memory element. The other input of the AND circuit is connected to an "emergency" signal source. One of the inputs of the bistable element is connected to the decoder output, while the other input is connected to the interrogation signal source. In the receiver the other input of the bistable element is also connected to the "error" signal source.

1/1

USSR

UDC 541.572.5+541.572.8

ROMM, I. P., SADYKOVA, E. M., GUR'YANOVA, Ye. N., KOLLI, I. D., and KOCHESKOV, K. A., Academician, Physical Chemistry Institute imeni L. Ya. Karpov, Moscow, and Moscow State University imeni M. V. Lomonosov, Moscow

" p π -Conjugation in Triphenylphosphine"

Moscow, Doklady Akademii Nauk SSSR, Vol 195, No 2, 1970, pp 372-375

Abstract: The p π -conjugation (interaction of the undivided electron pair at P with the π -electrons of the aromatic system) of Ph_3P was studied on the basis of the dipole moments (d. m.) of complexes $\text{R}_3\text{P} \cdot \text{MX}_3$ (R = Bu, hexyl, octyl, Ph) of phosphines, which are active π -donors, with a number of acceptors ($\text{MX}_3 = \text{AlBr}_3, \text{GaCl}_3, \text{BCl}_3$) and of the heats of formation of $\text{R}_3\text{P} \cdot \text{MX}_3$ ($\text{MX}_3 = \text{AlBr}_3, \text{GaCl}_3$). The thermal effects involved in the substitution of R_3P with dimethylcyclohexylamine in $\text{R}_3\text{P} \cdot \text{BF}_3$ (R = Bu, hexyl, Ph) and of Ph_3P with Bu_3P in $\text{Ph}_3\text{P} \cdot \text{BCl}_3$ were also considered. The d. m. of complexes $\text{Alkyl}_3\text{P} \cdot \text{AlBr}_3$ were close to each other, but the heat of formation of the second was much lower than that of the first because of energy losses associated with breaking of the p π -conjugation in R_3P during complex-formation. On the basis of this difference and similar differences for complexes with other

1/2

USSR

ROMM, I. P., et al., Doklady Akademii Nauk SSSR, Vol 195, No 2, 1970, pp 372-375

acceptors (those for complexes with BF_3 and BCl_3 were calculated from the thermal effects in the substitution reactions), the p π -conjugation energy E_c in Ph_3P was estimated at 11.7 ± 2 kcal/mole as an average of values based on data for complexes with the four acceptors MX_3 . E_c for Ph_3P was lower than that for N-methyldiphenylamine ($E_c = 14.9$ kcal/mole) and much lower than that for Ph_3N .

2/2

- 56 -

Organometallic Compounds

USSR

UDC 547.13 + 661.781.6

FOMINA, N. V., SHEVERDINA, N. O., and KOCHESHKOV, K. A., Academician,
Physico-Chemical Institute imeni I. Ya. Karpov, Moscow

"Synthesis of Germanium-Organic Compounds of the Type Ar_2GeX_2 "

Moscow, Doklady Akademii Nauk SSSR, Vol 201, No 5, 1971, pp 1128-1129

Abstract: Previous methods of preparing germanium-organic compounds led to mixtures which were difficult to purify. A method proposed earlier for the arylation or alkylation of germanium salts in the presence of Cu powder was extended to cover the introduction of a second aryl group starting with $ArGeX_3$ at much higher temperatures. All reactions were run in an argon atmosphere. Starting with tribromophenylgermanium at 250° for 10 hours with Cu and iodobenzene, dibromodiphenylgermanium was obtained. Yield was dependent on the ratio of the starting materials. Diiododiphenyl-germanium and dibromophenyltoluylgermanium were obtained in the same fashion.

1/1

1/2 021 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--SYNTHESIS OF UNSYMMETRICAL ORGANOTIN COMPOUNDS -U-
AUTHOR--(03)--MELNICHENKO, L.S., ZEMLANSKIY, N.N., KOCHESHKOV, K.A.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(3), 597-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ORGANOTIN COMPOUND, ORGANOLITHIUM COMPOUND, CHEMICAL
SYNTHESIS, UV LIGHT, THERMAL DECOMPOSITION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1984/1563 STEP NO--UR/0020/70/190/003/0597/0599
CIRC ACCESSION NO--AT0100181
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0100181

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION OF PHLI WITH RSNCL SUB3 IN ET SUB2 0 AT MINUS 20DEGREES GAVE ETPH SUB3 SN AND BUPH SUB3 SN. KEEPING 2 MOLES ETSNCL SUB3 AND 1 MOLE ETPH SUB3 SN IN UV LIGHT 2.75 HR AT SMALLER THAN 35DEGREES GAVE 90.9PERCENT ETPHSNCL SUB2, M. 66DEGREES, ALSO FORMED FROM THIS MIXT. I 1.5 HR AT 140DEGREES. SIMILARLY BUSNCL SUB3 AND BUPH SUB3 SN GAVE 90.3PERCENT BUPHSNCL SUB2, M. 50DEGREES. AT ROOM TEMP., THE REACTION IS SLOW AND REQUIRES 5 DAYS FOR 65PERCENT CONVERSION. ETPHSNCL SUB2 AND AQ. KF GAVE 95PERCENT ETPHSNF SUB2, DECOMPD. LARGER THAN 300; BUPHSNF SUB2, DECOMPD. LARGER THAN 250DEGREES, WAS PREPD. SIMILARLY. BUPHSNF SUB2 AND PHLI IN ET SUB2 0 AT MINUS 25DEGREES GAVE 92.7PERCENT BUPH SUB3 SN, M. 61DEGREES.

UNCLASSIFIED

Acc. Nr.

A70045325

Abstracting Service:

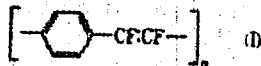
CHEMICAL ABST.

K 5-70

Ref. Code

UR0020

90897m Synthesis of conjugated polymeric organofluorine compounds. Panov, E. M.; Rybakova, L. F.; Kocheshkov, K. A. (Fiz.-Khim. Inst. im. Karpova, Moscow, USSR). Dokl. Akad. Nauk SSSR 1970, 190(1), 122-4 [Chem] (Russ). A mixt. of poly-[(1,2-difluorovinylene)-p-phenylenes] (I) was obtained in 85-90% yield by adding $p\text{-LiC}_6\text{H}_4\text{CF}_2\text{CFCl}$ to an equiv. amt. of $p\text{-BrC}_6\text{H}_4\text{CF}_2\text{CFCl}$ in ether at -75° under Ar or N. The I mixt. was a bright yellow powder, decompd. $>320^\circ$, and had av. mol.



wt. 844 (d.p. ~ 7). I ($n = 6$) was obtained in 30-5% yield by dissolving mixed I in toluene and cooling. Addn. of Et_2O to the mother liq. yielded $\sim 40\%$ I ($n = 4$) (Ia). The mother liquor from this step was then poured into MeOH to ppt. $\sim 15\%$ I ($n = 3$) (Ib), m. 175° . The absence of Cl and Br (end groups) and the same elementary compn. for all I suggested a cyclic structure. Ib added 3 moles Br after 3 hr at 25° in CCl_4 to give 85% cyclotris[p -(1,2-difluoro-1,2-dibromoethylene)phenylene]. Cyclotetrakis[p -(1,2-difluoro-1,2-dibromoethylene)phenylene] (62%) was similarly obtained at higher temp. after 3 hr from Ia. I were oxidized to terephthalic acid by Cr_2O_3 in 40% HOAc.

DBJR

 REEL/FRAME
 19780249

USSR

UDC 621.357.5.035:621.70.027(088.8)

ABAYDULIN, G. U., URETSKIY, R. A., and KOCHESHKOVA, I. I.

"Apparatus for the Electrochemical Treatment of Metals"

Author's Certificate No 338342, filed 21 Oct 70, published 15 Jun 72 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L288P)

Translation: A device is patented for the electrochemical treatment of metals which is in the shape of a drum having a regulator for the flow of the process solution, electric driving gear, a power supply, a pipe for the delivery of the process solution, a bath, and a pump. It is improved in that in order to increase the efficiency and the technological possibilities of the instrument, along the axis of revolution of the barrel is located in a mobile chamber having throttled openings directed towards the zone of the treatment of the piece.

1/1

- 20 -

Acc. Nr: **AP0101484**

Abstracting Service:
CHEMICAL ABST. **6-70**

Ref. Code:
4R0079

K

121652j Reactions of a series of organotin compounds with diethylamine. ~~Kochetikhina, K. G.; Domrachev, G. A.; Razuvaev, G. A. (USSR). ZH. Obshch. Khim. 1970, 40(2), 327-9 (Russ).~~ Heating R₂Sn with Et₂NH 6 hr at 400° gave the following % yields of RH, olefin, R₂, H₂, C₂H₄, MeCN, and tar, resp. (from the indicated value of R): Et, 3.3, 0, 0.34, 0.13, 0.38, 0.21, 73.6; Pr, 2.7, 0.72, 0.1, 0.33, 0.53, 0.18, 68.1; Bu, 2.0, 1.54, trace, 0.37, 0.52, 0.12, 71.5; and iso-C₄H₉, 1.89, 1.81, 0, 0.41, 0.55, 0.07, 73.5%. The main reaction direction is the cleavage of H from the amine to form RH and with increasing chain length of R the proportion of the disproportionation reaction of the resulting radicals increases, while the decompn. of the radicals in the presence of Et₂NH is inhibited. The change in the product proportion in the presence of Et₂NH during such pyrolysis of R₂Sn is ascribed to coordination of the amine on a Sn atom, which reduces the polar effect of Sn on the β-elimination reaction. G. M. Kosolapoff

1/

CK

7

REEL/FRAME
19851390

Acc. Nr: **AP0101483**Abstracting Service:
CHEMICAL ABST. 6:70

Ref. Code:

UR 0079

✓ 121653k Reactions of tetracyclohexyltin. Razuvayev, G. A.; Domrachev, G. A.; Kochetikhina, K. G.; Goncharov, V. A. (USSR). *Zh. Obshch. Khim.* 1970, 40(2), 325-7 (Russ). Pyrolysis of $(C_6H_{11})_4Sn$ at 250° gave mainly cyclohexane and cyclohexene, metallic Sn, and H in 12% conversion; at 300° traces of methylcyclopentene and dicyclohexyl were also formed and some tar formation was obsd., while at 350° more cyclohexane and less cyclohexene were formed, the other product yields being comparable to those above. Reaction in the presence of Et_3NH gave more cyclohexane and less cyclohexene than were obtained without the added amine at 250°, but at 350° the yield of cyclohexane was lower and that of cyclohexene was higher than were obtained without the amine. Other product yields were comparable to those above. In the presence of $(CH_2OH)_2$ the yield of cyclohexane was raised, that of cyclohexene lowered considerably, and other product yields were comparable to those above, while some $(SnO_2CCH_2O)_n$ was also formed. Thus, the disproportionation of the free radical intermediates increases with the temp. rise, while the β -elimination reaction is inhibited by the higher temp. The effect of the added amine is ascribed to coordination of it with the β -H atom (with respect to the Sn atom) of the cyclohexyl group. Thus, donor reagents in reaction with this R_4Sn exhibit their nucleophilic nature in the 1st step, then react as acids or as bases. G. M. Kosolapoff

REEL/FRAME

19851389

USSR

UDC 621.382.3.029.6

PETROV, B. K., KOCHETKOV, A. I., SYNOROV, V. F.

"Calculating the Stationary Temperature Fields in Overlay Superhigh Frequency Transistors"

Moscow, Radiotekhnika i elektronika, Vol 17, No 10, 1972, pp 2176-2181

Abstract: The stationary temperature distribution in the semiconductor crystal of transistors with band emitters was first calculated in the two-dimensional approximation [W. R. Wilcox, IEEE Trans. Electron Devices, ED-10, 5, 308, 1963], and later a simple formula was obtained [V. F. Synorov, et al., Radiotekhnika i elektronika, Vol 16, No 6, 1090, 1971] for the thermal resistance of the crystal in superhigh frequency overlay transistors. In the two-dimensional approximation the heat fluxes from the edge emitters in the direction of the Oy axis were neglected, and the emitter bands were considered infinitely long. Now the equation of thermal conductivity has been solved to obtain the stationary temperature distribution R_T and the formula for the thermal resistance of the semiconductor crystal of a superhigh frequency overlay transistor for the more general case of a three-dimensional heat flux. A numerical example of calculating the thermal resistance of a crystal for a standard powerful superhigh frequency silicon transistor is presented to compare the two-dimensional and three-dimensional theories. In real instruments the temperature drop within the emitter area is highly significant ($\approx 50\%$).

1/1

Physiology

USSR

UDC 616.127-071:358.4

KONDRAKOV, V. M., Candidate of Medical Sciences, Lieutenant Colonel, Medical Corps, and KOCHETOV, A. K., Candidate of Medical Sciences, Lieutenant Colonel, Medical Corps

"Phase Analysis of the Contractile Function of the Myocardiosclerotic Heart in Hypoxia"

Moscow, Voenno-Meditsinskiy Zhurnal, No 4, 1973, pp 65-68

Abstract: Polycardiographic studies were conducted on 3 groups of fasting subjects, or 3-3.5 hrs after a meal; the studies were repeated during the 18-20th minute of breathing a gas mixture containing 9.8% O₂. Group I consisted of 30 control subjects with a mean age of 37 yr. Group II consisted of 37 patients with focal postinflammatory cardiosclerosis, with a mean age of 34 yr. Group III consisted of 47 patients with limited atherosclerotic cardiosclerosis. All of the subjects were without complaints and had normal blood pressure. Analysis of the results showed that duration of the cardiac cycle differed little between the 3 groups. However, the average phase of asynchronous contraction in Group III was prolonged in comparison with Group I, which apparently was due to left ventricular hypertrophy, as well as dystrophic and sclerotic changes in the myocardium. Again, in comparison with
1/2

USSR

KONDRAKOV, V. M and KOCHETOV, A. K., *Voyenno-Meditsinskiy Zhurnal*, No 4, 1973, pp 65-68

Group I, mechanical systole in Group III was prolonged. The intrasystolic index, rate of increase in intraventricular pressure, and the mechanical coefficient in Group III were significantly decreased in comparison with Groups I and II ($P < 0.001$), while the cardiac tension index was increased in Group III in relation to the other 2 groups ($P < 0.001$). In the hypoxic test the heart rate increased by 5-7 beats/min in all 3 groups of subjects. In Groups I and II the phase of isometric contraction decreased and the rate of rise in the intraventricular pressure increased. In Group III in most of the subjects there was a tendency for the phase of isometric contraction to decrease; the rate of increase in the intraventricular pressure was decreased, as well as the intrasystolic index. These changes in the Group III subjects were indicative of stage I hypodynamia cordis.

2/2

USSR

UDC: 539.171.017

AZIMOV, S. A., DAUDOV, Z. Kh., KOCHETKOV, G. A., KRATENKO, Yu. P., LEV-KOVICH, S. G., Tashkent State University imeni V. I. Lenin

"Fluctuations of the Number of Particles, and Transition Effects in Electron-Photon Showers in Lead at Energies Greater Than 20 GeV"

Moscow, Izvestiya Akademii Nauk SSSR: Ser. Fizicheskaya, Vol 37, No 7, Jul 73, pp 1354-1355

Abstract: Experimental data are presented on fluctuations of the number of particles at depths of 1.5, 4, 11, 15, 19, and 23 radiation units in electromagnetic cascades at energies greater than 20 GeV for four energy intervals. The lead-brass transition curve is given for five brass layers located at a depth of 9.9 radiation units.

1/1

USSR

UDC 621.791.053.01:669.017.3:669.71+621.762

KOCHETKOV, P. G., Candidate of Engineering Sciences, and NIKIFOROV, G. D.,
Doctor of Engineering Sciences, Moscow Aviation Technology Institute

"Effect of Structure and Gases Contained in Sintered Aluminum Powder on Weld
Bath Forming"

Moscow, Svarochnoye Proizvodstvo, No 3, Mar 73, pp 27-28

Abstract: A study was made of the effect of structure and gases in sintered aluminum powder (SAP) on weld seam formation. A complex composition of mixtures exist in SAP of different gas sources from complex hydroxide films on the particles, bubbles, moisture, and aluminum stearine and stearates which amount to 200-250 cm²/100g in the initial material. It was established that satisfactory weldability of SAP can be achieved by two means: use of increased pressures during welding or complete degassing of the material. The first one is the most complex. It has been associated with the use of specialized equipment and does not ensure stable weld joint properties because the causes of porosity are not eliminated, the liberation of gases being only suppressed during the welding process. The second method, associated with total degassing of the material, can be promoted by the use of a specified technology of SAP

1/2

USSR

KOCHETKOV, P. G., and NIKIFOROV, G. D., Svarochnoye Proizvodstvo, No 3, Mar 73, pp 27-28

treatment. In this case the problem of selecting the most practical temperature-time mode of briquette annealing should be solved and measures undertaken to control gas content at the different stages of semi-finished produced manufacture. 5 figures, 2 tables, 3 bibliographic references.

2/2

- 72 -

USSR

UDC 542.91.547.455:547.1'118

SHIBAYEV, V. N., KUSOV, Yu. Yu., TROITSKIY, M. F., and KOCHETKOV, N. K.,
Institute of Organic Chemistry imeni N. D. Zelinskiy, Academy of Sciences
USSR

"Chemistry of Glycosyl Phosphates and Their Derivatives. Communication 4.
Phosphorylation of Benzoylated Glycosylacetates of the Phosphoric Acid and
Synthesis of α - and β -Anomers of 4-O-Methylsulfonyl-D-galactopyranosyl
Phosphate"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 8, Aug 73,
pp 1862-1867

Abstract: The synthesis of α - and β -anomers of 4-O-methylsulfonyl-D-galactopyranosyl phosphate was carried out by fusion of 1-O-acetyl-2,3,6-tri-O-benzoyl-4-O-methylsulfonyl- β -D-galactopyranose with anhydrous H_3PO_4 . During phosphorylation of glycosylacetates containing a benzoyl group at C-2, the reaction products may be predominantly β -anomers of glycosyl phosphates. It was shown to be possible to use ion exchange chromatography for the separation of a mixture of anomers of the shielded glycosyl phosphates.

1/1

- 30 -

USSR

UDC 542.91:547.455.547.1'118

SHIBAYEV, V. N., KUSOV, YU. YU., KUCHAR, SH., and KOCHETKOV, N. K.,
Institute of Organic Chemistry imeni N. D. Zelinskiy, Academy of
Sciences USSR

"The Chemistry of Glycosyl Phosphates and Their Derivatives. Com-
munication 2. The Synthesis of Deoxyglycosyl Phosphate Deriva-
tives of 6-, 4-, and 3-Deoxy-D-Glucose"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 2,
1973, pp 430-434

Abstract: Synthesis of deoxyglycosyl phosphate derivatives of 6-,
4-, and 3-deoxy-D-glucose was achieved through fusion of the β -
acetates of deoxysugars with anhydrous H_3PO_4 . Acetylation of
deoxysugars was attained with Ac_2O in the presence of $AcONa$ (100° ,
2 h), and subsequent phosphorylation of the resultant β -tetra-
acetates was performed with an 8-fold excess of H_3PO_4 under vacuum
at 50° . Deacetylation of the products with 1 N LiOH resulted in
practically complete removal of inorganic phosphate as the lithium

1/3

USSR

SHIBAYEV, V. N., et al., *Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya*, No 2, 1973, pp 430-434

salt. The resultant α - and β -anomers of the deoxyglycosylphosphates were resolved by chromatography on a Dowex-1x8 (HCO_3^-) column, by elution with a linear gradient of triethylammonium bicarbonate (pH 7.5). In this manner, the respective triethylammonium salts of 3-deoxy- α -D-ribohexopyranosyl phosphate (I), 3-deoxy- β -D-ribohexopyranosyl phosphate (II), 4-deoxy- α -D-xylohexopyranosyl phosphate (III), 4-deoxy- β -D-xylohexopyranosyl phosphate (IV), 6-deoxy- α -D-glucopyranosyl phosphate (V), 6-deoxy- β -D-glucopyranosyl phosphate (VI), α -D-glucopyranosyl phosphate (VII), and β -D-glucopyranosyl phosphate (VIII) were synthesized from the corresponding β -tetraacetates (I and II from 1,2,4,6-tetra-O-acetyl-3-deoxy- β -D-ribohexopyranose, III and IV from 1,2,3,6-tetra-O-acetyl-4-deoxy- β -D-xylohexopyranose, V and VI from 1,2,3,4-tetra-O-acetyl-6-deoxy- β -D-glucopyranose), and VII and VIII from 1,2,3,4,6-penta-O-acetyl- β -D-glucopyranose. The average yield of the deoxyglycosyl phosphates ranged from 35-40%, and formation of the α -anomer predominated under these conditions of phosphorylation. In the case of the D-glucopyranosyl

USSR

SHIBAYEV, V. N., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 2, 1973, pp 430-434

phosphates the ratios of α - and β -anomer were reversed, apparently due to the shorter phosphorylation times. Optical rotatory dispersion data and $[\alpha]_D$ values were used to evaluate the configurations about C-1. Mobilities on paper electrophoresis were identical for the deoxyglycosyl phosphates and the α -D-glucopyranosyl phosphate (paper M, Leningrad Factory No. 2, 20-25 V/cm, 1 hr, 0.05 M triethylammonium bicarbonate buffer, pH 7.5), while the former showed greater mobilities on paper chromatography in two solvent systems.

3/3

USSR

UDC 542.91:547.455:547.1.118

KOCHETKOV, N. K., SHIBAYEV, V. N., KUSOV, YU. YU., and TROITSKIY, M. F., Institute of Organic Chemistry imeni N. D. Zelinskiy, Academy of Sciences USSR

"The Chemistry of Glycosyl Phosphates and Their Derivatives. Communication I. The Synthesis of 4-Thio- α -D-Glucopyranosyl Phosphate"

Moscow, Izv. Akad. Nauk SSR, Ser. Khimicheskaya, No 2, 1973, pp 425-430

Abstract: This is the first reported synthesis of 4-thio- α -D-glucopyranosyl phosphate (I). The reaction sequences leading to the synthesis of I were as follows: 5.6 g 2,3,6-tri-O-benzoyl-4-O-methylsulfonyl- α -methyl-D-glucopyranoside and 4.8 g C₆H₅COSK were dissolved in 50 ml DMF and heated to 140°; the mixture was cooled, sediment removed, and the filtrate concentrated in vacuo. The resultant residue from the filtrate was dissolved in CHCl₃, filtered through a column of activated charcoal, concentrated by vacuum evaporation, and recrystallized from absolute ethanol.

1/3

- 45 -

USSR

KOCHETKOV, N. K., et al., Izv. Akad. Nauk SSR, Ser. Khimicheskaya, No 2, 1973, pp 425-430

Three and eight tenths g (64%) of 2,3,6-tri-O-benzoyl-4-thio-4-S-benzoyl- α -methyl-D-glucopyranoside (II) were obtained. The structure of II was confirmed by IR spectra. Subsequently, 1 g II was treated with 50% HBr in glacial AcOH (20 ml); the suspension was stirred for 24 h at 20 $^{\circ}$, poured into 20 ml of glacial AcOH, and extracted three times with 50 ml CHCl₃. The extract was washed with NaHCO₃, ice water, dried over MgSO₄, concentrated by evaporation, and yielded 0.95 g of 2,3,6-tri-O-benzoyl-4-thio-4-S-benzoyl- α -D-glucopyranosyl bromide (III). Five tenths g of the chromatographically homogenous III was dissolved in 10 ml CHCl₃ (alcohol free), and 0.5 g AgOAc added. The suspension was stirred 24 h, filtered through celite, concentrated by evaporation, and the residue recrystallized from abs. ethanol to yield 0.32 g (64.5%) 1-O-acetyl-2,3,6-tri-O-benzoyl-4-thio-4-S-benzoyl- β -D-glucopyranose (IV) m.p. 129-132 $^{\circ}$, $[\alpha]_D^{20} + 56.5^{\circ}$. IR and PMR spectra confirmed IV. 0.2 g IV were then phosphorylated with 0.21 g crystalline H₃PO₄ in vacuum for 3 h at 50 $^{\circ}$, the mixture cooled,

2/3

USSR

KOCHETKOV, N. K., et al., Izv. Akad. Nauk SSR, Ser. Khimicheskaya, No 2, 1973, pp 425-430

5 g crushed ice added, and extracted with CHCl_3 containing 0.8 ml trioctylamine. The CHCl_3 extract was concentrated by evaporation, applied to a Dower-1x4 (HCO_3^-) column, and eluted with a linear gradient (0.1-0.5 M) of a water-methanol solution of triethylammonium bicarbonate. Fractions containing organic phosphorus were pooled, concentrated by evaporation, and yielded 7.9 g (3.1%) of 2,3,6-tri-O-benzoyl-4-thio-4-S-benzoyl- α -D-glucopyranosyl phosphate as the triethylammonium salt (V). Finally, 2.29 g of V was debenzoylated with 3 ml CH_3ONa in argon saturated methanol for 48 hr at 0° . The mixture was filtered through a Dowex-50 column (H^+); the eluate neutralized with 5% NH_4OH , evaporated, dissolved in cold water, washed with ether, and rapidly evaporated to dryness. I was obtained in a yield of 1.83 g (79%); $[\alpha]_D^{20} + 60.5^\circ$.

D

3/3

- 46 -

USSR

UDC 547.434

ZHIBAYEV, V. N., KUSOV, YU. YU. and KUCHETKOV, N. K. (Corresponding Member of the USSR Academy of Sciences), Institute of Organic Chemistry imeni N. D. Zelinskiy, USSR Academy of Sciences, Moscow

"A New Synthesis of α -D-Glucopyranosylphosphate-6- H^3 "

Moscow, Doklady Akademii Nauk SSSR, Vol 203, No 3, 1976, pp 612-615

Abstract: Tagged derivatives of the glycosulphosphates are widely used in the study of hydrocarbon metabolism and the mechanisms of fermentation reactions. Synthesis of tagged glycosylphosphates at this time is achieved either through fermentation or with chemical methods involving phosphorylation of evenly tagged derivatives of the monosaccharides or of those with specifically positioned tags. But these methods offer serious difficulty both in procedure and in getting an adequate supply of initial material. Continuing their earlier work on the modification of α -D-glucopyranosylphosphate, the authors devised a convenient method of obtaining the 6-tritiumated derivative of that compound, the radioactive tag being introduced in the last stage of synthesis. $Na^{22}O_2$ was chosen as the natural radioactive source for this purpose. This demonstrated method of obtaining the tagged compound in question can evidently be extended to use with other glycosylphosphates as initial material.

1/1

USSR

UDC 541.15:547.455

KOCHETKOV, N. K., KUDRYASHOV, L. I., CHLENOV, M. A., and GRINEVA, L. P.,
Institute of Organic Chemistry, Academy of Sciences USSR imeni N. D.
Zelinskiy

"Radiolysis of Aqueous Solutions of Some Organic Monophosphates"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 2071-2076

Abstract: A study was conducted on the radiation-induced chemical conversion of a number of organic monophosphates. Cyclohexyl monophosphate and glucose monophosphate containing the phosphate group in 1 and 6 positions were selected for the study. Determinations were made of the decomposition yields of the dipotassium salt of α -D-glucose-1 phosphate (G-1-P) and disodium salt of D-glucose-6 phosphate (G-6-P) as well as of the yields of inorganic phosphate on radiolysis of these salts and cyclohexyl phosphate disodium salt. The OH radical appears to play the dominant role in the process of radiation dephosphorylation. The formation of inorganic phosphorus is not followed by the formation of glucose. The evaluation of the total amount of neutral sugars in the case of both sugar phosphates has shown that the yields correlate well with those of inorganic phosphate. The yield of reducing-type sugars was reduced to one half and equaled 1.0 and 0.5 for dipotassium salt 1/2

USSR

KOCHETKOV, N. K., et al., Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9,
pp 2071-2076

of α -glucose-1 phosphate and disodium salt of D-glucose-6 phosphate, respectively. The neutral salts included desoxy- and desoxyketo compounds. Further studies of radiolysis products and related regularities will provide a clearer pattern of radiative dephosphorylation in terms of biological activity.

2/2

- 64 -

1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--THE CHEMICAL METHOD OF SPECIFIC DEGRADATION OF RNA WITH SELECTIVELY
REMOVED BASES. 3.FISSION OF PHOSPHOESTER BOND IN RIBOSE,2, AND
AUTHOR--(05)-TURCHINSKIY, M.F., GUSKOVA, L.I., KHAZAI, I.K., BUDOYSKIY,
E.I., KOCHETKOV, N.K.
COUNTRY OF INFO--USSR

SOURCE--MOLEKULARNAYA BIOLOGIYA, 1970, VOL 4, NR 3, PP 428-434

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--RNA, CHEMICAL DECOMPOSITION, AMINE DERIVATIVE, AMINE CATALYST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1998/0187

STEP NO--UR/0463/70/004/003/0428/0434

CIRC ACCESSION NO--AP0120885

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120885

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AMINE CATALYZED FISSION WAS STUDIED OF THE PHOSPHOESTER BOND IN RHE RIBOSE,2(3), PHOSTATE, THE COMPOUND MODELLING INTERNUCLEOTIDE LINKAGE IN RNA WITH REMVOED BASE. IT WAS SHOWN THAT RIBOSE,3,PHOSPHATE WITH PHOSPHOESTER BOND IN BETA POSITION OT HE GLYCOSIDE CENTER WAS ONLY SPLIT IN THE PRESENCE OF THE PRIMARY AMINES. THE ABILITY OF AMINES INVESTIGATED TO CATALYZE THE CLEAVAGE OF THIS BOND DECREASES IN A SEQUENCE: P,ANISIDINE IS GREATER THAN OR EQUAL TO ANILINE APPROXIMATELY O,AMINOBENZOIC ACID GREATER THAN BENZYLAMINE APPROXIMATELY EQUAL TO LYSINE GREATER THAN ETHYLENEDIAMINE GREATER THAN P,AMINO BENZOIC ACID APPROXIMATELY EQUAL TO SULPHANYLIC ACID GREATER THAN BETA ALANINE APPROXIMATELY EQUAL TO METHYLAMINE. IN THE PRESENCE OF P,ANISIDINE UNDER MILD CONDITIONS (PH 5.30DEGREES, 5 HRS) THE RAPID SPECIFIC FISSION OF THE PHOSPHOSTER BOND OCCURS BOTH IN RIBOSE,3,PHOSPHATE AND IN DEURIDYLC RNA. PHENYLHYDRAZINE CAUSES RAPID SPLITTING OF RIBOSE,2,PHOSPSHATE BUT NOT OF RIBOSE,3,PHOSPHATE. FACILITY: INSTITUTE OF CHEMISTRY OF NATURAL PRODUCTS, ACADEMY OF SCIENCES, USSR, MOSCOW.

UNCLASSIFIED

USSR

K

UDC 547.455

2

KUDRYASHOV, L. I., LIVERTOVSKAYA, T. YA., VOZNESENSKAYA, S. V.,
KOVALEV, YU. I., SHARPATYY, V. A., and KOCHETKOV, N. K.

"Radiation Chemistry of Carbohydrates. XII. Effect of Structural Factors on Course of Radiolysis Processes of Aqueous Solutions of Methylglycosides"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 5, May 70, pp 1133-1137

Abstract: The authors studied regularities reflecting the relationship between the structure of the glycoside molecule and processes occurring during and after irradiation of aqueous solutions. The objects of study chosen were α -methyl-D-glucopyranoside, β -methyl-L-arabinopyranoside and α -methyl-D-galactopyranoside. The radiation sources used were a Co-60 device and an electron accelerator for frozen solutions. The periodate oxidation method was used to determine the glycoside concentrations of the irradiated solutions. It was found that the stereochemistry of methylglycosides has a significant

1/2

USSR

KUDRYASHOV, L. I., et al., Zhurnal Obshchey Khimii, Vol 40, No 5, May 70, pp 1133-1137

effect on their radiation resistance. There is practically no formation of free monosaccharides in the radiolysis of dilute aqueous solutions. The principal process in the radiolysis of α -methyl-D-galactopyranoside and β -methyl-L-arabinopyranoside is the formation of deoxy sugars. According to EPR measurements, the composition and ratio of radiolysis products depend on the structure of the initial molecules and the reactivity of the intermediate particles that form.

2/2

USSR

UDC 541.15

KOCHETKOV, N. K., Corresponding Member Academy of Sciences USSR; KUDRYASHOV, L. I., and SENCHENKOVA, T. M., Institute of Organic Chemistry imeni N. D. Zelinskiy, Academy of Sciences USSR, Moscow

"Racemization of alpha-Amino Acids under the Action of gamma-Radiation"

Moscow, Doklady Akademii Nauk SSSR, Vol 195, No 2, 1970, pp 410-412

Abstract: The racemization in frozen $2-3 \times 10^{-3}M$ aqueous solutions at minus 78° of L- and D-glutamic acids under the effect of gamma-irradiation was studied. The solutions were irradiated in sealed glass tubes under N_2 with doses of $0.3 - 1.5 \times 10^{22}$ eV/g at dosage rates of $0.6-2 \times 10^{16}$ eV/g.sec. On irradiation of L-glutamic acid, a glutamic acid fraction was isolated which had a specific rotation $\alpha_D^{20} = +8.5^\circ$ and m. p. 190° vs. $\alpha_D^{20} = +13.6^\circ$ and m. p. 236° for L-glutamic acid. The alphanaphthylhydantoin derivative of this fraction had m.p. $180-186^\circ$ vs. m. p. 225° for the corresponding derivative of L-glutamic acid. Conclusive evidence indicating inversion of the configuration of D-glutamic acid as a result of irradiation, was also obtained; the specific rotation was lowered and a fraction was isolated by preparative separation on paper and elution that was shown to be L-glutamic
1/2

USSR

KOCHETKOV, N. K., et al. Doklady Akademii Nauk SSSR, Vol 195, No 2, 1970, pp 410-412

acid by applying L-glutamic acid dehydrogenase from bull liver. The extent of racemization could not be estimated from the quantitative standpoint at this stage.

2/2

- 82 -

1/2 006 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--SIALOGLYCOLIPIDS OF THE STARFISH *DISTOLASTERIAS NIPON*. STRUCTURE OF
THE OLIGOSACCHARIDE CHAIN -U-
AUTHOR--(04)-KOCHETKOV, N.K., ZHUKOVA, I.G., SMIRNOVA, G.P., BOGDANOVSKAYA,
T.A. K
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(2), 358-61, CHEM
DATE PUBLISHED-----7C
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--STARFISH, LIPID, FRACTIONATION, CHROMATOGRAPHIC SEPARATION,
SILICA GEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3003/1489 STEP NO--UR/0020/70/191/002/0358/0361
CIRC ACCESSION NO--AT0130418
UNCLASSIFIED

2/2 006

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0130418

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. CHROMATOG. ON SILICA GEL AND ACID HYDROLYSIS WERE USED ALONG WITH METHANOLYSIS AND METHYLATION WITH MEL TO SHOW THAT THE STARFISH YIELDS AT LEAST 3 GLYCOLIPIDS (A, B AND C) WHICH ON METHANOLYSIS YIELD PHYTOSPHINGOSINE AND ME ESTERS OF HIGHER FATTY ACIDS. A AND C CONTAIN ONLY D GLUCOSE WHILE C CONTAINS D GLUCOSE AND D GALACTOSE, IN EQUAL AMTS. PARTIAL STRUCTURES ARE DEFINED.
FACILITY: INST. GRG. KHIM. IN. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.762.669.71

KOTIYEVA, L. U., FILICHKINA, M. P., and KOCHETKOV, P. G., Moscow Aviation Technological Institute

"Study of the Effect of the Mineralization Agent on Properties of SAP Products"

Otdchonikidze, Izvestiya Vysshikh Uchebnykh Zavedenij, Tsvetnaya Metallurgiya, No 1, 1973, pp 145-149

Abstract: In order to increase the mechanical properties of products made of SAP (sintered aluminum powder), an attempt was made to increase the concentration of α - Al_2O_3 phase in the Al powder by adding to it the mineralization agent AlF_3 . Aluminum powder with AlF_3 was subjected to sintering at 823°C for 3-8 hours and the percentage of oxide phases in it was measured. The obtained results showed that the addition of 3 wt.% AlF_3 to Al powder increased the quantity of oxide phases by 1.5-3%, with predominant granule fractions of $-0.074 + 0.044 \text{ mm}$ after sintering at 823°C . At this temperature AlF_3 reacts directly with $\text{AlO}(\text{OH})$ and $\text{Al}(\text{OH})_3$ by forming α - Al_2O_3 small crystals, which become crystallization centers capable of producing α - Al_2O_3 phase during the recrystallization heating. Reactions of AlF_3 with $\text{AlO}(\text{OH})$ and $\text{Al}(\text{OH})_3$ also produces HF , which reacts directly with γ - Al_2O_3 and transforms

USSR

KOTIYEVA, L. U., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, No 1, 1973, pp 145-149

it into the α - Al_2O_3 phase. Without HF this transformation would be impossible. In the presence of AlF_3 in Al powder, a transformation of $\text{Al}(\text{OH})_3$ into $\text{AlO}(\text{OH})$ takes place at room temperature in hermetically sealed containers, which would be possible only at 583 - 625°C without the mineralization agent AlF_3 . When samples of Al powder with 3 wt.% AlF_3 were heated at 823°C for 6 hours, the tensile strength of samples was within 28 - 42 kg/mm^2 , and the relative elongation within 8-15%, compared with 22 - 40 kg/mm^2 and 3-7%, respectively, without AlF_3 . The best mechanical properties of SAP samples were obtained with powders containing - $0.074 + 0.044 \text{ mm}$ particles. SAP products containing AlF_3 mineralization agent can also be welded.

2/2

- 26 -

172 022 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--ON PATHOGENESIS OF PUPILLARY DISORDERS IN DIFFERENT FORMS OF
SYPHILIS OF THE NERVOUS SYSTEM -U-
AUTHOR--KOCHEKOV, V.D., BRAYSEV, A.V.
COUNTRY OF INFO--USSR
SOURCE--VESTNIK DERMATOLOGII I VENEROLOGII, 1970, NR 3, PP 53-58
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--EYE, VENEREAL DISEASE, NERVOUS SYSTEM DISEASE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1986/0627 STEP NO--UR/0206/70/000/003/0053/0058
CIRC ACCESSION NO--AP0102613
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102613

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PATTERN OF STRUCTURAL FUNCTIONAL CHANGES IN THE PUPIL AND OF PUPILLARY REACTIONS MAY BE USED TO A CERTAIN EXTENT FOR THE JUDGEMENT OF THE DURATION OF SYPHILITIC INFECTION OF THE FORM OF THE NERVOUS SYSTEM SYPHILIS (MESENCHYMAL OR PARENCHYMATOUS), AND OF THE LEVEL OF DISORDERS OF THE REFLECTORY ARCH OF PUPILLARY REACTIONS. PUPILLARY DISORDERS IN CONTAGIOUS FORM OF SYPHILIS ARE CHARACTERIZED BY MILD CLINICAL MANIFESTATIONS AND ARE DETERMINED BY THE INVOLVEMENT OF DISTAL AFFERENT AND EFFERENT FIBERS OF THE PUPILLARY REFLECTORY ARCH. IN EARLY MENINGO VASCULAR SYPHILIS OF THE NERVOUS SYSTEM A FURTHER INVOLVEMENT IN THE PROCESS OF ROOTS OF THE OCULOMOTOR NERVE OCCURS IN THEIR PASSAGE IN THE SUBARACHNOIDAL SPACE OF THE BASIS OF THE BRAIN. IN THIS FORM, AS IN CONTAGIOUS FORMS OF SYPHILIS, WEAKENING OF PUPILLARY REACTIONS WAS OBSERVED COMPARATIVELY RARELY. LATE FORMS OF MENINGO VASCULAR SYPHILIS ARE CHARACTERIZED BY DISORDERS OF PUPILLARY REACTIONS DUE TO THE INVOLVEMENT FIRST OF INSERTED NEURONS OF THE MIDBRAIN AND THEN OF ITS PARASYMPATHETIC NUCLEI. PUPILLARY DISORDERS IN LATE FORMS OF SYPHILIS OF THE NERVOUS SYSTEM ARE OBSERVED IN ALL PATIENTS, ARE CRUDE AND DUE MOSTLY TO THE AFFECTION OF PARASYMPATHETIC NUCLEI OF THE BRAIN STEM WHICH IS ACCOMPANIED, IN ADDITION TO THE LOSS OF PUPILLARY REACTIONS TO LIGHT, BY DISORDERS IN THE ACT OF CONVERGENCE AND ACCOMODATION.

UNCLASSIFIED

USSR

UDC 621.385.44

ZHUKOVSKIY, B.M., KOCHETKOV, V.I.

"Grid Unit For Beam Tetrode"

USSR Author's Certificate No 275238, filed 7 Jan 69, published 13 Dec 70 (from RZh--Elektronika i yeye primeneniya, No 4, 1971, Abstract No 4A145P)

Translation: A grid unit for a beam tetrode is proposed which contains a ceramic ring insulator and two planar grids -- screen and control. With the object of increasing the precision of interelectrode spacing device, both grids are fastened to the end face of the ceramic ring insulator, the screen grid directly and the control grid through a separating metallic ring, the thickness of which determines the spacing between the grids. With the object of simplifying assembly, the separating ring consists of two rings superimposed one on the other. The thickness of the supporting ring is equal to the thickness of the screen grid and of the adjusting ring to the separation between grids.

1/1

UDC 517.53

USSR

~~KOCHETKOV, V. K.~~

"Multiple Differentiation of Single-Parameter Families of One-Sheeted Functions"

Novosibirsk, Sibirskiy Matematicheskiy Zhurnal, Vol 12, No 2, 1971, pp 367-373

Abstract: This article proves multiple differentiability based on the parameter of a family of one-sheeted functions and gives an integral representation of the derivative of the functions for the parameter. From the values of the functions at the domain boundary, with the aid of the Schwarz integral, a function is constructed that is regular in the domain. Therefore, the essential consideration is finding the relationships which connect the value at the boundary of the domain of the function being constructed with known quantities. Using a function which is regular in the ring, the author constructs a function that is regular in the unit circle. The author proposes three theorems and gives proofs thereof. He then proceeds to show equivalency of the variation formulas and comments that the difference in variations for the constant is insignificant and due only to lack of normalization of $\Phi(w, t)$. The article contains two bibliographic citations.

1/1

1/2 024 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--COPRECIPITATION OF SMALL AMOUNTS OF GALLIUM WITH SOME METAL
HYDROXIDES -U-
AUTHOR--(04)-PLOTNIKOV, V.I., GIBOVA, E.G., KOCHETKOV, V.L., CHINAIEVA, V.P.
COUNTRY OF INFO--USSR
SOURCE--VESTN. AKAD. NAUK KAZ. SSR 1970, 26(2), 67-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--GALLIUM, HYDROXIDE, ALUMINUM COMPOUND, IRON COMPOUND, TITANIUM
COMPOUND, ZIRCONIUM COMPOUND, CHEMICAL PRECIPITATION, RARE EARTH
COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1981/0440 STEP NO--UR/0031/70/026/002/0067/0068
CIRC ACCESSION NO--AP0050461
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0050461

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE NATURE OF THE HYDROXIDE COLLECTOR ON THE COPPTN. OF GA WAS STUDIED. THE COPPTN. INCREASES WITH HYDROXIDES OF THE FOLLOWING METALS AL IS LESS THAN SC IS LESS THAN FE IS LESS THAN TI IS LESS THAN ZR IS LESS THAN TH. AT THE BEGINNING OF MAX. PPTN. OF GA (PH 6), THE HYDROXIDES ARE NEARLY COMPLETELY PPTD. IN THE CASE OF LA AND MG, THE COPPTN. CURVE IS MORE COMPLEX. AN INCREASE IN PH LEADS TO THE DISSOLN. OF THE GA HYDROXIDE PPT. BUT WITH THE BEGINNING OF PPTN. OF LA AND MG HYDROXIDES, IT IS AGAIN PPTD. THE COPPTN. OF GA WITH HYDROXIDES OF THE RARE EARTH ELEMENTS INCREASES IN THE SERIES ER IS LESS THAN DY IS LESS THAN TB IS LESS THAN GD. THE COPPTN. OF GA DEPENDS ON THE NATURE OF THE HYDROXIDE COLLECTOR. GA IS CAPTURED BY THE METAL HYDROXIDES FORMING COMPS. OF THE GALLATE TYPE. THE EFFECT OF THE ORDER OF MIXING OF THE SOLNS., TEMP., AMTS. OF GA AND COLLECTOR IN THE SAMPLE, CONCN. OF SALTS, ETC. DIFFERS LITTLE FROM LITERATURE DATA, E.G., FOR IN.

UNCLASSIFIED

AA0030206

K

stroke of the slide-block, compressed air is supplied to diaphragm 12. Air is ejected from under diaphragm 12'. The low-speed packs of discs come together and the high-speed ones separate, the working stroke of the slide-block takes place at low speed.

23.10.67 as 1195585/25-27. MALYGIN P.V. & KOCHETKOV
V.M. GORKII MOTOR WORKS (11.6.69) Bul 7/3-2:89
Class 47c. Int.Cl. F 16d.

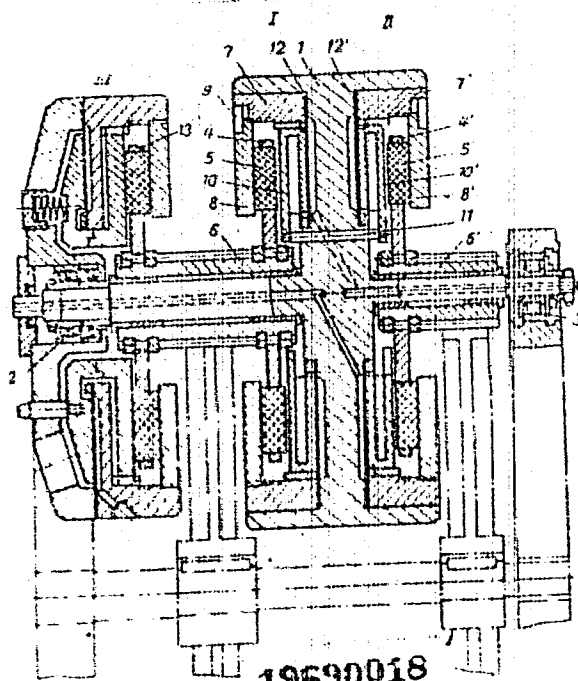
2m

FACILITY: Gor'kovskiy Avtomobil'nyy Zavod

3/3

19690017

AA0030206



19690018

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--INTERACTION OF HIGH VOLTAGE PORCELAIN WITH GLAZE --U-

AUTHOR--(02)--MASLENNIKOVA, G.N., KOCHETKOVA, N.F.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 542-6

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--PORCELAIN, THERMAL EXPANSION, SPECIALIZED COATING, HIGH
VOLTAGE LINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0632

STEP NO--UR/0363/70/006/003/0542/0546

CIRC ACCESSION NO--AP0119544

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119544

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INFLUENCE OF THE INTERACTION BETWEEN GLAZE AND HIGH VOLTAGE PORCELAIN ON THE CHANGE IN THE THERMAL EXPANSION COEFF. OF THE INTERMEDIARY GLAZE LAYER WAS INVESTIGATED. THIS REACTION CAN BE CONSIDERED AS BEING A REACTION OF THE DISSOLN. OF THE SOLID PHASE OF PORCELAIN IN THE LIQ. PHASE OF THE GLAZE. IT IS THUS SHOWN THAT DURING THE FIRING OF PORCELAIN ARTICLES THE PORCELAIN INTERACTS WITH THE GLAZE THEREBY FORMING AN INTERMEDIARY LAYER, BEING A GLAZE WHICH HAS ASSIMILATED UP TO 40-5PERCENT PORCELAIN (13200DEGREES). AS A RESULT OF THIS, THE CHEM. COMPN. OF THE GLAZE COATING CHANGES, AND CONSEQUENTLY ALSO ITS THERMAL EXPANSION COEFF., THEREBY EXERTING AN EFFECT ON THE MECH. STRENGTH VALUE OF THE GLAZED SAMPLES. THE THERMAL EXPANSION COEFF. OF THE INTERMEDIARY LAYER DECREASES AS COMPARED TO THE THERMAL EXPANSION COEFF. OF PORCELAIN, WHICH ENHANCES INCREASED MECH. STRENGTH OF GLAZED PROCELAIN ARTICLES AS COMPARED TO THE NONGLAZED ONES. WHEN SELECTING THE GLAZES FOR INTERACTION WITH HIGH VOLTAGE PORCELAIN ONE MUST TAKE INTO CONSIDERATION THE ROLE OF THE INTERMEDIARY LAYER, THE CHEM. AND THE PHASE COMPN. OF WHICH DIFFER FROM THE CHEM. AND THE PHASE COMPN. OF THE GLAZE COATING. FACILITY: MOSK. INZH.-EKON. INST. IM. ORDZHONIKIDZE, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 542.943:547.257.3

NESMEYANOV, A. N., LEONOVA, Ye. V., KOCHETKOVA, N. S., RUKHLYADA, N. N.,
and BYCHKOV, N. V., Institute of Metal Organic Compounds, Academy of
Sciences USSR

"Oxidation of 1,1'-Diethylcobalticinium Hexafluorophosphate"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 12, Dec 73,
pp 2791-2792

Abstract: In presence of excess $KMnO_4$ in acid medium the hexafluorophosphate
of 1,1'-diethylcobalticinium (I) is converted to the salt of 1,1'-diacetyl-
and 1,1'-dicarboxycobalticinium. Other oxidation agents such as MnO_2 and
 CrO_3 in acidic medium fail to react with (I).

1/1

- 20 -

Organometallic Compounds

UDC 547.13:546.72 + 546.14/15

USSR

NESMEYANOV, A. N., KOCHETKOVA, N. S., MATERIKOVA, R. B., PALITSYN, N. P., KSENZENKO, V. I., and SOBOLEVA, T. S., Institute of Metal Organic Compounds, Academy of Sciences USSR

"Reaction of Ferrocene Derivatives With Bromine and Iodine"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 9, No 2, Feb 73, pp 378-380

Abstract: Reaction of bromine and iodine with ferrocene substituted with electron donating and electron accepting substituents was studied. At -20° in heptane bromine decomposes ethyl- and 1,1'-diethylferrocene; with 1,1',3,3'-tetra-tert-butylferrocene it forms the tribromide of 1,1',3,3'-tetra-tert-butylferrocenium. At 50° in benzene iodine does not decompose ferrocene or its derivatives, forming addition products with various quantities of iodine. In general, presence of electron-donating substituents and reaction with strong oxidizers (Cl_2 , Br_2) favor the decomposition of the ferrocene ring. In case of hindered derivatives or when the halogen is a weak oxidizer (iodine) mainly oxidation products are obtained, with an intact ferrocene ring. Oxidation to ferrocenium evidently preserves the system from further decomposition by the halogen.

1/1

USSR

CHEMUTOVA, M.K., and KOCHENKOVA, N.YE.

UDC: 5-3.70

"Extraction of Trivalent Actinides and Europium With 1-Phenyl-3-Methyl-4-Benzoylpyrazolone-5 Solutions in the Presence of Some Donor-Active Substances"

Moscow, Zhurnal Analiticheskoy Khimii, Vol 25, No 4, Apr 70, pp 710-714

Abstract: Due to synergistic effect, the distribution coefficients for trivalent Am, Cm, Bk, and Eu increase considerably on addition of tributyl phosphate (TBP) or trioctylphosphine oxide (TOPO) to 1-phenyl-3-methyl-4-benzoylpyrazolone-5 (PMBP) solutions in cyclohexane. The extraction of Am, Cm, Bk, and Eu by solutions of PMBP-TBP and PMBP-TOPO mixtures in cyclohexane has been examined in relationship to the concentration of TOPO (for Am, Cm, Eu), of PMBP and HNO₃ (for Cm, Eu). It was determined that all elements may be quantitatively extracted from 0.1 N HNO₃ with a mixture of 0.05 M PMBP-0.25 M TBP, or by a mixture of 0.05 M PMBP-0.0025 M TOPO in cyclohexane. A mixture of

1/2

USSR

CHMUTOVA, M. K., et al, Zhurnal Analiticheskoy Khimii, Vol 25, No 4,
Apr 70, pp 710-714

0.05 M FMBP-0.025 M TOPO extracts quantitatively Cm and Eu from
0.3 and 0.4 N HNO₃ respectively. On the basis of Cm and Eu the
authors propose the structure MeA₃·2TBP for the material extracted
from the FMBP-TBP mixtures. On the basis of literature data as well
as their own, the authors assume formation of two compounds from the
other extraction process: MeA₃·2TOPO and MeA₂(NO₃)·2TOPO.

2/2

USSR

UDC 615.616.24-003.656.6 (5)

BEZRODNYKH, A. A., KASPAROV, A. A., MAZUROV, V. I., ~~KOCHETKOVA, T. A., RAZDVADOVSKIY, YE. F., SIDOROVA, N. V., KULIKOVA, T. P., GALITSINA, I. Z., ZAMARAYEVA, T. V.~~

"Antifibrosis Effect of Polyvinylpyridine-N-Oxide as a Compound to Prevent the Development of Silicosis"

Nauch. tr. Irkutsk. med. in-t (Scientific Works of the Irkutsk Medical Institute), 1972, vyp 110, pp 52-53 (from RZh--Farmakologiya. Khimioterapevticheskiye Sredstva. Toksikologiya, No 3, Mar 73, Abstract No 3.54.874)

Translation: The polymers polyvinyl-pyridine-2- and 4-N-oxides had an effect on the degree of expression of histologic alterations in the early stages of the development of experimental silicosis (10 days) when administered intratracheally and, especially, hypodermically. These polymers normalized the indexes of the oxidation processes in the lung tissue and the myocardium. After one, three and six months of the experiment, the polymers with a molecular weight of 40,000 to 80,000 retarded the development of fibrosis, reduced the amount of neutrally soluble collagen and

1/2

USSR

BEZRODNYKH, A. A., et al., Nauch. tr. Irkutsk. med. in-t, 1972,
vyp 110, pp 52-53

normalized the amino acid composition of the lung tissue, the indexes of the oxidation phosphorylation and the activity of the intracellular enzymes. On intratracheal administration of polymers with a molecular weight of 50,000 to 1,500,000, the development of catarrhal bronchitis and bronchiolitis was noted.

2/2

- 72 -

K
Public Health, Hygiene and Sanitation

USSR

UDC 616.24-004-092.9-02:616-003.669

IL'INA, V. A. and KOCHETKOVA, T. A. Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR

"Experimental Pulmonary Sclerosis After Inhalation of Aerosols of Magnesium-Lithium Alloys"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 2, 1970, pp 17-21

Abstract: Rats inhaling alloys of magnesium and lithium in different proportions over a period of 4-1/2 months developed tracheitis, bronchitis, interstitial pneumonia, diffuse sclerosis, and emphysema. The higher the percentage of lithium in the alloy, the more pronounced the changes. A single intratracheal injection of an aerosol of the magnesium-lithium alloy gave rise to the same shifts in the lungs as those produced by inhalation, but the pathological process was less pronounced and the course slower, because considerable amounts of the dust were eliminated by the bronchi and lymph system.

1/1

Acc. Nr: **AP0036570**

K

Ref. Code: UR 0391

PRIMARY SOURCE: Gigiyena, Truda i Professional'nyye
Zabolevaniya, 1970, Nr 2, pp 17-21

EXPERIMENTAL PNEUMOSCLEROSIS FOLLOWING INHALATION
OF MAGNESIUM-LITHIUM ALLOYS AEROSOLS

Il'ina, V. A.; Kochetkova, T. A.

Summary

Being endowed with well-pronounced alkaline properties magnesium-lithium alloy aerosols produce, when inhaled, irritating action on the mucosa of the upper respiratory tract and on the pulmonary tissue and cause a number of changes in respiratory organs. These include: moderate catarrhal tracheitis, bronchitis, interstitial pneumonia, diffuse sclerosis and emphysema of the lungs. The extent of the pathological process becomes greater as the lithium proportion in the alloy increases.)

D.A.

REEL/FRAME
19721422

6

UDC 615.332.099.015.2: (615.31:547.745

USSR

KOCHETKOVA, V. A., Moscow P. A. Ketsen Oncological Institute

"Effect of Polyvinylpyrrolidone on Toxic Properties of Streptomycin and Monomycin"

Moscow, Antibiotiki, Vol 15, No 1, Jan 70, pp 71-76

Abstract: The toxicity, cumulative effects, and the lethal doses of streptomycin and monomycin were determined experimentally. Then, polyvinylpyrrolidone, in the wide range of various fractions and molecular weights was tested for the detoxifying properties against streptomycin and polymycin. It was found that all fractions of the polymer with atomic weights 12,500, 30,000, and 48,000, reduced the toxicity of the antibiotics. Further experiments proved that the polymers with lower molecular weight were more powerful detoxicants. In animals given lethal doses of antibiotics, those were completely saved to whom the polymer was administered within 1-2 minutes; if given 30 minutes later only 50-60% were saved; if later, all animals died. The above is true for streptomycin. Monomycin was found to be more toxic; 70-80% animals were saved when treated with the polymer within 1-2 minutes; if later, all animals died. However, if given the polymer simultaneously with monomycin, 100% of the animals were saved.

1/1

- 84 -

Acc. Nr.: **AP0029763**

Ref. Code: UR 0297

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 1, pp71-76

EFFECT OF POLYVINYLPIRROLIDONE ON TOXIC PROPERTIES
OF STREPTOMYCIN AND MONOMYCIN

V. A. Kachetkova

Moscow P. A. Hertsen Oncological Institute

The effect of various fractions of polyvinylpyrrolidone with a molecular weight of 12600, 30000 and 48000 on the toxic properties of streptomycin and monomycin, as well as the rate of the toxicity increase on their administration at various periods with polyvinylpyrrolidone (mol. wt. 48000) and physiological solution were studied experimentally. It was found that all the polymer fractions decreased the antibiotic toxicity. The lower was the molecular weight of the polymer, the higher were its desintoxicating properties and vice versa. Preparations of polyvinylpyrrolidone with a low molecular weight may be used as antidotes in case of overdosing of the above antibiotics. Administration of streptomycin once a day and monomycin once every 2 days with polyvinylpyrrolidone (mol. wt. 48000) decreased the toxic properties of the antibiotics, while their administration in accordance with the instruction increased the toxicity due to accumulation of the preparation.

//

REEL/FRAME

19681438

6 Jm

Acc. Nr:

AP0036560

Abstracting Service:

CHEMICAL ABST.

4170

Ref. Code:

UR 0366

K

* 78305j Allylhydrazones and their isomeric conversions into azines. Ioffe, B. V.; Kochetov, A. P. (Leningrad. Gos. Univ., Leningrad, USSR). *Zh. Org. Khim.* 1970, 6(1), 38-9 (Russ).
 The reaction of $H_2C:CHCH_2NHNH_2$ with AcH , $EtCHO$, or Me_2CO at $0-10^\circ$ gave 62-70% $H_2C:CHCH_2NHN:CRR^1$ (I) (R and R^1 given): H, Me; H, Et; and Me, Me. Refluxing I in $HOCH_2CH_2OH$ contg. $NaOCH_2CH_2OH$ instead of the expected $H_2C:CHCH_2N:NCHRR^1$ (Ioffe B. V., *et al.*, 1965, 1966, 1969) gave 33-70% $EtCH:NN:CHRR^2$ (II). During distn. the unsym. II equilibrated to mixts. of the sym. II, e.g., $EtCH:N:N:CHMe_2$ gave $EtCH:NN:CHEt$ and $Me_2CH:NN:CHMe_2$.
 CPJR

1/1

ALS

REEL/FRAME
19721412

7

USSR

UDC: 620.171.32

TRAPEZNIKOV, D. A., ANUFRIYEV, Yu. P., KOCHETOV, D. V., LAUKHINA, N. S.,
URSIN, V. A., Moscow

"Evaluating the Thermal Stability of Graphites Over a Broad Temperature
Range"

Kiev, Problemy Prochnosti, No 9, Sep 72, pp 18-21

Abstract: Experimental studies are conducted as a basis for analyzing the heat-stressed and limiting states of graphite construction elements and plotting their thermal resistance as a function of temperature. Five grades of graphite were tested: VPF, VPP-1000, MPG-8, ARV and FROG-2400. Annular specimens were subjected to a load consisting of a steady-state radial heat flux. The temperature was recorded at four points along the radius of the specimen at the time of fracture, and diametric displacements were determined. These figures were then used to calculate the temperature distribution through a cross section of the specimen, as well as tangential strain on the outer surface. The thermal stability of the graphite materials was calculated by determining the temperature differential as a function of surface temperature at the beginning of fracture. An expression is given which approximates the

1/2

- 35 -

USSR

TRAPEZNIKOV, D. A. et al., Problemy Prochnosti, No 9, Sep 72, pp 18-21

deformed state of the rings within 10%. It is found that the temperature differential and heat flux at fracture are complicated functions of temperature, and that these functions are determined by temperature changes in the principal characteristics of the graphite materials -- maximum tensile deformation, coefficient of thermal expansion, modulus of elasticity and thermal conductivity.

2/2

UDC 620.171.32

USSR

URSIN, V. A., TRAPEZNIKOV, D. A., KOCHETOV, D. V., and ANUFRIYEV, Yu. P.,
Moscow

"Concentration of Thermal and Mechanical Stresses in Graphites"

Kiev, Problemy Prochnostic, No 8, Aug 71, pp 64-66

Abstract: Concentrations of thermal and mechanical stresses near peripheral incisions were experimentally investigated on ring-shaped specimens (outside diameter 60 mm, internal diameter 22 mm, height 15 mm) of ARV, ARVU, VPR and PROG-2400 graphites. The inner ring surface was heated uniformly by radiation and the outer surface was cooled by the contact method. The stress concentration coefficients and sensitivity indices were analyzed by reference to tabulated data and diagrams. It is demonstrated that thermal and mechanical stress concentrations are of one and the same character. The sensitivity of the investigated graphites to incisions was found to be proportional to the radius of curvature in the top of the incision and inversely proportional to the graphite graining. Two illustrations, four formulas, four tables, four bibliographic references.

1/1

Graphite

USSR

UDC 620.171.32

TRAPEZNIKOV, D. A., URSIN, V. A., KOCHETOV, D. V., and ANUFRIYEV, Yu. P.,
Moscow

"Investigation of Destruction Conditions of Graphites in Heat Treating
Furnaces"

Kiev, Problemy Prochnosti, No 12, Dec 72, pp 68-71

Abstract: The destruction conditions by thermal stresses of two practically isotropic ring-shaped specimens of graphites ARV_{NTU} ($\rho = 1.64 \text{ g/cm}^3$) and ARV_{STU} ($\rho = 1.51 \text{ g/cm}^3$) of small-grained structure and uniformly distributed porosity were experimentally investigated on a described device. The types of observed destructions and their character are discussed by reference to pictures, schemata, and diagrams of the temperature gradient, relative deformation, and tangential and axial surface stresses. The possibility of using numerical calculation methods of the stress-deformed condition of ring-shaped graphite specimens by thermal loads is demonstrated. Seven illustrations, one table, three bibliographic references.

1/1

1/2 023 UNCLASSIFIED PROCESSING DATE--110EC70
TITLE--FEATURES OF ACRYLONITRILE POLYMERIZATION INITIATED WITH
TRIETHYLPHOSPHINE IN TETRAHYDROFURAN AND DIMETHYLFORMAMIDE -U-
AUTHOR--(04)-KOCHETOV, E.V., BERLIN, A.A., MASALSKAYA, E.M., YENIKOLOPYAN,
N.S. K
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(5), 1118-26
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ACRYLONITRILE, POLYMERIZATION, AMIDE, CHEMICAL REACTION
KINETICS, PHOSPHATE ESTER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/1375 STEP NO--UR/0459/70/012/005/1118/1126
CIRC ACCESSION NO--AP0135049

2/2 023

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0135049

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POLYMN. KINETICS OF H SUB2
 C:CHCN. (I) IN HCONME SUB2 (II) OR TETRAHYDROFURAN (III) SOLNS. CONTG. ET
 SUB3 P WERE STUDIED. THE POLYMN. FOLLOWED 1ST ORDER KINETICS IN RESPECT
 TO ET SUB3 P AND 2ND ORDER IN RESPECT TO I IN II SOLN. THE MOL. WT. OF
 THE POLYMER DECREASED WITH CONVERSION, WAS INDEPENDENT OF ET SUB3 P
 CONCN., AND INCREASED LINEARLY WITH INCREASING I CONCN. IN II OR WITH
 THE SQUARE OF I CONCN. IN III SOLN. THE INITIATION RATE CONST.
 INCREASED WITH INCREASING I CONCN. IN III. FACILITY: INST.
 KHIM. FIZ., MOSCOW, USSR.

1/2 031 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--NATURE AND FUNCTION OF AMINO ACID RESIDUES OF TRANSKETOLASE
ESSENTIAL FOR THE MANIFESTATION OF ITS ACTIVITY -U-
AUTHOR--(02)-KOCHEV, G.A., KOBLYANSKAYA, K.R.
COUNTRY OF INFO--USSR
SOURCE--BIOKHIMIYA 1970, 35(1), 3-12
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ENZYME ACTIVITY, BIOLOGIC STAIN, INHIBITION, PHOTOCHEMISTRY,
VISIBLE LIGHT, SPECTROPHOTOMETRY, PHOTOOXIDATION, COENZYME, AMINO ACID
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/0641 STEP NO--UR/0218/70/035/001/0003/0012
CIRC ACCESSION NO--AP0117867
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--16OCT70

2/2 031

CIRC ACCESSION NO--AP0117867

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. VISIBLE LIGHT IRRADN. OF
TRANSKETOLASE (EC 2.2.1.1) IN THE PRESENCE OF METHYLENE BLUE DESTROYED
ENZYME ACTIVITY. PHOTOINACTIVATION EVIDENTLY DISRUPTED 1 OR SEVERAL
INDIVIDUAL AMINO ACID RESIDUES. RAPID LOSS OF ACTIVITY UNDER MILD
CONDITIONS OF PHOTOIRRADN., SPECTROPHOTOMETRIC STUDIES OF PHOTOOXIDIZED
ENZYMES, AND DEPENDENCE OF THE RATE OF PHOTOINACTIVATION ON PH INDICATED
THAT THESE WERE HISTIDINE RESIDUES. PHOTOINACTIVATION OCCURRED ONLY IN
MOLS. LACKING THE COENZYME THIAMINE PYROPHOSPHATE; HOLOENZYME ACTIVITY
DID NOT CHANGE DURING PHOTOIRRADN. THE AMINO ACID RESIDUES DESTROYED
DURING PHOTOOXIDN. SEEMED TO BE IN THE ACTIVE CENTER AND EVIDENTLY BOUND
THE APOENZYME TO THE COENZYME THROUGH THE PHOSPHATE GROUP OF THE LATTER.
TRANSKETOLASE MAY BE SUPPRESSED BY INORG. PHOSPHATE COMPETITION WITH
COENZYME FOR FUNCTIONAL GROUPS (HISTIDIEN RESIDUES) AT THE ACTIVE
CENTER.

MOSCOW, USSR.

FACILITY: LAB. BIOORG. CHEM., MOSCOW STATE UNIV.,

UNCLASSIFIED

K

USSR

UDC 575.150

SEVERIN, S. Ye., FILIPPOV, P. P., and KOCHETOV, G. A., Interfaculty Laboratory of Bio-organic Chemistry, Moscow State University

"Metalloenzymes"

Moscow, Uspekhi Sovremennoy Biologii, Vol 69, No 2, Mar/Apr 70, pp 241-260

Abstract: This is a review article with 112 references, covering the function of metals in enzyme catalysis. The following topics: classification of metalloenzymes, the effect of metals on the relationship between enzymes and substrates, participation of metals in the complex formation of enzyme-coenzyme, the effect of metals on the conformation of enzymes, the effect of metals on the quaternary structure of enzymes, and the metal content in enzymes, are discussed. The importance of studying the properties and the mechanism of action of metalloenzymes is stressed.

1/1

1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--FUNCTION OF CALCIUM. COFACTOR OF TRANSKETOLASE FROM BAKERS' YEAST
-U-
AUTHOR--(02)--KOCHETOV, G.A., FILIPPOV, P.P. *K*
COUNTRY OF INFO--USSR
SOURCE--FEBS (FED. EUR. BIOCHEM. SOC.) LETT. 1970, 6(1), 49-51
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--YEAST, THIAMINE, ENZYME ACTIVITY, CALCIUM COMPOUND, INHIBITION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1989/1361 STEP NO--NE/0000/70/006/001/0049/0051
CIRC ACCESSION NO--AP0107834
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0107834

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TRANSKETOLASE (I) HAS LITTLE ACTIVITY IN THE ABSENCE OF BOTH METAL AND THIAMINE PYROPHOSPHATE (TPP). ABOUT 65PERCENT OF THE ACTIVITY IS RESTORED BY ADDING TPP ALONE, AT 10 PRIME NEGATIVE4 M, CA ACTS AS A COMPETITIVE INHIBITOR IN RELATION TO TPP. HIGHER CA CONCNS. DECREASE THE MICHAELIS CONST. AND INCREASE THE MAX. REACTION RATE. THE MICHAELIS CONST. IS INCREASED FROM 3.3 TIMES 10 PRIME NEGATIVE5 M IN THE ABSENCE OF METAL TO 2.0 TIMES 10 PRIME NEGATIVE5 M IN THE PRESENCE OF 0.7 TIMES 10 PRIME NEGATIVE4 M MG. FURTHER INCREASES IN THE MG DID NOT AFFECT THE MICHAELIS CONST. BUT INCREASED THE MAX. REACTION RATE. THE RESULTS ARE EXPLAINED BY ASSUMING 2 CATION BINDING SITES ON I. THE METAL INTERACTION WITH THE 1 SITE LEADS TO A DECREASE IN THE MICHAELIS CONST. FOR TPP, AND INTERACTION WITH THE 2ND SITE RESULTS IN AN INCREASE IN THE MAX. REACTION RATE.
FACILITY: LAB. BIOORG. CHEM. MOSCOW STATE UNIV., MOSCOW, USSR.

UNCLASSIFIED

1/2 010

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--EFFECT OF DIVALENT METALS ON THE POSITION OF THE PH OPTIMUM OF THE
TRANSKETOLASE REACTION -U-

AUTHOR--(02)-KOCHETOV, G.A., FILIPPOV, P.P.

COUNTRY OF INFO--USSR

SOURCE--DGKL. AKAD. NAUK SSSR 1970, 191(11), 234-6

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ENZYME ACTIVITY, KETONE, TRACE ELEMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1476

STEP NO--UR/0020/70/191/091/0234/0236

CIRC ACCESSION NO--A10130405

2/2 010 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--A0130405
ABSTRACT/EXTRACT--(U) CP-0- ABSTRACT. THE ACTIVE TRANSKETOLASE (CF. KOCHETOV, ET AL. 1969) IN A SYSTEM WITH SEDOHEPULDSE 7, PHOSPHATE BEING FORMED FROM MIXED PENTOSE PHOSPHATES WAS SUBJECTED TO THE ACTION OF DIVALENT METAL IONS SELECTED FROM MG, MN, CA, ZN, AND NI. IT WAS SHOWN THAT IN EACH CASE THERE WAS MAX. OF ACTIVITY OF THE ENZYME AT A SPECIFIC PH AND THIS MAX. SHIFTED SOMEWHAT WITH CONC. OF THE CATION. INCREASING CONCNS. OF CA, ZN, AND NI DISPLACED THE OPTIMUM PH FROM ACID TO BASIC SIDE. AT OPTIMUM CONC. OF THE DIVALENT IONS THE OPTIMUM PH OF THE ENZYME IS IN THE PH 7.6-8 REGION ALMOST INVARIABLY. THUS, THE DIFFERENCE IN THE ACTIVATING ABILITY OF THE METAL IONS CANNOT BE EXPLAINED BY VARIOUS VALUES OF THE OPTIMUM PH. MECHANISMS RESPONSIBLE FOR THE RESULTS ARE DISCUSSED AT LENGTH. FACILITY: MOSK. GOS. UNIV. IN. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 669.295:620.1

KRASNIKOV, N. Ye., SKRYABIN, N. P., KOCHETOV, I. M.

"Deformation Resistance of Titanium Alloys at High Temperatures"

Moscow, Tsvetnyye Metally, No 12, Dec 73, pp 51-53.

Abstract: A formula is recommended for practical calculations of the strength of titanium alloys in the 700-900° C interval, with degrees of deformation up to 40% and deformation rates up to 150 sec⁻¹. The formula recommended is:

$$\frac{\delta}{\delta_0} = \left(\frac{t}{t_0}\right)^\alpha \left(\frac{U}{U_0}\right)^\beta \left(\frac{\epsilon}{\epsilon_0}\right)^\gamma$$

where α , β and γ are empirical coefficients (unknown parameters).

1/1

1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--REACTION OF 1,6,ANHYDROHEXOSES WITH HYPOPHOSPHOROUS ACID -U-

AUTHOR-(03)-NIFANTYEV, E.YE., GUDKOVA, I.P., KOCHETKOV, N.K.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 460-3

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--HEXOSE, HETEROCYCLIC OXYGEN COMPOUND, GLUCOSE, ORGANIC
PHOSPHORUS COMPOUND, CHROMATOGRAPHY, CHEMICAL SEPARATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1438

STEP NO--UR/0079/70/040/002/0460/0463

CIRC ACCESSION NO--AP0116883

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0116883

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEATING 10 G H SUB3 PO SUB2 WITH 10 G LEVOGLUCOSAN 10 HR AT 80-5DEGREES GAVE A VERY HYGRUSCOPIC SOLID CONTG. 7.3PERCENT P, WHICH WAS SEPD. INTO (6,DEOXY,D,GLUCOS,6,YL)PHOSPHONOUS ACID, (I), ISOLATED AS NH SUB4 SALT, M. 180DEGREES. THE CRUDE PRODUCT, REPPTD. SEVERAL TIMES FROM ME SUB2 NCHO WITH ET SUB2 O GAVE A PRODUCT CONTG. 6.8-7.2PERCENT P, WHICH HEATED WITH N HCL 1.5 HR GAVE CHROMATOGRAPHIC SPOTS OF D,GLUCOSE AND I. HEATING LEVOGLUCOSAN WITH H SUB3 PO SUB2 AND NAPH SUB2 O SUB2 40 HR AT 85DEGREES GAVE NA SALT WITH PROBABLE STRUCTURE (II) PURIFIED BY PPTN. FROM MEOH WITH ET SUB2 O, IN AQ. SOLN. THIS UNDERGOES MUTAROTATION. SIMILAR REACTION WITH 1,6,ANHYDROGALACTOSE IN 15 HR GAVE THE NA SALT OF (6,DEOXY,D,GALACTOS,6,YL)PHOSPHONOUS ACID, PURIFIED BEST ON A CELLULOSE COLUMN. 1,2:3,4,DI,O,ISOPROPYLIDENE,ALPHA,L,ARABINO,HEX,5,ENOPYRANOSE AND NAH SUB2 PO SUB2 IN MEOH WITH A TRACE OF TERT,BUOOH IN 15 HR AT 145DEGREES IN AN AUTOCLAVE, THEN HEATED WITH AQ. HCL 1 HR, GAVE THE NA SALT OF (6,DEOXY,D,GALACTOS,6,YL)PHOSPHONOUS ACID. I CHLORINATED IN AQ. SOLN. IN THE COLD AND KEPT 1.5 HR PRIOR TO NEUTRALIZATION TO PH 7.5, GAVE 60PERCENT NH SUB4 SALT OF (6,DEOXY,D,GLUCOS,6,YL)PHOSPHONIC ACID, AMORPHOUS SOLID, WHICH WAS OXIDIZED WITH 4 MOLES PERIODATE (KIO SUB4), WHILE HEATING THE ACID WITH MEOH AT 140DEGREES AND GAVE 6,DEOXY,D,GLUCOSE AND ME PHOSPHITES. FACILITY: MOSK. GOS. UNIV. IN. LOMONOSOVA, MUSCOW, USSR.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

172 010

TITLE--SYNTHESIS OF METHYL
5,6,DIIDEOXY,5, IODO,2,3,0, ISOPROPYLIDENE, BETA, D, ALLOFURANOSIDE -U-

AUTHOR--(03)-ADANYANTS, K.S., USOV, A.I., KOCHETKOV, N.K.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 696-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, IODINATED ORGANIC COMPOUND, FURAN,
HETEROCYCLIC OXYGEN COMPOUND, NMR SPECTRUM, MOLECULAR STRUCTURE,
GLUCOSIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1902

STEP NO--UR/0062/70/000/003/0696/0697

CIRC ACCESSION NO--AP0123686

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123686

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REFLUXING 7 G I WITH 14 G BZONA IN

REFLUXING ME SUB2 NCHO 20 HR GAVE 1.78 G ME

6,DEOXY,2,3,0,ISOPROPYLIDENE,ALPHA,L,TALOFURANSIDE BENZDATE, M.

95DEGREES, (ALPHA) PRIME20 SUBD MINUS 36DEGREES. THIS WITH MEONA-MEON

GAVE 50PERCENT FREE FURANSIDE, (ALPHA) SUBD MINUS 51DEGREES, WHICH WITH

(PHO) SUB3 PMEL IN C SUB6 H SUB6 HEATED 8 HR AT 70DEGREES GAVE

54.5PERCENT ME

5,6,DIDEOXY,5,10DO,2,3,0,ISOPROPYLIDENE,BETA,D,ALLOFURANSIDE, M.

57-8DEGREES, (ALPHA) PRIME20 SUBD MINUS 70.8DEGREES. NMR SPECTRAL DATA

ARE GIVEN.

FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW,

USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--3006170
 TITLE--ANALGS OF CARBOHYCRATE METABOLISM COENZYMES. 15 SYNTHESIS OF
 URIDINE 5 PRIME, -4, DEOXY, D, XYLO, HEXOSYL PYROPHOSPHATE -U-
 AUTHOR--(04)--KOCHEKOV, N.K., BUDOVSKIY, E.I., SHIBAYEV, V.N., KUSOV,
 YU.YU.
 CCOUNTRY OF INFO--USSR

K

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 404-11

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--COENZYME, CARBOHYDRATE METABOLISM, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--3002/0430

STEP NO--UR/0052/70/000/002/0404/0411

CIRC ACCESSION NO--AP0128001

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0128001

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ME ALPHA,D,GALACTOSIDE IN PYRIDINE TREATED WITH BZCL AT MINUS 40DEGREES, THEN WARMED TO ROOM TEMP. GAVE 68PERCENT 2,3,6-TRIBENZOATE, M. 137-8DEGREES WHICH WITH MESO SUB2 CL IN PYRIDINE GAVE ME 2,3,6,TRI,O,BENZOYL,4, O,(METHYLSULFONYL),ALPHA,D,GALACTOPYRANOSIDE, M. 143.5-45DEGREES, WHICH WITH KSCN IN DMF 2 DAYS AT 140DEGREES GAVE 65.6PERCENT ME 2,3,6,TRI,O, BENZOYL,4,DEOXY,4,THIOCYANO,ALPHA,D,GLUCOPYRANOSIDE, M. 192-2.5DEGREES, WHICH INHOT ETCH WITH RANEY N133 HR THEN TREATED WITH ME, ONA,MEOH AND KEPT 15 HR GAVE 77PERCENT ME 4,DEOXY,ALPHA,D,XYLO, HEXOPYRANOSIDE, M. 88-9.5DEGREES, WHICH HEATED INTH DOWEX-50 RESIN IN H FORM IN H SUB2 O 8.5 HR GAVE 61PERCENT 4,DEOXY,D,XYLO,HEXOSE, M. 125- 7DEGREES. TREATING 4,DEOXY,D,XYLO,HEXOPYRANOSE IN PYRIDINE WITH AC SUB2 O IN CHCL SUB3 AT 0-4DEGREES 43 HR GAVE 1,2,3,6-TETRA,O,ACETHL,4,DEOXY, D,XYLO,HEXOPYRANOSE, M. 105-7DEGREES, WHICH IN ACOH AT 0DEGREES WITH 40PERCENT HBR IN ACOH GAVE IN 3 HR AT ROOM TEMP. 96PERCENT 2,3,6,TRI,O,ACETYL, 3,DEOXY,ALPHA,D,XYLO,HEXOPYRANOSYL BROMIDE, A SYRUP, WHICH WITH (PHO) SUB2 PO SUB2 AG IN C SUB6 H SUB6 REFLUXED 2 DAYS IN THE DARK GAVE 42PERCENT SYRUPY DIPHENYL PHOSPHATE, WHICH WAS DIRECTLY HYDROGENATED OVER PT IN MEOH TO 4,DEOXY,ALPHA,D,XYLO,HEXOPYRANOSYL PHOSPHATE, ISOLATED AS THE NH SUB4 SALT AND THE ET SUB3 N SALT. THE LATTEK WITH URIDINE 5 PRIME,PHOSPHOMORPHOLIDE ET SUB3 N SALT IN ME SUB2 SO,C SUB6 H SUB6 W HR AT 60DEGREES GAVE PURE URIDINE 5 PRIME,(4,DEOXY,D,XYLO,HEXOPYRANOSYLPYROPHOSPHATE) (I), A NEW ANALOG OF "UDPG." G. M. KOSULAPOFF. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--MONOSACCHARIDES. 22. HYDROGENOLYSIS, ACETOLYSIS, AND HYDROLYSIS OF
TRANS AZIRIDINECARBOXYLIC ACIDS IN A SERIES OF SUGARS --U--
AUTHOR--(03)--DMITRIYEV, B.A., BAYRAMOVA, N.E., KOCHETKOV, N.K.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 2970, (3), 650-3

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HYDROGENATION, HYDROLYSIS, CARBOXYLIC ACID, SACCHARIDE, AMIDE,
GALACTOSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1975

STEP NO--UR/0062/70/000/003/0650/0653

CIRC ACCESSION NO--AP0123756

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE—30OCT70

CIRC ACCESSION NO—AP0123756

ABSTRACT/EXTRACT—(U) GP-0- ABSTRACT. HYDROGENATION OF
 TRANS,2,3,EPIIMINO,2,3,DIDEOXY,4,5:6,7,DI,O,
 ISOPROPYLIDENE,L,GLYCER,L,GALACTO,HEPTONAMIDE (I) OVER RANEY NI IN MEOH
 AT ATM. PRESSURE 5 HR GAVE A SYRUP THAT WITH AC SUB2 OMEOH OVERNIGHT
 GAVE 2,ACETAMIDO,2,3,DIDEOXY,L,GLUCO,HEPTON,AMIDE,M. 195-7DEGREES,
 (ALPHA)PRIME2O SUBD MINUS 3.78DEGREES, WHICH IN 4 HR AT 100DEGREES WITH
 4NHCL GAVE 2,DEOXY,L,ARABINO,HEXOSE. I HEATED WITH AQ. HCLD SUB4 5 HR
 AT 80DEGREES AND PURIFIED ON IRA400 RESIN IN ACETATE FORM, THEN TREATED
 WITH AC SUB2 O IN MECH OVERNIGHT GAVE
 2,ACETAMIDO,3,6,ANHYDRO,2,DEOXY,L,GLYCERO,L,GULO,HEPTONAMIDE, M.
 200-2DEGREES, (ALPHA) PRIME2O SUBD MINUS 48.4DEGREES, WHICH WITH AQ.
 NAOCL AT 0DEGREES, THEN 1 DAY AT ROOM TEMP., GAVE A SYRUP THAT WITH AC
 SUB2 O,PYRIDINE GAVE L,ARABINOSE PENTAACETATE, M. 75DEGREES. I HEATED
 IN ACOH 3 HR GAVE 77PERCENT 2,ACETAMIDE,2,DEOXY,4,5:6,7,DI,O,
 ISOPROPYLIDENE,L,GLYCERO,L, GALACTO,HEPTONAMIDE, M. 225-7DEGREES, WHICH
 IN 50PERCENT ACOH 1 DAY GAVE
 2,ACETAMIDO,2,DEOXY,4,5,0,ISOPROPYLIDENE,L,GLYCERO,L,GALACTO,HEPTONAMIDE
 , M.2 22.5-5DEGREES, (ALPHA) PRIME2O SUBD 2.7DEGREES. FACILITY:
 INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

172 017 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--FORMATION OF DEDXY SUGARS DURING THE IRRADIATION OF AQUEOUS
SOLUTIONS OF CARBOHYDRATES -U-
AUTHOR-(04)-KOCHETKOV, N.K., KUDRYASHOV, L.I., YAROVAYA, S.M.,
VOZNESENSKAYA, S.V. *K*
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (1), 201-2
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--SACCHARIDE, AQUEOUS SOLUTION, RADIOLYSIS, ATMOSPHERE
COMPOSITION, OXYGEN, NITROGEN, NITROGEN OXIDE, CHEMICAL REACTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0434 STEP NO--UR/0062770/000/001/0201/0202
CIRC ACCESSION NO--AP0117670

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0117670

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE YIELDS OF ALTERED ALPHA METHYL D,GALACTOSIDE, GALACTOSE, INOSITOL, LACTOSE, STARCH AND BLOOD GROUP SUBSTANCE WERE TABULATED FOR IRRADN. OF THESE IN SOLN. IN AN ATM, CONTG. O SUB2, N SUB2, OR N SUB2 O AT PH 7 AT DOSES OF (1-9) TIMES 10 PRIME 19 EV-ML IN TERMS OF RESULTING DEOXY SUGARS, AS WELL AS DEOXYKETO SUGARS. THE RESULTS INDICATED THAT FORMATION OF DEOXY DERIVS. INVOLVES REACTION OF HYDRATED ELECTRONS AND O SUB2 PRIME NEGATIVE IONS, WHILE DEOXYKETO SUGARS ARE FORMED BY THE ACTION OF HO. RADICAL. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--STRUCTURE OF THE CARBOHYDRATE CHAINS OF THE BLOOD GROUP SUBSTANCE
(A PLUS H) -U-
AUTHOR--(05)-KOCHEIKOV, N.K., DEREVITSKAYA, V.A., LIKHOSHERSTOV, L.M.,
MARTYNOVA, M.D., SENCHENKOVA, S.N.
COUNTRY OF INFO--USSR
SOURCE--CARBOHYD. RES. 1970, 12(3), 437-47 *K*
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CARBOHYDRATE, BLOOD TYPE, PEPTIDE, ENZYME, CLOSTRIDIUM
PERFRINGENS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/0428 STEP NO--NE/0000/70/012/003/0437/0447
CIRC ACCESSION NO--AP0117664
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0117664

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE OF THE CARBOHYDRATE CHAINS OF BLOOD GROUP SUBSTANCE (A PLUS H) (BGS) IN THE REGION ADJACENT TO THE PEPTIDE BACKBONE WAS INVESTIGATED. TWO APPROACHES WERE USED: (1) A STUDY OF THE DEGRADATION OF BGS BY A COMBINATION OF CHEM. AND ENZYMIC (PREPN. FROM CLOSTRIDIUM PERFRINGENS) METHODS, AND (2) A STUDY OF THE ALK. DEGRADATION OF BGS BY MEASUREMENT OF THE ACCUMULATED PRODUCTS OF DEGRADATION OF N ACETYLHEXOSAMINES (3, ACETAMIDO, 5, DIHYDROXYETHYLFURAN) AND D GALACTOSE (METASACCHARINIC ACID AND 5, HYDROXYMETHYL, 2, FURAL DEHYDE). THE CARBOHYDRATE PEPTIDE LINKAGE UNIT CONTAINS 2, ACETAMIDO, 2, DEOXY, D, GALACTOSE RESIDUES. DIRECTLY ADJACENT TO THIS REGION IS A CHAIN OF SEVERAL N ACETYLHEXOSAMINE RESIDUES BOUND BY (1 YIELDS 3) LINKAGES AND PARTIALLY BRANCHED AT C 6. FACILITY: INST. ORG. CHEM., MOSCOW, USSR.

UNCLASSIFIED

172 015 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--MECHANISM OF THE REACTION OF HYDROXYLAMINE WITH THE URACIL RING -U-
AUTHOR--(03)-BUDOVSKIY, E.I., DOMKIN, V.D., KOCHETKOV, N.K.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(11), 99-101
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ABSORPTION SPECTRUM, HYDROXYLAMINE, URACIL, CHEMICAL REACTION
MECHANISM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0021 STEP NO--UR/0020/70/190/001/0099/0101
CIRC ACCESSION NO--AT0125861
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

2/2 016
CIRC ACCESSION NO--AT0125861

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ABSORPTION SPECTRUM OF THE SYSTEM OF URIDINE 5 PRIME PHOSPHATE IN AQ. HONH SUB2 WAS FOLLOWED IN TIME AND THE 1ST STEP OF THE REACTION IS THE ADDN. OF HONH SUB2 TO C-5-C-6 DOUBLE BOND, AFTER WHICH THE ADDUCT UNDERGOES TRANSFORMATIONS SUGGESTED BY KOCHETKOV ET AL. (1967).
ZELINSKOGO, MOSCOW, USSR. FACILITY: INST. ORG. KHIM. IM.

UNCLASSIFIED

USSR

K UDC: 547.118

NIFANT'YEV, E. YE., GUDKOVA, I. P., and KOCHETKOV, N. K., Moscow State University imeni M. V. Lomonosov, Moscow, Ministry of Higher and Secondary Specialized Education RSFSR, and Institute of Organic Chemistry imeni N. D. Zelinskiy, Moscow, Academy of Sciences USSR

"Study of Reaction of 1,6-Anhydrohexoses With Hypophosphorous Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 2, Feb 70, pp 460-463

Abstract: In the search for methods for the synthesis of phosphorus-containing sugars, the authors attempted to use the reaction of 1,6-anhydrohexoses with hypophosphorous acid by analogy with the reaction of hypophosphorous acid with acetals. Experiments showed that heating of levoglucosan with hypophosphorous acid or with a mixture of the acid with its sodium salt at 80-85° gives 6-desoxy-6-glycophosphonous acids.

1/1

- 66 -

1/2 040

UNCLASSIFIED

PROCESSING DATE--09OCT70

TITLE--FORMATION AND TRANSFORMATION OF RADICALS IN MYOINOSITOL UNDER THE INFLUENCE OF GAMMA RADIATION -U-

AUTHOR--(05)-N.YKILIN, I.V., SHARPATYI, V.A., KUDRYASHOV, L.I., KOCHETKOV, N.K., EMANUEL, N.M.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(3), 635-8

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--FREE RADICAL, CYCLOHEXANE, HYDROXYL RADICAL, EPR SPECTRUM, GAMMA RADIATION, RADIATION EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PRUXY REEL/FRAE--1992/2024

STEP NO--UR/0020/70/190/003/0635/0659

CIRC ACCESSION NO--A10112979

UNCLASSIFIED

2/2 040

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AT0112979

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RADICALS FORMED BY EXPOSURE OF MYO INOSITOL TO GAMMA RADIATION WERE CHARACTERIZED BY THEIR EPR SPECTRA AND THE SPECTRAL DATA WERE REPORTED IN DETAIL. THE RADICALS WERE PRODUCED AT 77DEGREESK IN DRY AND HYDRATED MODES OF INOSITOL. THE EXISTENCE OF THE STABILIZED ELECTRON WAS EVIDENT FROM DEVELOPMENT OF COLOR IN THE SPECIMENS CONTG. H SUB2 O AND FROM THE FORM OF THE EPR SPECTRA. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70
 TITLE--PROCESSING AND USE OF TITANIUM BLAST FURNACE SLAGS -U--
 AUTHOR--(04)-DOVGOPOL, V.I., KOCHETOV, N.N., DRININSKIY, N.V., SHKOLNIK,
 YA.SH.
 COUNTRY OF INFO--USSR
 SOURCE--METALLURG (MOSCOW) 1970, 15(3), 39-40
 DATE PUBLISHED-----70
 SUBJECT AREAS--MATERIALS
 TOPIC TAGS--BLAST FURNACE, SLAG, TITANIUM, METALLURGIC RESEARCH FACILITY,
 CEMENT
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--3005/0915 STEP NO--UR/0130/70/015/003/0039/0040
 CIRC ACCESSION NO--AP0133004
 UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133004

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE USUAL BLAST FURNACE SLAGS ARE MAINLY UTILIZED IN THE PRODUCTION OF PORTLAND CEMENT BUT THOSE CONTG. HIGHER TIO SUB2 CONCNS. (5-13PERCENT) SHOW LESS HYDRAULIC ACTIVITY TO THEIR LOW SOLY. IT IS ASSUMED THAT THE QUALITY OF CEMENT IS NOT POOR IF SLAG CONTAINS SMALLER THAN OR EQUAL TO 4PERCENT TIO SUB2, SP. SURFACE OF CEMENT IS GREATER THAN 4000 CM PRIME2 -G, AND THE CONTENT OF TI SLAG IN IT IS SMALLER THAN 50PERCENT. THE SWELLING TENDENCY OF TI SLAGS IS GOOD AND THEY CAN BE USED IN THE PRODUCTION OF FOAMED SLAG. MOREOVER, PAVEMENT BLOCKS, CRUSHED SLAG, AND SLAG WOOL ARE PRODUCED. PRODUCTION OF FOAMED SLAG IS THE MOST ECONOMIC AND SUITABLE MEANS OF UTILIZATION OF TI SLAG. FACILITY: URAL. INST. CHERN. METAL., SVERDLOVSK, USSR.

UNCLASSIFIED

UDC: 532.596+551.46.06.8

USSR

NIKIFOROV, Ye. G., BLINOV, N. I., BARYSHEVA, G. B., KOCHETOV, S. V.

"Method of Calculating the Fields of Average Monthly and Average Seasonal Currents in Outlying Arctic Seas and the Adjacent Part of the Arctic Basin"

Tr. Arkt. i antarkt. NII (Works of the Arctic and Antarctic Scientific Research Institute), 1970, 293, pp 17-48 (from RZh-Mekhanika, No 4, Apr 71, Abstract No 4B474)

Translation: The development of the theory of wind currents is briefly surveyed. It is pointed out that development of a procedure for calculating the total current necessitates separate accounting for a number of factors and is complicated by lack of knowledge on the period of establishment of either the density or the barometric flows. Taking Eckman's equations of unsteady flow as a basis, the authors consider the problem of time of establishment of a drift current in a barotropic sea of constant depth. The problem is solved by sequential application of Laplace and Greenberg-Leichtmann transforms to the equations of motion. A Laplace

1/4

NIKIFOROV, Ye. G., et al., Tr. Arkt. i antarkt. NII, 1970, 293, pp 17-48

transform is applied to the equation of continuity, and the result is then integrated with respect to the vertical coordinate z from the surface to the bottom. As a result, an equation is found for mapping the rise in the free surface. The original for the rise ζ is found with the aid of the Cauchy theorem on residues (the computations are not given), and the problem for ζ leads to an ordinary homogeneous first-order linear differential equation. Solution of the latter is sought for the case where the field of atmospheric pressure is given in the form $P = P_0 \cos kx \cos ky$. Eckman's equations for a steady-state wind over the surface of water are used for determining the tangential stresses τ_x and τ_y , and ζ is sought in the form $\zeta = \zeta_0(t) \cos kx \cos ky$. The solution is found for ζ_0 . The results are tabulated, and it is concluded on the basis of an analysis of the tables that the time of establishment of barotropic currents is short compared with the time of reformation of density in outlying seas. On this basis, the authors propose a division of the current into density and barotropic components, taking Eckman's equations for steady-state current as a point of departure in both instances. A computational method is proposed. Projections of the complete flows on the x - and y -axes in the horizontal plane are compared for a barotropic and a nonhomogeneous sea, and formulas are found for the uncompensated part of the pressure gradient due to the slope

2/4

- 80 -

NIKIFOROV, Ye. G. et al., Tr. Arkt. i antarkt. NII, 1970, 293, pp 17-48

of the free surface of the sea, which gives the authors the possibility for dividing the current into two components. A procedure for calculating drift currents in a barotropic sea is outlined in detail. Ekman's equations of motion are first solved, and the equation of continuity is used to determine the level of the sea. The non-overflow condition is set by the boundary condition on the shore, and from the liquid boundaries the conditions are extended to infinity without proper substantiation. The authors consider their method to be equally applicable to singly connected and multiply connected seas and to have an advantage over Veselbaum's method. A numerical method is proposed for computer calculation with coarser nets outside the region under consideration. A method is then considered for calculating the density component of the flow velocity, assuming that the density field is independent of the barotropic part of the current.

Abstractor's note: The work contains errors. Formula (19) is incorrectly differentiated, and therefore formula (20), derived from (19), is not valid, and consequently, so are the subsequent formulas (22), (23), (24), (25), etc. Equations of continuity (28) for a barotropic and a baroclinic sea (p 44) are incorrectly written (the term from integration of

3/4

NIKIFOROV, Ye. G. et al., Tr. Arkt. i antarkt. NII, 1970, 293, pp 17-48

$\partial v_z / \partial z$ is left out) and contradict the properly written equation (9).
Double integrals are incorrectly written in formulas (22)-(26), (26) [sic]
(28) and (2). The formula

$$P = g \int_0^z \rho dz - \rho g \bar{z} = Q - G = -P$$

is written on page 42, and it is incorrectly stated that this formula is
obtained by integrating formula (19) from the surface to the bottom ($z=h$).
Principal equations (32) and (38) found by the authors are therefore
incorrect. A. K. Nikitin.

4/4

- 81 -

PROCESSING DATE--09OCT70

UNCLASSIFIED

1/2 020

TITLE--CALCULATION OF THE OPTIMAL TIME OF THERAPEUTIC USE OF RADIOISOTOPE
SOURCE OF RADIATION -U-
AUTHOR-(03)-SULKIN, A.G., KOCHETOVA, G.P., BORISOV, A.YE.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 4, PP 63-66

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RADIOISOTOPE, RADIATION SOURCE, MEDICAL NUCLEAR APPLICATION,
RADIOTHERAPY, COBALT ISOTOPE, MEDICAL EQUIPMENT/INSTRUMENTS MEDICAL
EQUIPMENT, (U)LUCH 1 MEDICAL EQUIPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY KEEL/FRAME--1990/0958

STEP NO--UR/0241/10/015/004/0063/0066

100109115

PROCESSING DATE--090CT70

UNCLASSIFIED

2/2 020

CIRC ACCESSION NJ--A0109115
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE ARTICLE IS CONCERNED WITH THE DETERMINATION OF THE OPTIMAL (FROM THE VIEWPOINT OF MINIMAL COST OF IRRADIATION SEANCE) TIME OF USING THE RADIOISOTOPE SOURCE IN GAMMATHERAPEUTIC APPARATUS. THE TECHNIQUE OF THE CALUCLATION AND THE MAIN RATIUS AND FORMULAS ARE GIVEN. A TABLE FOR FACILITATING THE PRACTICAL USE OF THE PROPOSED TECHNIQUE IS DESCRIBED. THE SAMPLES OF CALCULATION OF THE OPTIMAL TIME OF USING CO PRIMEBO SOURCES IN TELEGAMMATHERAPEUTIC APPARATUS LUCH-1 AND ROKUS ARE PRESENTED. THE AUTHORS ANALYZE THE DEPENDENCE BETWEEN THE OPTIMAL TIME AND DURATION OF THE IRRADIATION SEANCE, THE TIME FOR AUXILIARY AND PREPARATORY MEASURES, AND THE WORK SHIFTS AND THE THERAPEUTIC ROOM. FACILITY:
VSESOUZNY N-1 INSTITUT RADIATIONNOY TEKHNIKI.

UNCLASSIFIED