UNCLASSIFIED PROCESSING DATE--20NOV70

2/2 036

CIRC ACCESSION NO--AP0124958

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LUMINESCENCE OF SINGLE CRYSTALS OF A CONTINUOUS RANGE OF SOLID SOLNS. OF GAS SUBX SE SUB1-X WAS STUDIED AT 77DEGREESK. THE EXCITATION SPECTRUM CONSISTS OF 1 BROAD BAND GRADUALLY BROADENING WITH TRANSITION FROM GAS TO GASE. FOR CRYSTALS WHERE X IS SMALLER THAN OR EQUAL TO 0.5, LUMINESCENCE IN THE LONGWAVE REGION ADJOINS THE EDGE OF THE ABSORPTION BANDS. THE LUMINESCENCE CONSISTS OF 2 BANDS. SHORTWAVELENGTH BANDS OF MEDIUM INTENSITY HAVE EXCITON CHARACTER. THE STOKES DISPLACEMENT GRADUALLY DECREASES FROM GAS TO GASE. IT IS 0.05 EV FOR GASE. USING MOTT'S FORMULA FOR THE DEPENDENCE OF INTENSITY OF LUMINESCENCE ON TEMP., THE CALCD. ENERGY OF ACTIVATION WAS 0.39 AND 0.37 EV FOR GAS AND GASE, RESP. FACILITY: KISHINEV. GOS. UNIV., KISHINEV, USSR.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--ELECTROABSORPTION OF GALLIUM SELENIDE SINGLE CRYSTALS -U-

AUTHOR-(02)-KARAMAN, M.I., MUSHINSKIY, V.P.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(2), 424-5

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--SINGLE CRYSTAL, CHEMICAL BONDING, DIELECTRIC CONSTANT, GALLIUM COMPOUND, SELENIDE, BOND ENERGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0572 STEP NO--UR/0449/70/004/002/0424/0425

CIRC ACCESSION NO--AP0105557
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--18SEP70

2/2 023

CIRC ACCESSION NO--AP0105557

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHANGE IN THE ABSORPTION COEFF., K, WAS DETD. FOR A GASE SINGLE CRYSTAL AND FOR SOLID SOLNS, DUE TO THE ACTION OF AN ELEC. FIELD. THE SPECTRAL DEPENDENCE OF K WAS FOUND IN THE ABSENCE OF A FIELD, AND THE CHANGE, DELTA K, WAS MEASURED AT 77DEGREES K FOR A FIELD E EQUALS E SUBO PLUS E SUBVAR, WHERE E SUBO IS THE CONST. COMPONENT AND E SUBVAR IS THE VVARIABLE COMPONENT OF THE FIELD. THE SPECTRAL DEPENDENCE OF DELTA K OBTAINED AT E SUBO EQUALS E SUBVAR EQUAL 2.5 TIMES 10 PRIME3 V-CM WAS USED TO CALC. THE WIDTH OF THE FORBIDDEN BAND (DELTA E SUBG EQUALS 2.109 PLUS OR MINUS 0.002 EV) AND THE BOND ENERGY OF THE EXCITON (G EQUALS 0.021 PLUS OR MINUS 0.002 EV) FROM THE POSITIONS OF THE 1ST, N EQUALS 1, AND 2ND, N EQUALS 2, NEG. MIN. THE EFFECTIVE MASS OF THE EXCITON, M EQUALS 0.15M SUBO, AND THE RADIUS OF THE 1ST BOHR ORBIT, ALPHA EQUALS 34 ANGSTROM, WERE CLACD. BY USING THE VALUE OF THE STATISTICAL DIELEC. CONST. FOR GASE, EPSILON SUBO EQUALS 9.8.

UNCLASSIFIED

USSR

UDC 539.374

MUSHIN'SKIY, YE.

"Behavior of the Solutions of Certain Equations for Viscoelastic Vibrations of Rods"

Tr. V Mezhdunar. konf. po nelineyn. kolebaniyam. T. 3 (Works of the V International Conference on Nonlinear Oscillations. Vol. 3), Kiev, Institute of Mathematics of the Academy of Sciences UkrSSR, 1970, pp 509-517 (from RZh-Mekhanika, No 12, Dec 71, Abstract No 12V630)

Translation: The following differential equation is considered

$$\frac{\partial^2 u}{\partial t^2} = (-1)^{k+1} \frac{\partial^k}{\partial x^k}\left(\beta \frac{\partial^k u}{\partial x^k} + \alpha \frac{\partial^{k+1} u}{\partial x^k \partial t}\right) + \gamma$$

It describes oscillations of a rod that are longitudinal at $k = 1$ and transverse at $k = 2$. The material of the rod obeys the Voigt equation. The quantities α, β and γ are functions of x, t and $\partial u/\partial x$, $\partial^2 u/\partial x^2, \ldots$, $\partial u^k/\partial x^k$ and $\partial u/\partial t$, $\partial^2 u/\partial t \partial x, \ldots$, $\partial^{k+1} u/\partial x^k \partial t$ are defined for $x \in (0, l)$, $t \in (0, \infty)$ and any functions of the remaining arguments. The boundary and initial conditions have the form:

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MUSHIN'SKIY, YE., Tr. V Mezhduuar. konf. po nelineyn. kolebaniyam. T. 3, Kiev, Institute of Mathematics of the Academy of Sciences UkrSSR, 1970, pp 509-517

$$u(0, t)=\frac{\partial u}{\partial x}(0, t)=\ldots=\frac{\partial^{k-1}u}{\partial x^{k-1}}(0, t)=0$$

$$u(l, t)=\frac{\partial u}{\partial x}(l, t)=\ldots=\frac{\partial^{k-1}u}{\partial x^{k-1}}(l, t)=0$$

$$u(x, 0)=\varphi(x), \frac{\partial u}{\partial t}(x, 0)=\psi(x) .$$

Conditions are established under which the solution of the classical problem is bounded and tends exponentially toward a null solution with respect to t as $t \to \infty$ and uniformly with respect to the x-coordinate. It is shown that the null solution of the problem is asymptotically stable for $\gamma = 0$. M. I. Rozovskiy.

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UNCLASSIFIED PROCESSING DATE--

1/2 010

TITLE--PURIFICATION OF PYROLYZED ACETYLENE BY SULFURIC ACID -U-

AUTHOR-(03)-KOSTYUK, V.P., MUSHIY, R.YA., STRIZHEVSKIY, I.I.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. MOSCOW 1970, 46(2), 95-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PYROLYSIS, SULFURIC ACID, ACETYLENE, CHEMICAL PURIFICATION, BUTADIENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0064/70/046/002/0095/0097

PROXY REEL/FRAME--1997/0736

NO--AP0119643 CLASSIFIED

UNCLASSIFIED

2/2 010 PROCESSING DATE--23OCT7C

CIRC ACCESSION NO--AP0119643

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONCNS. OF PROPADIENE, MEC TRIPLE BOND CH, DIVINYL, ETC TRIPLE BOND CH, VINYLACETYLENE, AND HC TRIPLE BOND CC TRIPLE BOND CH IN ACETONE AND MOISTURE FREE PYROLYTIC ACETYLENE (I) WERE REDUCED FROM 0.2-0.5, 0.2-0.4, 0.01-0.02, 0.001-0.002, 0.02-0.03, AND 0.005-0.007 VOL. PERCENT, RESP., TO 0.01, 0.001, 0.001, 0.001, 0.0013, AND 0.0046 VOL. PERCENT RESP. BY BUBBLING I THROUGH 95PERCENT H SUB2 SO SUB4 AT 25DEGREES AT FLOW RATE 500-100 VOL.-HR. INCREASING THE TEMP. TO 55-75DEGREES CAUSED NEGLIGIBLE INCREASE IN THE DEG. OF PURIFICATION BUT INCREASED CONSIDERABLY THE RESINIFICATION OF THE ACID AND LOSS OF I; THE DEGREE OF PURIFIVATION DECREASED WHEN THE ACID CONCN. WAS REDUCED TO 90-85PERCENT. THE AMT. OF ACID NEEDED TO PURIFY 1 TON OF I WAS SIMILAR TO 50 KG.

UNCLASSIFIED

Acc. Nr: AP0047773 Ref. Code: UR0296

PRIMARY SOURCE: Izvestiya Akademii Nauk Turkmenskoy SSR, Seriya Biologicheskikh Nauk, 1970, Nr / , pp 53-57

M. G. Mushkambarova

LAMELLICORNS (COLEOPTERA, SCARABAEIDAE) IN MURGAB AND TEDZHEN LOWERS

Lamellicorns (Coleoptera, Scarabaeidae) are presented by 25 species in Murgab and Tedzhen lowers (Turkmenia). 6 of them are endemic. There is no fastidiousness in their nutrition. Beetles of 13 species are intermediate hosts of helminths for domestic and wild animals.

REEL/FRAME
19791396

Acc. Nr.: AP0029572 Ref. Code: UR 0297

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 1, pp76-81

EFFECT OF AMPHOTERICIN B ON ELECTROCARDIOGRAM SHOWING IN DOGS

A. M. Dumova, M. V. Mushkin

Leningrad Institute for Antibiotics, Leningrad Post Graduate Medical Institute

Showing of electrocardiograms in 4 dogs (2 male and 2 female) treated with intravenous water soluble amphotericin B in sodium desoxycholate in doses of 500 to 1000 Units/kg was studied. Variability in the individual sensitivity of the animals to the antibiotic was observed. Pronounced changes in the electrocardiograms in the form of sinusoid arhythmia with rare systoles, higher P pick and displacement of PQ interval down from the isoline, slower atrioventricular conductivity, sinoauricular block, presence of "gigantic" positive or negative T picks and high thin Q pick were recorded. The changes in the electrocardiograms must be indicative of electrolyte impairement combination with dystrophic changes in the myocardium.

Grm

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REEL/FRAME

19681202

USSR UDC 541.128.1 + 547.45

MUSHKETIK, L. S., and VOLKOVA, N. V., Institute of Organic Chemistry, Academy of Sciences UkrSSR

"Mechanism of the Action of Ethylenediamine in the Iodination of Glycol Aldehyde Phosphoric Acid Ester"

Kiev, Ukrainskiy Khimicheskiy Zhurnal, Vol 19, No 9, Sep 73, pp 962-963

Abstract: The kinetics of the iodination of glycol aldehyde phosphoric acid ester in the presence of ethylenediamine were investigated. It was established that substitution with I or one of the H atoms in the ester was accompanied by splitting off of the phosphate group. Formation of the active enamine H_2O_3PO-HC=CH-NHCH$_2$CH$_2$nH$_2$ can be assumed, which undergoes iodination followed by hydrolysis with the formation of glyoxal. Glyoxal could not be isolated from the reaction mixture; it apparently underwent further transformations.

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1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--TRIAMINO,S,HEPTAZINE -U-

AUTHOR-(05)-ZAGRANICHNYI, V.I., MOLEY, I.I., KARLIK, V.M., MOLEVA, V.P., MUSHKIN, YU.I.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,348

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AMINE, ORGANIC AZINE, CHEMICAL PATENT, PYROLYSIS, ORGANIC SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1565 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128960

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AA0128960
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TRIAMONO,S,HEPTAZINE IS PREPD. BY PYROLYZING CYANURIC ACID AT 350-450DEGREES UNDER PRESSURE OF THE GASES SEPG. IN THE REACTION.

UNCLASSIFIED

USSR

UDC: 669.295

VYATKIN, I. P., ZIMIN, V. M., KUNGINA, N. I., MUSHKOV, S. V., and DZHONS, M. M.

"Lining Smelting of Briquetted Titanium Sponge"

Moscow, Tsvetnyye Metally, No 10, Oct 73, pp 41-42

Abstract: The authors study the possibility of using pressed titanium briquets without presmelting as consumable electrodes. This involved the selection of the optimal technological parameters which would ensure smelting stability. The solution of this problem would make shaped casting inexpensive. The smelting was conducted in a lined vacuum arc furnace designed by VIAM (All-Union Scientific Research Institute of Aviation Materials). The TG-100, TG-120, and TG-ChM grades of titanium sponge were used as the charging material. The sponge was pressed in the B-654 briquet press at 630 tons into briquets of 140 and 160 mm in diameter and 120 mm high. In all more than 50 smelts were conducted. It was shown that sponge quality during the smelting of briquets made from the TG-100, TG-120, and TG-4M grades did not affect smelting. The visually observable gas generation was practically the same or significantly greater than during the smelting of monolithic electrodes. An attempt to reduce gas generation by smelting in a helium atmosphere proved unsuccessful. The pressed electrodes also need more heat than the monolithic electrodes since their thermal conductivity and density are lower. It was also shown that the use of large diameter electrodes is more advantageous. During test-

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VYATKIN, I. P., et al, Tsvetnyye Metally, No 10, Oct 73, pp 41-42

ing the obtained liquid metal was poured into forms, producing either ingots or shaped parts. Specimens were cut from these and their chemical composition and mechanical properties determined. The corrosion resistance of these specimens was determined using standard methodology in HCl gas and acid media. The corrosion rate was quite high during the first 800 hours and reached maximum at 150-200 hours. Specimens made from TG-ChM corrode more than specimens made from TG-100. As the test duration is increased, the difference in the rate of corrosion diminishes and becomes identical.

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UDC 669.721

VYATKIN, I. P., KECHIN, V. A., MUSHKOV, S. V., SHCHELKONOGOV, A. A., and STOLBOVA, A. D.

"On the Continuous Production of High-Purity Magnesium"

Moscow, Tsvetnyye Metally, No 6, Jun 73, pp 47-48

Abstract: The continuous production of high-purity magnesium by processing the melt with titanium-containing additives in a casting complex is described. The quality of the magnesium produced satisfies the purity requirements for all admixtures, except for iron admixtures. To eliminate iron, the titanium-containing additives are introduced into the refining chamber of the furnace together with crude magnesium; as a result of titanium reacting with iron in the crude, the generated compounds precipitate on cooling on the bottom of the refining chamber. The iron-purified magnesium, under pressure of the next portion of the cast crude, overflows into the pouring chamber; from there it is fed onto the casting conveyer. The iron content, its analysis, and the dynamics of C_{Fe} change are discussed. Industrial results showed that melts contained 0.003-0.004%Fe and 0.006-0.014%Ti. Two tables, three bibliographic references.

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USSR UDC 669.721.053.4

VYATKIN, I. P., GULYAKIN, A. I., KECHIN, V. A., MUSHKOV, S. V.

"Protection of Magnesium from Saturation with Iron During Remelting in Steel Crucibles"

Tr. Vses. N.-i. i Proekt. In-ta Alyumin., Magn. i Elektrod. Prom-sti [Works of All-Union Scientific Research and Planning Institute for the Aluminum, Magnesium and Electrode Industry], No 79, 1971, pp 83-87, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G247 by G. Svodtseva).

Translation: High purity Mg is produced in a steel crucible by processing of the Mg raw material with Ti-containing additives, followed by cooling for various periods of time. The content of Fe is decreased from 0.03-0.04%, the content of Mg raw material to 0.001-0.005% following Ti treatment. Remelting of high purity Mg is possible in the production of alloys based on Mg or Al at consumer plants. High purity pig Mg containing 0.001% Fe was charged into a steel crucible, melted for 4 hours, heated to 710° and held for 1.5 hours, then repoured. The content of Fe remained at the same level during all stages of remelting. The content of other impurities also remained unchanged.

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USSR UDC 669.721.41

VYATKIN, I. P., KECHIN, V. A., MUSHKOV, S. V., BRANDMAN, O. I., BONDAREVA, E. P.

"Composition and Structure of Highly Pure Primary Magnesium"

Metalloved. splavov legkikh met -- V sb. (Physical Metallurgy of Alloys of Light Metals -- collection of works), Moscow, Nauka Press, 1970, pp 185-189 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G220)

Translation: A new procedure has been developed and introduced for purifying Mg by treating the Mg with Ti-containing additives. The dependence of the Mg structure on its composition has been studied in special samples with Ti and Be additives. The Be additive used to decrease the oxidizability of highly pure Mg does not lead to enlargement of the Mg macrograin in the presence of Ti admixture. There are 4 illustrations, 1 table, and a 7-entry bibliography.

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USSR

UDC 669.721

VYATKIN, I. P., KECHIN, V. A., MUSHKOV, S. V., BRANDMAN, O. I., and BONDAREVA, E. P.

"Composition and Structure of High-Purity Initial Magnesium"

Metallovedeniye Splavov Legkikh Metallov-Sbornik, Moscow, "Nauka", 1970, pp 185-189, resume

Translation: A new method of refining magnesium by processing magnesium with titanium-containing additives has been developed and introduced. The composition dependence of the magnesium structure was investigated on special specimens with titanium and beryllium additions. It is shown that the addition of beryllium with a view to decreasing the oxidizability of high-purity magnesium does not affect an enlarging of the macrograin in presence of a titanium admixture. Four figures, one table, seven bibliographic references.

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UDC 669.721.634

USSR

VYATKIN, I. P., MUSHKOV, S. V., KECHIN, V. A., and AKIMINA, N. K.

"PUrity of the Starting Material for Magnesium-Lithium Alloys"

Tsvetnye Metally, No 4, Apr 71, p 53

Abstract: Since traces of sodium in a magnesium-lithium alloy increase its brittleness, a study was made to determine the maximum allowable amounts of sodium which may be present in the raw materials used for the electrolytic production of the alloy. The use of carnallite with a maximum amount of 7.5% magnesium chloride for electrolysis allowed the production of magnesium-lithium alloy ingots with a maximum sodium content of 0.003%.

USSR UDC 669.715

VYATKIN, I. P., KECHIN, V. A., BRANDMAN, O. I., and MUSHKOV, S. V.

"Variation of Iron Content in Refining and Holding Magnesium Melts in Industrial Furnaces"

Moscow, Tsvetnyye Metally, No 5, May 70, pp 47-48

Abstract: A study was made of the variation of iron content in magnesium melts. It is noted that the variation of iron content probably depends not only on the magnesium cooling rate, but also on its state and on the nature of impurities. The dispersion of iron content in magnesium in SNT-1 furnaces is explained by the wide range of magnesium temperature variation and the related iron solubility in magnesium. The magnesium temperature stabilization in continuous refining furnaces with capacities of 6 to 15 tons of Mg made it possible to obtain a constant iron content in magnesium.

1/2 018 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--ADOPTION OF A FOUNDRY COMPLEX FOR REFINING AND TEEMING MAGNESIUM -U-

AUTHOR-(05)-VYATKIN, I.P., KANAYEV, I.YE., MUSHKOV, S.V., USHAKOV, V.D., BRANDMAN, O.I.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(1) 53-4

DATE PUBLISHED--------70

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

TOPIC TAGS--METAL REFINING, MAGNESIUM, METALLURGIC FURNACE, ELECTROLYTE, MAGNESIUM CHLORIDE, POTASSIUM CHLORIDE, SODIUM CHLORIDE, MAGNESIUM OXIDE, ECONOMICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0748 STEP NO--UR/0136/70/043/001/0053/0054

CIRC ACCESSION NO--AP0107290

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107290

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A TEEMING COMPLEX HAS BEEN ADOPTED FOR PRODUCTION OF PIG MG, INCLUDING A CONTINUOUSLY OPERATING FURNACE WITH SALT HEATING, ELECTROMAGNETIC CONDUCTION PUMP, AND A TEEMING CONVEYER OF DOMESTIC CONSTRUCTION. THESE PARTS ARE DESCRIBED. THE CONSTRUCTION OF THE FURNACE PRECLUDES MG FROM BEING IN CONTACT WITH THE LINING AND THE ATM., PROVIDES FOR FAST AND UNIFORM HEATING OF MG TO THE REQUIRED TEMP., AND MAKES IT POSSIBLE TO MAINTAIN THAT TEMP. WITH A MIN. OF ENERGY LOSSES. AS COMPARED TO THE LAB. FURNACE, THE COM. PROTOTYPE COULD TAKE 1.5 TIMES AS MUCH MG. THE OPERATING TEMP. OF THE ELECTROLYTE AND MG IS 700-10DEGREES; THE CURRENT IS 5 KA, AND THE VOLTAGE IS 30-40 V; THE CAPACITY FO THE HOPPER IS 6 TONS, AND THE AMT. OF THE ELECTROLYTE (MGCL USB2 10, KCL 60-70, NACL 10-15, AND BA CL SUB2 5-10PERCENT) IN THE FURNACE IS 13 TONS. THE TEEMING OF THE REFINED MG CAN BE CARRIED OUT DURING THE PURING IN OF THE MG RAW MATERIAL. THE ESSENCE OF THE REFINING OPERATION CONSISTS IN SETTLING DOWN OF THE FREE, OR COMBINED WITH MGO, CHLORIDE PARTICLES. IN THE REFINED MG THERE IS LESS THAN 0.003PERCENT CL PRIME NEGATIVE. DURING THE SETTLING DOWN, THE EXCESS MAT. OF FE, RELATIVE TO THE EQUIL. AMT., ALSO SETTLES DOWN. THE ADOPTION OF THE TEEMING COMPLEX MADE IT POSSIBLE TO REDUCE THE SP. CONSUMPTION OF ELEC. ENERGY BY 2.5 TIMES; IT ALSO MADE IT POSSIBLE TO REDUCE THE WASTE OF THE METAL AS WELL AS OF LABOR.

UNCLASSIFIED

USSR UDC 669.721'884

VYATKIN, I. P., MUSHKOV, S. V., KECHIN, V.A., and YELKIN, F. M.

"Technological Requirements For the Production of Magnesium-Lithium Alloys"

Moscow, Tsvetnyye Metally, No 6, 1972, pp 43-44

Abstract: Two methods were considered for the preparation of magnesium-lithium alloys. One method required the use of a protective flux consisting of molten lithium chloride and lithium fluoride. It was unacceptable because of many difficulties encountered during the work. The second method uses argon as a protective atmosphere in a 500-kg crucible equipped with a cover. The charge elements are added in the following sequence: at first, a small amount of magnesium ingot with 1.8-2.5% Mn is melted in the crucible at 700° for 4-5 hr, then a high-purity magnesium ingot with not more than 0.005% Na is added at the same temperature, followed by aluminum, zinc, cadmium, and lithium, in that order. The alloy was mixed for 5-15 min after the addition of each alloying element. All metals were added as ingots in order to eliminate impurities, especially Na. Lithium ingots were washed in kerosene at first, wiped up, and dried in air before being placed into the crucible. The whole production process took 9-10 hr. The pouring of the alloy was done at 700-710°C. The alloys (several smeltings) contained

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VYATKIN, I. P., et al., Tsvetnyye Metally, No 6, 1972, pp 43-44

7.79-8.14% Li, 4.64-5.09% Al, 1.42-1.56% Zn, 4.12-4.48% Cd, 0.34-0.39% Mn, and 81% Mg. The concentration of components varied, depending on smelting. Special precautions were taken to exclude Na and chlorides from the alloys.

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1/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--ELECTRON MOBILITY IN INDIUM PHOSPHIDE, INDIUM ARSENIDE SOLID SOLUTIONS AT ROOM TEMPERATURE -U-

AUTHOR-(04)-KEKELIDZE, N.P., GOGIASHVILI, V.A., MUSHKUDIANI, O.L., KEKELIDZE, G.P.

COUNTRY OF INFO--USSR

SOURCE--SOOBSHCH. AKAD. NAUK GRUZ. SSR 1970, 57(2), 313-16

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--INDIUM COMPOUND, PHOSPHIDE, ARSENIDE, SOLID SOLUTION, ELECTRON MOBILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1068 STEP NO--UR/0251/70/057/002/0313/0316

CIRC ACCESSION NO--AP0123061

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123061

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ANAL. OF CALCD. AND EXPTL. MOBILITY DATA SHOWS THAT THE MAIN SCATTERING MECHANISM AT ROOM TEMP., INP, INAS, AND INP-INAS SOLID SOLNS. CONTG. ELECTRONS WITH N SIMILAR TO 10 PRIME16-10 PRIME17-CM PRIME3, IS SCATTERING OF CARRIERS ON POLAR LATTICE VIBRATIONS. THE POLAR SCATTERING INCREASES WITH THE TRANSITION FROM INAS TO INP. SCREENING MAY CONSIDERABLY DECREASE THE EFFECTIVENESS OF POLAR SCATTERING WHEN N IS LARGER THAN 10 PRIME17-CM PRIME3. WHEN N EQUALS 0.8 TIMES 10 PRIME19-CM PRIME3 IONIC SCATTERING IS THE MAIN MECHANISM. FACILITY: TBILIS. GOS. UNIV., TBILISI, USSR.

UNCLASSIFIED

USSR UDC 669.721.372

FRANTAS'YEV, N. A., and MUSHSHAVLEV, K. D., All-Union Institute of Aluminum and Magnesium

"Cathode Process on Magnesium Chloride Electrolysis in Melts Containing Impurities"

Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, No 6, 1973, pp 56-62

Abstract: The summary cathodic polarization in the electrolyte of the composition (in wt%) 10 $MgCl_2$, 50 NaCl, and 40 KCl was investigated at 700°C and 0.5 A/cm^2 cathodic current density; the results of measuring the stationary potentials of Ni, Fe, Cr, Al, Mn, Ti, and Mg, as compared to the Cl electrode, are presented. Equal weight Fe and Mn potentials, relative to the comparable Cl electrode, were determined for alloys containing (in ion fractions) $6.4 \cdot 10^{-3}$ and $2.06 \cdot 10^{-2}$ Fe and $5.87 \cdot 10^{-3}$ and $2.13 \cdot 10^{-2}$ Mn, respectively, and the respective empirical equa-

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FRANTAS'YEV, N. A., and MUSHSHAVLEV, K. D., Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, No 6, 1973, pp 56-62

tions are formulated. Fe polarized on the cathode at potentials close to equilibrium. The joint Fe and Mg discharge in melts containing (in ion fractions) $1.07 \cdot 10^{-3}$ to $9.16 \cdot 10^{-3}$ Fe (700°) takes place at 0.06 to 0.4 A/cm^2 current densities. The limiting discharge current of Fe ions was not attained at $3.73 \cdot 10^{-2}$ Fe concentration. At 0.006 A/cm^2 current density, the Mb cathode potential becomes equal to the Fe stationary potential at appropriate Fe concentrations in the electrolyte and appropriate temperature of the electrolyte. Five figures, one table, eight formulas, six bibliographic references.

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1/2 038 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--EFFECT OF SURFACE OXIDE FILMS ON THE MAGNETIC PROPERTIES OF TRANSFORMER STEELS -U-

AUTHOR-(04)-PROKOPCHENKO, YE.A., MIROSHNICHENKO, F.D., KRUTSILO, I.K., MUSHTAYEV, V.F.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(2), 267-71

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--TRANSFORMER STEEL, MAGNETIC PROPERTY, TECHNICAL STANDARD, STEEL SHEET, OXIDATION, SILICON ALLOY, SINGLE CRYSTAL, ANISOTROPY, ETCHED CRYSTAL, COLD ROLLING, OXIDE FILM/(U)GOST E320 TRANSFORMER STEEL, (U)GOST E330 TRANSFORMER STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1926 STEP NO--UR/0048/70/034/002/0267/0271

CIRC ACCESSION NO--AP0115740

UNCLASSIFIED

2/2 038 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0115740

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SERIES OF EXPTS. WAS PERFORMED TO STUDY THE EFFECT OF SURFACE OXIDE FILMS 3-5 MU THICK, OBTAINED BY THERMAL OXIDN. IN AIR, ON THE REDISTRIBUTION OF DISLOCATION IN AND THE MAGNETIC PROPERTIES OF SOVIET TRANSFORMER STEELS GOST E320 AND E330. PLATE SPECIMENS 250 TIMES 20 TIMES 0.35 MM CUT OUT OF COLD ROLLED TRANSFORMER STEEL PLATES AT ANGLES OF 0, 55, AND 90DEGREES WITH RESPECT THE THE ROLLING DIRECTION WERE SUBJECTED TO MAGNETIC MEASUREMENTS AND EXPOSED TO AIR AND (OR) HIGH PURITY AR AT VARIOUS ELEVATED TEMPS. THEN THE FILM THICKNESS WAS DETD. AND THE MAGNETOSTRICTION, COERCIVE FORCE, REMANENT INDUCTION, AND SP. MAGNETIC LOSSES OF THE SPECIMENS WERE MEASURED AGAIN. ANISOTROPY OF THE MAGNETIC PROPERTIES WAS ALSO STUDIED AS THE SPECIMENS CUT AT THE 3 DIFFERENT ANGLES (LONGITUDINALLY, TRANSVERSELY, AND AT 55DEGREES) FROM THE ENROLLED PLATE WERE CONSIDERED TO BE QUASI SINGLE CRYSTALS CUT ALONG THE (100), (110), AND (111) CRYSTALLOGRAPHIC PLANES, RESP. IN SUPPLEMENTARY EXPTS. THE THICKNESS OF THE OXIDE FILM WAS CHANGED BY ETCHING OR ADDNL. ANNEALING. THE PRESENCE OF AN OXIDE LAYER ON THE SURFACE OF THE FESI ALLOYS IMPROVED THEIR MAGNETIC PROPERTIES FROM THE STANDPOINT OF TRANSFORMER APPLICATION, LOWERING THEIR MAGNETOSTRICTION, COERCIVE FORCE, REMANENT INDUCTION, AND SP. LOSSES. AN ANISOTROPY OF THE EFFECT OF THE SURFACE FILM ON THE MAGNETOSTRICTION AS WELL AS ON THE OTHER MAGNETIC PARAMETERS OF THE TRANSFORMER STEELS WAS FOUND. FACILITY: ZAPOROZH. GOS. PEDAGOG. INST., ZAPOROZHE, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--INDOLE DERIVATIVES. V. SYNTHESIS AND TUBERCULOSTATIC ACTIVITY OF INDOLE,3,ALKANOIC ACIDS -U-

AUTHOR-(05)-AVRAMENKO, V.G., PERSHIN, G.N., MUSHULOV, P.I., MAKEYEVA, O.O., YERYSHEV, B.YA.

COUNTRY OF INFO--USSR

SOURCE--KHIM.-FARM. ZH. 1970, 4(3), 15-18

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

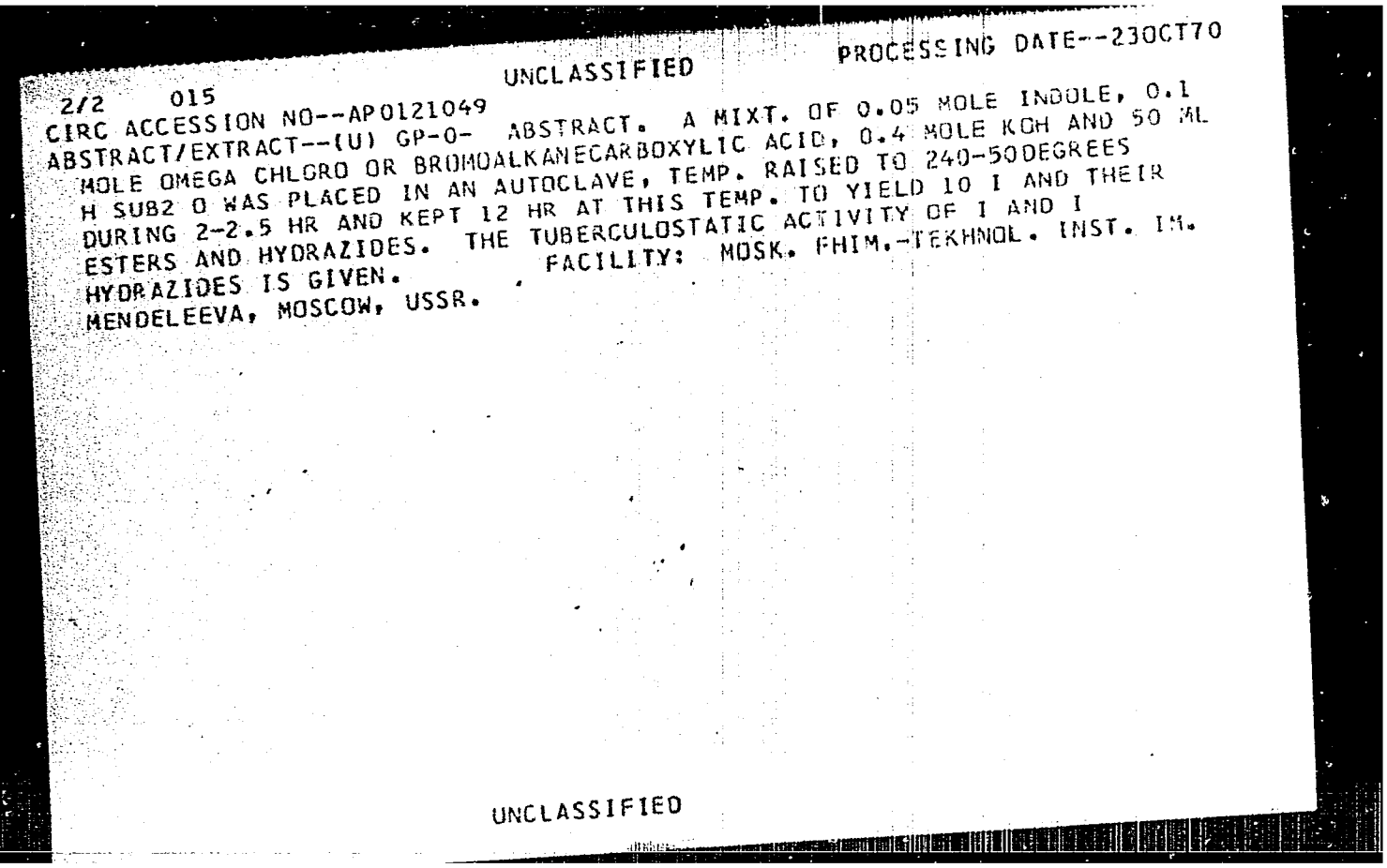
TOPIC TAGS--INDOLE DERIVATIVE, ORGANIC ACID, CHEMICAL SYNTHESIS, MOLECULAR STRUCTURE, TUBERCULOSIS

CONTROL MARKING--NO RESTRICTIONS.

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0361 STEP NO--UR/0450/70/004/003/0015/0018

CIRC ACCESSION NO--AP0121049 UNCLASSIFIED



UNCLASSIFIED PROCESSING DATE--23OCT70

2/2 015

CIRC ACCESSION NO--AP0121049

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MIXT. OF 0.05 MOLE INDOLE, 0.1 MOLE OMEGA CHLORO OR BROMOALKANECARBOXYLIC ACID, 0.4 MOLE KOH AND 50 ML H SUB2 O WAS PLACED IN AN AUTOCLAVE, TEMP. RAISED TO 240-50DEGREES DURING 2-2.5 HR AND KEPT 12 HR AT THIS TEMP. TO YIELD 10 I AND THEIR ESTERS AND HYDRAZIDES. THE TUBERCULOSTATIC ACTIVITY OF I AND I HYDRAZIDES IS GIVEN.

FACILITY: MOSK. FHIM.-TEKHNOL. INST. IM. MENDELEEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 615.281.221.1:547.757

AVRAMENKO, V. G., PERSHIN, G. N., MUSHULOV, P. I., MAKEYEVA, O. O., YERYSHEV, B. YA., SHAGALOV, L. B., SUVOROV, N. N., Moscow Institute of Chemical Technology imeni D. I. Mendeleyev, Moscow, Ministry of Higher and Secondary Specialized Education RSFSR; All-Union Scientific Research Chemical and Pharmaceutical Institute imeni S. Ordzhonikidze, Moscow, Ministry of Health USSR

"Indole Derivatives. Part V. Synthesis and Tuberculostatic Activity of Omega-Indolyl-3-Alkannic Acids"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol IV, No 3, 70, pp 15-18

Abstract: Indolylalkannic acids have been the subject of numerous studies for quite some time. Most of this research, however, has been devoted to lower members of the series of indolylalkannic acids, namely indolyl-3-acetic, β-indolyl-3-propionic and γ-indolyl-3-butyric acids. It is expected that some of these compounds may possess physiological activity. Of particular interest is ω-indolyl-3-undecanoic acid, which is the indole analog of hydnocarpic acid. Indole alkylation with haloalkannic acids shows considerable promise. Earlier research describes the synthesis of heteroauxin from indole

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USSR

AVRAMENKO, V. G., et al, Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol IV, No 3, 70, pp 15-18

and chloracetic acid. In recent years ω-chloroalkannic acids with an odd number of carbon atoms have become readily available. Indole was alkylated with ω-haloalkannic acids in a strongly alkaline medium by heating in an autoclave; 240 -- 250°C, 18 -- 20 atm pressure and a 1:2 indole-to-haloalkannic acid ratio appear to be the optimum reaction conditions. The yield of ω-indoly-3-alkannic acids was 42 -- 90%. The tuberculostatic activity was determined in vitro in a Soton medium with and without blood serum of a horse. Use was made of human microbacteria Academia and H37Rv. The compounds were found to have tuberculostatic activity.

2/2

1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--USE OF POLYACRYLAMIDE FOR THE GRANULATION OF PESTICIDES -U-

AUTHOR-(02)-ZHABITSKIY, P.F., MUSICH, V.N.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. UKR. 1970, (1), 19

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, AGRICULTURE

TOPIC TAGS--PESTICIDE, POLYACRYLAMIDE RESIN, FERTILIZER, GRAIN SIZE, UREA, AMMONIUM NITRATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1362 STEP NO--UR/0436/70/000/001/0019/0019

CIRC ACCESSION NO--AP0125010

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125010

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE BLENDING OF 100 PARTS SAND OR POWD. SLAG WITH 2 PARTS 1PERCENT POLYACRYLAMIDE (I) SOLN. GAVE GRANULES COATED WITH A THIN I FILM. THE BLENDING OF 100 PARTS OF THESE GRANULES WITH 25 PARTS POWD. PESTICIDE AND 5 PARTS POWD. GYPSUM GAVE GRANULES 1.3-1.5 MM IN DIAM. EACH COATED WITH I AND PESTICIDE. SIMILARLY SUPERPHOSPHATE, UREA, OR (NH SUB4)NO SUB3 GRANULES WERE COATED WITH A SUSPENSION OF 3-4 KG PESTICIDE IN 0.2PERCENT AQ. I SOLN. AND DRIED TO GIVE PESTICIDE FERTILIZER MIXTS. FACILITY: INST. FIZIOL. RAST., KIEV, USSR.

UNCLASSIFIED

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USSR

UDC 632.954

SOKOLOV, M. S., ZHUKOV, N. P., SHCHEGLOV, YU. V., KASIKHIN, A. N., and MUSIKAYEV, D. A., All-Union Scientific Research Institute of Phytopathology

"Determination of the Volatility and Phytotoxicity of Vapors of Hormonal Herbicides"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 3, Mar 70, pp 52-54

Abstract: The article suggests a modification of the "isolated system" method for a comparative estimate of the volatility and phytotoxicity of vapors of hormonal herbicides. This method was used to determine the phytotoxicity of the vapors of six 2, 4-D derivatives, viz. the butyl, butoxyethyl, chlorocrotyl and octyl esters (synthesized at the All-Union Scientific Research Institute of Phytopathology), the trichloroallyl ester (synthesized at the Institute of Organic Chemistry, Academy of Sciences USSR, and tested at the All-Union Scientific Research Institute of Phytopathology) and the triethanolamine salt, using beans as the test plants. The herbicides are ranked as follows in ascending order of phytotoxicity: triethanolamine salt < trichloroallyl ester < butoxyethyl ester < octyl ester < chlorocrotyl ester < butyl ester. It was found that there is a negative correlation between the volatility of a substance and its molecular weight and boiling point.

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UNCLASSIFIED PROCESSING DATE--04DEC70

1/2 027

TITLE--DETERMINATION OF VOLATILITY AND PHYTOTOXICITY OF VAPORS OF HORMONAL HERBICIDES -U-

AUTHOR-(05)-SOKOLOV, M.S., ZHUKOV, N.P., SHCHEGLOV, YU.V., KASIKHIN, A.N., MUSIKAYEV, O.A.

COUNTRY OF INFO--USSR

SOURCE--KHIMIYA V SEL'SKOM KHOZYAYSTVE, 1970, NR 3, PP 52-54

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HERBICIDE, HORMONE, TOXICITY, AROMATIC ESTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1359 STEP NO--UR/0394/70/000/003/0052/0054

CIRC ACCESSION NO--AP0136723

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--04DEC70

2/2 027

IRC-ACCESSION NO--AP0136723

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PURPOSE OF THE WORK WAS TO DEVELOP A RELIABLE METHOD FOR DETERMINATION OF THE VOLATILITY AND PHYTOTOXICITY OF VAPORS OF ESTER DERIVATIVES OF 2,4-D. BUTYL, BUTOXYETHYL, CHLOROCROTYL, OCTYL AND TRICHLOROALLYL ESTERS WERE USED. AN ASSUMPTION WAS MADE THAT THE PHYTOTOXICITY OF THE ABOVE COMPOUNDS (CHEMICALLY PURE) WAS PRACTICALLY IDENTICAL. THE PHYTOTOXICITY WAS DETERMINED BY A MODIFIED "ISOLATED SYSTEM" METHOD. THE METHOD WAS BASED ON DETERMINATION OF PLANT WEIGHTS AFTER EXPOSURE OF JUST SPROUTED SEEDLINGS TO THE VAPORS FOR 24 HOURS AND THEIR SUBSEQUENT DEVELOPMENT AND GROWTH FOR 10 DAYS. THE RESULTS OBTAINED INDICATED THAT THE METHOD IS RELIABLE WITH 4-12PERCENT ERROR, THAT VOLATILITY OF THE COMPOUNDS TESTED DIFFERS CONSIDERABLY IN REVERSE DEPENDENCE TO THE MOLECULAR WEIGHT AND BOILING POINT OF THE COMPOUNDS, AND THAT THESE HERBICIDES CAN BE ARRANGED ACCORDING TO THEIR INCREASING PHYTOTOXICITY ACCORDING TO THE FOLLOWING SERIES: TRIETHANOLAMINE SALT OF 2,4-D, TRICHLOROALLYL ESTER, BUTOXYETHYL ESTER, OCTYL ESTER, CHLOROCROTYL ESTER, BUTYL ESTER. FACILITY: VSESOYUZNYY NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT FITOPATOLOGII.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--DETERMINATION OF THE VOLATILITY AND PHOTOTOXICITY OF THE VAPOR FROM HORMONAL HERBICIDES -U-

AUTHOR-(05)-SOKOLOV, M.S., ZHUKOV, N.P., SHCHEGLOV, YU.V., KASIKHIN, A.N., MUSIKAYEV, D.A.

COUNTRY OF INFO--USSR

SOURCE--KHIM. SEL. KHOZ. 1970, 8(3), 212-14

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HERBICIDE, LEGUME CROP, ESTER, VAPOR STATE, TOXICITY, PLANT PHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0183 STEP NO--UR/0394/70/008/003/0212/0214

CIRC ACCESSION NO--AP0130942

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0130942

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN POT EXPTS. BEAN PLANTS WERE HELD IN CLOSED CONTAINERS TOGETHER WITH FILTER PAPER STRIPS, PREVIOUSLY WETTED WITH 0.02PERCENT SOLNS. OF 2,4-D ESTERS IN ETHANOL OR DIOXANE, FOR 24 HR AT 27DEGREES. THE ORDER OF VOLATILITY AS WELL AS PHYTOTOXICITY OF THE ESTERS WERE: TRIETHANOLAMINE SALT SMALLER THAN TRICHLOROALLYL ESTER SMALLER THAN BUTOXYETHYL ESTER SMALLER THAN OR EQUAL TO OCTYL ESTER SMALLER THAN CHLOROOCTYL ESTER SMALLER THAN BUTYL ESTER. A CORRELATION BETWEEN MOL. WT., B.P., AND VOLATILITY WAS FOUND.

UNCLASSIFIED

USSR

UDC 621.762:621.771

CHEKMAREV, A. P., MUSIKHIN, A. M., KLIMENKO, P. L., and LEBEDIK, G. L., Dnepropetrovsk Metallurgical Institute; Institute of Problems of Material Science, Academy of Sciences Ukrainian SSR

"Using Sheet Mills for Rolling Metal Powders"

Kiev, Poroshkovaya metallurgiya, No 2, Feb 72, pp 91-93

Abstract: The objective of this study was the potential use of conventional roll mills for high-speed rolling of metal powders. The experiment involved a 330 mill with a roll diameter of 394 mm and PZh-1M grade of metal powder with a bulk weight of 2.32 and shake-down weight of 2.80 g/cm^3. The mill was equipped with a force-feed mechanism. The measurements included: a) the stresses at the contact surface of the metal powder with the roll; b) rolling torque; c) rpm of both the work rolls and the worm roll. The diagram of the force feed mechanism is shown. The study indicates that conventional roll mills are well suited for rolling metal powder into sheets and tape at roll speeds of 2 m/sec and higher on condition that the roll mills are equipped with force feed systems. (2 illustrations, 1 table, 6 biblio. references)

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UDC 621:762

USSR

MUSIKHIN, A. M., VINOGRADOV, G. A., OGNEV, R. K., KOLOMOYETS, G. G., and TER-POGOSYAN, E. D.

"High-Speed Rolling of Iron and Titanium Powders"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 100-105

Translation: Results are given for research on conditions of rolling with forced feeding of metal powders. An empirical dependency is established between the thickness of the strip and the productivity of the mill as a function of the value of the roll solution and pressure of the powder support. It is demonstrated that the use of forced powder feeding makes it possible to increase the rolling speed to 3.2 meters per second and more, and to regulate the density of the strip within a wide range. Four illustrations, one table, and two bibliographic entries.

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UDC 621.762:669.462.295

USSR

MUSIKHIN, A. M., VINOGRADOV, G. A., OGNEV, R. K., KOLOMOYETS, G. G., and TER-POGOSYAN, E. D.

"High-Speed Rolling of Iron and Titanium Powders"

Sb. tr. Vses. n.-i. i proyektn. in-t titana [Collected Works of All-Union Scientific-Research and Planning Institute for Titanium], 6, 1970, pp. 100-105, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract No. 1 G474 by the authors).

Translation: The use of forced powder feed allows the rolling speed to be increased to 3.2 m/sec and higher, i.e., to speeds higher than those ordinarily used by several orders of magnitude. The density of the raw rolled product with forced feed can be adjusted over broad limits by changing the powder feed force. Increasing the height of the powder column in the hopper over the mill with gravity powder feed cannot be used to replace forced powder feed, since it does not allow an increase in rolling speed and has no influence on the thickness and density of the raw rolled product. 4 figures.

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UDC: 621.373:530.145.6

USSR

MUSIN, R. A., KAZAKOV, N. F.

"Investigation of Contact Interaction of Sulfide Ceramic With Metals, and Development of a Technique for Joining Them"

V sb. Progressivn. tekhnol. i novoye oborud. dlya proiz-va elektron. priborov (Progressive Technology and New Equipment for Production of Electronic Devices), Saratov, 1970, pp 92-94 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D321)

Translation: The authors investigate the possibility of producing vacuum-tight output apertures for optical instruments from polycrystalline zinc sulfide by the method of diffusion welding in a vacuum in the 750-850°C temperature range. As a preliminary step, a thermodynamic analysis is made of the possibility of chemical interaction in the system "ZnS-metals". In order to determine the stability of the resultant sulfides, an analysis is made of data on vapor pressure and dissociation pressure. Studies of the contact interactions of cylindrical specimens of iron, nickel, copper and stainless steel showed that these interactions take place only on the edges of the specimens, i. e. in regions where the gaseous reaction product can escape. The nature of contact interactions was studied during the production of the ceramic

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USSR

MUSIN, R. A., KAZAKOV, N. F., Progressivn. tekhnol. i novoye oborud. dlya proiz-va elektron. priborov, Saratov, 1970, pp 92-94

by hot pressing with simultaneous welding to the metal. This method assures interaction over the entire area of the specimen from the very beginning og the process as well as a comparatively narrow diffusion zone. The new method is used to produce vacuum tight joints of zinc sulfide with Armco iron and Kovar. The new technique can be used to make vacuum-tight aperture structures. A. K.

2/2

USSR UDC 547.794:543.51

YEFREMOV, YU. YA., MUSIN, R. Z., FUDOVIK, M. A., and KIBARDINA, L. K., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, USSR Academy of Sciences, Kazan

"Mass Spectra of Some 1,3,2-Oxazaphospholines"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 7, 1973, pp 894-897

Abstract: Mass spectra of 1,3,2-oxazophospholanes made it possible to determine the pathways of dissociative ionization from the intensity of m/e lines. Intensity of the m/e = M line decreased with an increase in the number of C atoms in the alkoxy radical. Dissociative ionization involved breaking of C-C and P-O bonds in the ring and loss of R'CHO from the molecular ion. The olefin molecule was primarily formed from the alkoxy group. Loss of the alkoxy group was the most likely process of dissociative ionization of the molecular ion; in the case of the 2-chloro derivative it was the loss of the Cl atom.

USSR

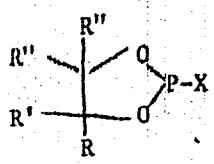
UDC 543.51:547.72:546.183

YEFREMOV, Yu. Ya., MUSIN, R. Z., GURARIY, L. I., and MUKMENEV, E. T., Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Academy of Sciences USSR, Kazan'

"Mass S ectrometric Analysis of Some Five-Membered Phosphite Rings"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 10, 1972, pp 1329-1330

Abstract: The 1,3,2-dioxaphospholanes of the following type were studied



For a compound A, R = R' = R" = H, X - OC_2H_5; for B, R = CH_3, R' = R" = H, X = OC_2H_5; for C, R = R' = R" = CH_3 X = OC_2H_5; for D, R = R' = R" = H, X = OC_6H_5; and E, R = R' = R" = H, X = Cl. The parent peak M^+ comprised from 2.8% for B to 11:00% for D of the total peak areas. The $(M - 2\%)^+$ peak from the loss of C_2H_4 from the ethoxy group was 10% for A, a few %

USSR

YEFREMOV, Yu. Ya., et al., Khimiya Geterotsiklicheskikh Soyedineniy, No 10, 1972, pp 1329-1330

for B and C, and negligable for D & E (the latter not containing the $-OC_2H_5$ group). The $(M-45)^+$ peak, i.e., loss of $-OC_2H_5$, for A, B, & C, has a value similar to the $(M-28)^+$ peak. Decreasing the number of methyl groups increases the stability of the ions where X represents an electron or X = OH. Loss of the "X" group and loss of the alkyl part of the alkoxy group appear to be the main dissociation reactions of these compounds.

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USSR

UDC 547.26'118:541.49

KURAMSHIN, I. Ya., MURATOVA, A. A., YARKOVA, E. G., MUSINA, A. A., IZMAYLOVA, F. Kh., and PUDOVIK, A. N., Kazan' State University imeni V. I. Ul'yanov-Lenin

"S-Alkyl Esters of the Thio- and Dithioacids of Phosphorus (IV) and Their Complexes With Tin"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 7, Jul 73, pp 1456-1466

Abstract: A series of thio- and dithioesters of thiophosphoric and thio- and dithiophosphinic acids was synthesized and characterized. Their IR and NMR spectra were studied. It was shown that the conformational isomerism in S-methyldialkylthio- and dithiophosphinates is caused by the P-C bond rotation. Complexes of S-alkylthiophosphates and thiophosphinates with tin tetra- and alkylhalides were obtained. Their IR and NMR spectra were studied. It was shown that in solutions the complexes $[R_2P(O)(SCH_3)]_2SnX_4$ exist as mixtures of geometrical isomers. It was shown that with coordination, a redistribution of the electronic density of the P-S bond takes place on account of the inductive and mesomeric effects. Both in the free state and as complexes the thioesters $R_2P(O)(SR')$ exhibit conformational isomerism. Based on the IR and NMR data, the electron donor ability of S-methyldialkyldithiophosphinates in relationship to tin halides was analyzed.

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(2)

USSR

UDC 547.26'118:541.49

MURATOVA, A. A., YARKOVA, E. G., PLEKHOV, V. P., SAFIULLINA, N. R., MUSINA, A. A., and PUDOVIK, A. N., Kazan' State University Imeni V. I. Ul'yanov-Lenin

"Stereoisomers of Partial Esters of Phenylphosphonous Acid and Their Complexes With Stannic Chloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 8, Aug 73, pp 1692-1696

Abstract: Complexes of partial esters of phenylphosphonous acid with stannic chloride were synthesized yielding $[(RO)C_6H_5P(O)H]_2 \cdot SnCl_4$ where R - methyl, ethyl, n-propyl, iso-propyl, and n-butyl. A detailed analysis of IR- and PMR- spectral data was carried out. It was proposed that the stereoisomerism of these complexes is due to different orientation of the phenyl ring plane in the phenylphosphonite with respect to the P-H bond.

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Organophosphorus Compounds

USSR

UDC 547.241:541.49

PUDOVIK, A. N., KURAMSHIN, I. YA., YARKOVA, E. G., MURATOVA, A. A., MUSINA, A. A., and MANAPOV, R. A., Kazan' State University imeni V. I. Ul'yanov-Lenin

"Study of the Reaction of Methyl Ester and Acid Chloride of Dimethylphosphinic Acid and Their Thione Analogues With Tin Halides"

Leningrad, Zhurnal Obshchey Khimii, Vol 43(105), No 6, Jun 73, pp 1229-1236

Abstract: Complexes of O-methyldimethylphosphinate and acid chloride of dimethylphosphinic acid with tin tetra- and alkyl halides have been obtained and characterized. Their IR, NMR, and MGR spectra have been studied, establishing that the coordination is due to the donor properties of the phosphoryl group oxygen. It has been shown that $\Delta\nu(P=O)/\nu_0(P=O)$ of the O-methyldimethylphosphinate and acid chloride of the dimethylphosphinic acid changes symbatically with $\Sigma\sigma^*$ of the substituents at the tin atom. A linear relationship has been established for the stannic chloride complexes with dimethylphosphinic acid between $\Delta\nu(P=O)/\nu_0(P=O)$ and $\Sigma\sigma_p$ of the substituents at the phosphorus atom. It has been shown that the thiophosphoryl sulfur has a lower donor ability than the phosphoryl oxygen. Geometrical structure of the obtained complexes has been discussed.

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USSR

UDC 547.26'118:541.49

YARKOVA, E. G., MUSINA, A. A., PLEKHOV, V. P., MURATOVA, A. A., and PUDOVIK, A. N., Kazan' State University imeni V. I. Ul'yanov-Lenin

"Electron Effect of an Acceptor on the Rotational Isomers of Certain Organophosphorus Ligands"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 11, Nov 1971, pp 2,576-2,577

Abstract: Infrared and paramagnetic resonance spectral data on several rotational isomers of organophosphorus ligands were obtained. Specifically, the complex $[(CH_3O)C_2H_5P(O)H]_2 \cdot SnCl_4$ exhibited the presence of the 1040, 1060, and 810, 823 cm^{-1} bands, instead of the two bands $\nu C{-}O$ (1030 and 1070 cm^{-1}) and $\nu P{-}O$ (790 and 805 cm^{-1}) in the spectrum of the methyl ester of ethylphosphonous acid, while unexpected doublets appeared in the p, resonance spectrum of the starting ester. The existence of complexes with several different isomers of the methyl ester of ethylphosphonous acid is suggested by the spectral data. Variation in the $^3J(P{-}O{-}C{-}H)$ constants suggests a mesomeric effect in the case of one isomer, owing to its favorable spatial location, with corresponding reduction in length of the P--O bond and a certain loosening of the O--C bond. Other structural effects are postulated.
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USSR

UDC 547.26'118:541.124

PUDOVIK, A. N., CHERKASOV, R. A., KUTYREV, G. A., SAMITOV, YU. YU., MUSINA, A. A., GOL'DFARB, E. I., Kazan' State University imeni V. I. Ul'yanov-Lenin, Kazan, Ministry of Higher and Secondary Specialized Education RSFSR

"Reactivity of Phosphorus Dithioacids in Reactions With Acrylonitrile"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, pp 1982-1988

Abstract: This paper is concerned with the effect of substituents A and B in phosphorus dithioacids of the type ABP(S)SH on reaction rates with 1,3-conjugated reagents such as acrylonitrile. It was shown by means of kinetic measurements and differential-thermal analysis that the reactivity of phosphorus dithioacids with acrylonitrile increases in the order dithiophosphinates, dithiophosphonates, and dithiophosphates. A linear correlation lg k to the total values of substituents $\sum\sigma_\phi$ was determined. Through the use of NMR (P31) spectroscopy, it was found that reactivity of

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USSR

PUDOVIK, A. N., et al, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, pp 1982-1988

dithioacids increases with increase in the total number of electrons in the d orbitals of the phosphorus atom. It was also determined that the dominant role of the effect of the substituent conjugation at the dithioacid phosphorus atom in the transitional state is determined by the reactivity of dithioacids of the phosphate and phosphonate structures.

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USSR

UDC 547.26'118

MURATOVA, A. A., YARKOVA, E. G., PLEKHOV, V. P., MUSINA, A. A., PUDOVIK, A. N., Kazan' State University imeni V. I. Ul'yanov-Lenin, Kazan, Ministry of Higher and Secondary Specialized Education RSFSR

"Study of the Complexes of Tin Halides With Incomplete Esters of Ethylphosphonous and Dialkylphosphinous Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, pp 1978-1982

Abstract: Complexes of tin tetrachloride, tetrabromide, and tetraiodide with methyl, ethyl, n-propyl, isopropyl, and n-butyl esters of ethylphosphonous acid and of tin tetrachloride with di-n-butyl, di-n-hexyl and di-n-octylphosphonous acids were synthesized and studied by IR spectroscopy. Comparison of the IR spectra of phosphonous and phosphinous acids and their complexes with tin tetrahalides in the range of 400-4000 cm^{-1} shows that the type of changes observed is analogous to spectral changes of the dialkylphosphorous acids and their complexes. Consequently, all of them participate in these complexes in their pentavalent state. It was

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MURATOVA, A. A., et al, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, pp 1978-1982

shown that the coordination bond is through the oxygen of the phosphoryl group. The P-H bond was found to be sensitive both to the changes in the structure of the addendum and towards the ability of tin halides to act as electron acceptors.

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UDC 547.26'118

NESTEROV, L. V., KESSEL', A. Ya., SAMITOV, Yu. Yu., MUSINA, A. A., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR, and Kazan State University imeni V. I. Ul'yanov Lenin

"Nucleophilicity of the Phosphoryl and Thiophosphoryl Groups"

Leningrad, Zhurnal Obshchei Khimii, Vol 40, No 6, Jun 70, pp 1237-1241

Abstract: A series of compounds of the form $CH_3P(S)XY$ was synthesized. All were alkylated by equivalent amounts of triethyloxonium borofluoride in methylene chloride. Their chemical shifts of the P-bonded methyl group protons exhibited a critical range beyond which no alkylation reaction took place. It was found that the methyl protons in the methylphosphonic acid derivatives are shielded more than those of the corresponding methylthiophonic acid derivatives, due to the greater tendency of the P-O bond to reverse coordination.

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USSR UDC: 681.121+551.571:665.61

GABDULLIN, T. G., YERMOSHIN, Yu. A., ZINATULLIN, F. L., MUSINA, R. G.

"A Depth Instrument for Simultaneous Measurement of Flowrate and Moisture Content"

Tr. Tatar. n.-i. i proyekt. in-t neft. prom-sti (Works. Tatar Scientific Research and Planning Institute of the Petroleum Industry), 1971, vyp. 20, pp 318-328 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 6, Jun 72, Abstract No 6.32.581)

Translation: It is shown that a combination instrument which provides for simultaneous measurement of discharge rate and moisture content in a water--petroleum mixture separately by strata is needed when determining the point of leakage into a well. A description is given of the device, the principle of action, and the results of laboratory and industrial tests of the combination instrument. The influence of principal factors on measurement results is determined on the basis of the laboratory tests, and a procedure is given for taking these factors into account when making deep measurements. Five illustrations, one table, bibliography of six titles.

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MUSINOV, E. A.

JPRS 56030
18 May 72

UDC 617-001.15-07:616.12-008.1-072.7

CARDIAC ACTIVITY CHANGES IN DOGS DURING ACUTE OVERHEATING AND THE PROGNOSTIC IMPORTANCE OF ELECTROCARDIOGRAPHIC DATA

Article by B. M. Fedorov, E. A. Musinov, V. V. Zhuravlev and V. P. Krotov; Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 6, No 2, March-April 1972, pp 32-38, submitted for publication 5 February 1971]

Abstract: Anesthesized dogs were exposed to acute overheating and their cardiovascular changes were examined in comparison with respiratory variations. The prognostic significance of the ECG ventricular spikes was noted during the period preceding the development of heat-induced collapse. The changes in the voltage of the ECG waves during acute overheating were shown to be associated with several factors, the most important of which were adrenergic effects during early heating and hypoxia during late heating periods. The paper describes the periods of overheating and the cardiac arrhythmia and discusses the cardiovascular disturbances accompanying hyperthermia.

During space flights acute overheating can arise in different situations, especially during emergency descents of biological satellites carrying experimental animals incapable of independently leaving the ship's cabin immediately after landing.

Man is subjected to overheating when working in hot shops, in closed cabins in the case of malfunctioning of heat-regulating systems, and also when performing considerable physical work in insulating suits and spacesuits.

The experimental investigation of overheating in human subjects yielded valuable information on tolerance to heat stresses and on the influence of hyperthermia on man's performance (B. Ye. Marshak and N. D. Rozenbaum; D. A. Shevelyukhin; A. A. Drodnitsina and Ye. Ya. Shepelev; Ye. Ya. Shepelev; S. M. Serpolinskiy, et al., and others). However, man's overheating in an experiment usually is stopped when he reaches the point of syncope; this limits

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UDC 541.13

KRYUCHENKOV, V. V., GUBAREVA, L. A., and MUSINOVA, V. S.

"Change in the Electrical Resistance and Determination of Electrical Conductivity by Ion Exchange Membranes Expanded in Water"

Moscow, Zhurnal Fizicheskoy Kimii, Vol 46, Vyp 4, 1972, pp 936-940

Abstract: The conductivity of expanded ion exchange membranes can be approximated by the equation

$$\gamma, \text{ ohm}^{-1}\ \text{cm}^{-1} = l/RS$$

where l is the distance between the electrodes, R is the measurable resistance of the membrane, and S is the surface area of the electrode. Two disadvantages are that this method assumes ideal conditions and that γ is a function of the resistance between the membrane and the electrodes. An instrument was designed such that the electrodes were in contact with the membrane. Equation (1) can be modified to the form

$$\gamma = l/(R-R_k)S = l/R_m S$$

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KRYUCHENKOV, V. V., GUBAREVA, L. A., and MUSINOVA, V. S., Zhurnal Fizicheskoy Kimii, Vol 46, Vyp 4, 1972, pp 936-940

where R_k is the resistance of the electrode-membrane contact and R_m is the actual resistance of the membrane. Schematics of the instrument are shown as are plots of the change in electrical resistance and thickness of two heterogeneous membranes of the KhK-14 type - one reinforced and the other unreinforced - as a function of electron potential.

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1/3 027 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DETERMINING THE MASS EVAPORATING DURING A METEOR FLARE -U-

AUTHOR-(02)-MUSIY, V.I., SHESTAKA, I.S.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, ASTRONOMICHESKIY VESTNIK, VOL 4, NO 2, 1970, PP 108-111

DATE PUBLISHED-------70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--EVAPORATION, METEOR, LUMINESCENCE, PHOTOMETRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1327 STEP NO--UR/0454/70/004/002/0108/0111

CIRC ACCESSION NO--AP0131771

UNCLASSIFIED

2/3 027 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0131771

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHOTOMETRIC MASS OF A METEOR BODY IS DETERMINED USING THE ESPRESSION SHOWN ON MICROFICHE, WHERE M IS THE MASS OF THE METEOR BODY CORRESPONDING TO THE TIME T SUBIN (INITIAL), T SUBFIN (FINAL) IS THE TIME OF METEOR DISAPPEARANCE, I IS METEUR BODY LUMINOSITY, T IS THE LUMINOSITY FACTOR, V IS VELOCITY. THE TIMES OF ONSET AND TERMINATION OF A FLARE ARE DENOTED T SUBINF, T SUBFINF. THE MASS EVAPORATING FROM THE METEOR BODY SURFACE DURING THE TIME FROM APPEARANCE OF THE METEOR TO ONSET OF THE FLARE IS DETERMINED USING FORMULA (1). ASSUMING V TO BE CONSTANT, THE MASS EVAPORATING DURING THE FLARE IS DETERMINED USING THE EXPRESSION SHOWN ON MICROFICHE, WHERE M SUBPI IS THE MASS EVAPORATING FROM THE SURFACE OF AN INDIVIDUAL FRAGMENT WHOSE LUMINOSITY IS I SUBPI. VELOCITY IS ASSUMED TO BE CONSTANT AND EQUAL TO THE METEOR BODY VELOCITY AT THE TIME T SUBFINF. THE DIMENSIONLESS FACTOR T SUB2 IS SUBPENDENT ONLY ON VELOCITY AND COMPOSITION OF THE FRAGMENT. PHOTOGRAPHIC OBSERVATIONS AT ODESSA ASTRONOMICAL OBSERVATORY WERE USED IN COMPUTING M PRIME SUBF EVAPORATING DURING FLARES. AS A COMPARISON THE MASSES PRIME PRIME SUBF WERE COMPUTED; THIS IS THE MASS EVAPORATING DURING FLARES ON THE ASSUMPTION THAT THE LUMINOSITY FACTOR T IS DETERMINED BY THE EXPRESSION T EQUALS T SUBO V; WHERE T SUBO EQUALS 5.02 TIMES 10 PRIME NEGATIVE10 CM PRIME NEGATIVE1; SEC;

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3/3 027 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0131771

ABSTRACT/EXTRACT--THE TABULATED DATA SHOW THAT THE MASSES OF MATTER EVAPORATED IN A FLARE, M PRIME SUBF AND M PRIME PRIME SUB., COMPUTED UNDER DIFFERENT ASSUMPTIONS CONCERNING THE LUMINOSITY FACTOR T, DIFFER BY A VALUE DELTA M SUBT EQUALS M PRIME SUBF-M PRIME PRIME SUBF, WHICH MUST BE INTRODUCED INTO THE EXTRA ATMOSPHERIC METEOR AND MASS M INFINITY. THE MAGNITUDE OF THIS CORRECTION IS SOMETIMES COMPARABLE WITH THE EXTRA ATMOSPHERIC METEOR MASS AND EVEN GREATER THAN IT, INDICATING THE NEED FOR A DEFFERENT APPROACH TO THE DETERMINATION OF PHOTOMETRIC MASSES OF "NORMAL" AND FLARE METEORS. THE MASS OF THE NONFLARE PART OF ANY METEOR HAVING A FLARE IS DETERMINED USING FORMULA (1), WHEREAS THE MASS EVAPORATING DURING THE FLARE IS DETERMINED USING FORMULA (2); FOR "NORMAL" METEORS THE ENTIRE MASS IS COMPUTED USING FORMULA (1). FACILITY: ODESSA ASTRONOMICAL OBSERVATORY.

UNCLASSIFIED

USSR UDC 621.791.756.011

ASNIS, A. YE., KASATKIN, B. S., IVASHCHENKO, G. A., and MUSIYACHENKO, V.F., Institute of Electric Welding imeni Ye. O. Paton

"Increasing Strength of Weld Joints Operating at Low Temperature"

Kiev, Avtomaticheskaya Svarka, No 6, Jun 71, pp 33-34

Abstract: One of the measures for increasing workability of weld joints at low temperature is the removal of stress concentrators. These stresses are most significant at points where the seam merges with the base metal. A smooth transition can be obtained using an electric arc furnace with a nonconsumable electrode. At the Institute of Electric Welding work was performed to explain the effect of electric-arc processing on the resistance of weld joints to brittle failure at low temperature. Tests were conducted using steel 14KhMNDFR where welded samples were subjected to a 300-ton force at -60°C. Seams in the initial state fractured along the weld seam; seams which had been mechanically cleaned failed in the seam itself; and seams which had been electric-arc treated failed in the base metal at some distance from the weld. Weld joints made in steels 09G2S and 10G2B which had been tempered at 650 and 550°C possessed a higher impact strength than those seams which had not been heat treated. Thus it was concluded that local electric-arc treatment is an effective method of increasing the workability of joints at low temperature. 2 figures, 3 tables.

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USSR UDC 621.791:693.8:669.15-191

KASATKIN, B. S., MINEYEV, E. A., MUSIYACHENKO, V. F., and MIKHODUY, L. I., Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences UkrSSR

"Certain Fewtures of the Design and Manufacture of High-Strength Welded Constructions"

Kiev, Avtomaticheskaya Svarka, No 9, Sep 70, pp 32-34

Abstract: Basic types of welded joints and assemblies for high-strength steel structures, e.g., skips for hauling coal, are considered. Sketches of welded joints and assemblies made of St 3 and 14Kh2GMR steels are shown. An analysis is made of construction mistakes, and recommendations are made to avoid their repetition. Fifteen skips manufactured from 14Kh2GMR steel are being used successfully in the Donbass mines. Skip weight has been reduced by 28 to 35%.

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USSR UDC 621.791.756.856:669.15-194

KASATKIN, B. S., MUSIYACHENKO, V. F., MIKHODUY, L. I., Electric Welding Institute imeni Ye. O. Paton and BULGAKOV, A. S., Uralmashzavod imeni S. Ordzhonikidze

"Welding Low-Alloy, Highly Durable Steels 14Kh2GMR and 14KhMNDFR"

Kiev, Avtomaticheskaya Svarka, No 6, Jun 70, pp 39-42

Abstract: The steels referred to in the title 14Kh2GMR and 14KhMNDFR were designed for various types of welded structures: bridges, high-pressure vessels, storage tanks, hydraulic equipment, transport lifting mechanisms, trucks, railroad cisterns, and the like. The purpose of the article is to recommend rational choices of welding materials, welding modes, and special technical operations to guarantee that a union of the two metals will have the same durability of the basic metals and that it will be sufficiently resistant to cold. The following welding features are discussed: electrodes, flux and wire, measures for preventing crack formation and welding modes. Illustrations include a drawing showing tests for determining the tendency of welding seams to crack, a schematic of a pneumatic tensometer for determining transverse specimen deformations, and a diagram of transverse deformations in 14Kh2GMR steel during and after welding. A table of recommended preliminary heating temperatures for the two types of steel mentioned in the title is included.

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USSR UDC 632.954:581.176

MIKHNO, A. N., MUSIYAKA, V. K., and KALININ, F. L., Institute of Plant Physiology, Academy of Sciences Ukrainian SSR

"The Character of Histological Disturbances Caused by the Herbicide Tordon 22K in Active Growth Zones of Peas"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 6, 1972, pp 50-53

Abstract: To determine the exact effects of the herbicide, seeds of the pea Ramonskiy 77 were sprouted on filter paper, then planted in Petri dishes when root length reached 2 cm, in a solution of tordon. Concentrations were .000006, .000008 and .0001%, which correspond to the amounts required to suppress root length growth by 25, 50, and 100%. Specimens were secured after 6, 12, and 24 hours, preserved in paraffin and dissected to a thickness of 10 microns, then dyed first with hematoxylin, then with 1% eosin. It was determined that the herbicide had a different effect on various longitudinal cells of root tissues: cells of the skin and the xylem increased in size, while those of the phloem decreased. After herbicide treatment a significant isodiametric stretching was observed in the elongation zone cells. During sharp suppression of root growth this could lead to rupture of the cell wall. The herbicide activated cell division primarily in the tangental and

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APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202120020-0"

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MIKHNO, A. N., et al., Khimiya v Sel'skom Khozyaystve, Vol 10, No 6, 1972, pp 50-53

radial planes, which caused an anomalous expansion of the root in width and lessened its growth in length.

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Acc. Nr: AP0047380 Abstracting Service: GEOPHYSICAL ABST. 5/10 Ref. Code: 21R0065

91956s Comparison of the results of determination of the color of petroleum products on KN-51 and FEKN-56 instruments. Butrim, S. N.; Glebova, A. P.; Ivanyuk, G. E.; Musiyaka, V. V.; Rogozhkin, P. A. (Volgograd Filial SKB AN SSSR, Volgograd, USSR). *Khim. Tekhnol. Topl. Masel* 1970, 15(1), 57-8 (Russ). The precision obtained with the app. FEKN-56 was 5 times as great as that of KN-51 when detg. the color of refined oil. The relation between the results obtained with the 2 app. was expressed by the linear equation $y = 5.6 + 0.15x$, where x is the result obtained with the app. FEKN-56 and y that with the app. KN-51. The reproducibility errors for the 2 app. are tabulated. The equation is graphically presented. GGJR

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UDC 621.791.753.042.4:669.018.45:539.434

LOZITSKIY, L. P., Doctor of Technical Sciences, BEREZIEV, V. F., Engineer, IVANENKO, A. A., Candidate of Technical Sciences, KOROLEVA, Z. G., Candidate of Technical Sciences, MUSIYENKO, B. I., Engineer, and MOLOCHKOV, M. A., Candidate of Technical Sciences, Kiev Institute of Civil Aviation Engineers

"Thermal Fatigue Resistance of Welded Joints of EP99 Alloy Performed with Electrodes of Different Marks" (Reported at the All-Union Conference "Estimate of the Supporting Power of Materials and Welded Joints According to Breakdown Mechanics," Kiev, Dec 72)

Kiev, Avtomaticheskaya Svarka, No 1(250), Jan 74, pp 39-42

Abstract: An experimental study was made of the effects of heating temperature and thermal cycling on the depth of thermal fatigue cracks and the mechanical properties of welded joints of EP99 alloy welded with NIAT-8 and NIAT-7 electrodes. The parameters characterizing the injuriousness of the specimens in the process of thermal fatigue tests are the depth of cracks, their growing rate, and changes in residual strength, plasticity, and structure. The results are discussed by reference to diagrams showing the depth of crack dependence on maximum cycling temperature and on the quantity of thermal

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LOZITSKIY, I. P., et al., Avtomaticheskaya Svarka, No 1(250), Jan 74, pp 39-42

cycling and the residual strength and relative narrowing dependences on the maximum temperature after 2000 heat cycles. Specimens welded with NIAT-8 electrodes possessed higher thermal fatigue strength in comparison with specimens welded with NIAT-7 electrodes. The increased Cr content (up to 21%) of the joint welded with the NIAT-7 electrode resulted in decreased thermal fatigue strength of the welded specimen. Four figures, two tables, two bibliographic references.

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USSR

Biophysics

UDC 591.882

BERESTOVSKIY, G. N., LUNEVSKIY, V. Z., MUSIYENKO, V. S., POPOVA, S. V., RAZHIN, V.D., Laboratory of Biophysics of Living Structures, Institute of Biological Physics, Academy of Sciences USSR, Pushchino-na-Oke

"Study of the Cumulative Structural Changes in a Nerve Fiber During Rhythmic Stimulation Using Optical Techniques"

Leningrad, Tsitologiya, Vol 14, No 12, 1972, pp 1,461-1,467

Abstract: Optical techniques (birefringence, ultraviolet absorption, light dispersion) were used to study the structural and physical-chemical changes in nerve fiber accumulated during rhythmic activation of it. The studies were made on the giant axons of the squid and the ventral nerve cord of crayfish. The quantitative analysis of the experimental results led to the following conclusions: in practice there are no cumulative changes in the degree of orientation of the macromolecular structures in the axoplasm, including the gel-sol transition even as a result of transmission of several thousands of pulses through the nerve; although conformational changes take place in the proteins of the entire axoplasm 20 milliseconds after generation of a single action potential, they are expressed two orders more weakly than in the case of denaturation; the results of the light dispersion experiments agree with the

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BERESTOVSKIY, G. N., et al., Tsitologiya, Vol 14, No 12, 1972, pp 1,461-1,467

published data. In addition to the primary purpose of studying the role of the axoplasm during the excitation process, the described experiments permit the determination of possible artifacts when studying the structural changes in the membrane from a single action potential by the given optical methods.

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Acc. Nr.: AP0041176

USSR

Ref. Code: 460029

MUSLIN, Ye., Engineer

"Everything Starts with Casting"

Moscow, Tekhnika Molodezhi, No 1, 1970, pp 52-55

Abstract: This article deals with the latest developments in the field of casting, in the USSR and abroad. In the USSR, an induction pump has been developed for pumping liquid metal through pipes, through motivation by a moving electromagnetic field. For pumping molten rock, a Soviet-developed method provides for pumping a stream of air mixed with combustible gases, to maintain the temperature of the molten mass. In work with foam plastic molds, a Soviet-hardening liquids, used in recovery of styrol by means of distillation. Self-hardening liquids, used in molding, originated in the Soviet Union and are being produced under license in several non-Soviet countries. To make up for the lack of viscosity for the molten metal, which limits the size of castings, Soviet inventors has designed an expansible chill mold, consisting

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of two halves fastened by an axle, the two halves being brought together when the mold has been filled. Much smaller castings can thus be made. Other molding developments are also mentioned. For removing scale from the casting, an electrohydraulic effect is being successfully used. Sparks are discharged between two electrodes, submerged in water. Each discharge is accompanied by a hydraulic shock attaining several tens of thousands of atmospheres. In Leningrad, rare and high-grade alloys are being cast in a suspended state, the metal spheres being suspended in a vacuum by a magnetic field. An American inventor has developed a method for drawing wire from molten metal by means of a compressed inert gas. English engineers has recently started to cast glass on the surface of molten metal, obtaining flat, polished castings. Soviet engineers have improved on this by creating waves in the molten metal by means of travelling magnetic fields, and casting the glass on top of them, thus obtaining an desired pattern of ripples. Proposals have been made for constructing casting shops in outer space, where drops of molten metal under conditions of weightlessness would assume an ideal spherical shape. This article is accompanied by a pictorial diagram illustrating the enumerated processes.

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USSR

UDC 542.91:547.1'118

ARBUZOV, B. A., MUSLINKIN, A. A., VIZEL', A. O., KOVALENKO, V. I., VYRINA, N. N., and KAPUSTINA, N. M., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Phospholene Glycolacrylates and Some of Their α-Substituted Analogs"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 8, Aug 73, pp 1828-1833

Abstract: Experimental results are reported on the synthesis of new acrylic derivatives containing organophosphoric heteroring -- phospholeneglycolacrylates and some of their α-substituted analogs. These products were obtained by reacting 1-chloro-1-oxophospholenes with glycolmonoacrylate and α-substituted acrylates in inert organic solvents, in presence of triethylamine as an acceptor of HCl. Several synthetic routes have been proposed for the synthesis of phospholeneglycol-α-fluoroacrylates.

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UDC 542.91:547.1'118

MUSLINKIN, A. A., NEKLESOVA, I. D., KUDRINA, M. A., YEGOROVA, N. V., IRAIDOVA, I. S., and LOGINOV, V. B., Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Acad. Sc. USSR

"Synthesis and Some Properties of Acrylic and Methacrylic Derivatives of Chlorophos and Its Analogues"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 73, pp 883-886

Abstract: Reaction of chlorophos and its analogues with acid chlorides of acrylic, metacrylic and α-fluoroacrylic acids gave new products with fungicidal activity: 0,0-diphenyl-, 0,0-di-n-butyl-, and 0,0-dimethyl-(1-acroyloxy-2,2,2-trichloroethyl)phosphonate, di-n-butyl-(1-metacryloxy-2,2,2-trichloroethyl) phosphonate and 0,0-d-n-butyl-(1- α-fluoroacroyloxy-2,2,2-trichloroethyl) phosphonate. Using 0,0-di-methyl ether of 1-acetoxy-2,2,2-trichloroethylphosphonic acid as control, it has been established that replacement of the acetyl group by an acroyl or metacroyl radical increases the fungicidal activity and toxicity. Introduction of a chlorine atom onto an alkoxy group has a similar effect. Elongation of an alkoxy chain at the phosphorus atom decreases the toxicity.

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Polymers and Polymerization

USSR

UDC 54-171:541.64+661.718.1

BYL'YEV, V. A., LAPIN, M. S., and MUSLINKIN, A. A., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Comparative Thermostability of Polymers of Acrylic and Some α-Substituted Acrylic Derivatives of Triphenylphosphine Oxide"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 8, Aug 71, pp 1801-1803

Abstract: The article describes results of a comparative estimate of the thermostability of polymers of acrylic, methacrylic and α-fluoroacrylic derivatives of triphenylphosphine oxide with allowance for the effect of isomerism in the structure of the initial monomers on the kinetics of polymer thermal decomposition. A comparison of polymers based on p-isomers and polyphenyl methacrylate indicates that thermal degradation of phosphorus-containing polymers proceeds more slowly and encompasses the higher temperature region, with poly-p-fluoroacroylhydroxyphenyldiphenylphosphine oxide showing the least thermostability. A comparison of the character of the thermal and thermooxidizing decomposition of polymers based on o-, m- and p-isomers of α-fluoroacroylhydroxyphenyldiphenylphosphine oxide shows that the decomposition of the o-derivative polymer proceeds at a lower temperature than for p- and m-derivative polymers.

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USSR

UDC 542.91:661.718.1

NAZAROV, Yu. V., MUSLINKIN, A. A., and ZHELTUKHIN, V. F., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Interaction of Bis-(hydroxymethyl)phosphinic Acid With Phosphorus Pentachloride"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 8, Aug 71, pp 1806-1808

Abstract: The article describes results of a study of the reaction of bis-(hydroxymethyl)phosphinic acid with phosphorus pentachloride in a phosphorus oxychloride medium at temperatures from 60 to 100°. It was found that the yield of bis-(chloromethyl)phosphinic chloride, other conditions being equal, decreases with a rise in the reaction temperature, while the yield of chloromethylphosphonic dichloride and methyl chloride increases, with the amount of methyl chloride which forms increasing almost proportionally to the chloromethylphosphonic chloride yield. The formation of the latter two products indicates the presence of processes leading to splitting of the P-C bond.
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1/2 030 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--DEHYDROGENATION AND CROSSLINKING OF SATURATED POLYMERS -U-

AUTHOR-(04)-BERLIN, A.A., LIOGONKIY, B.I., MATNISHYAN, A.A., MUSOELYAN, I.N.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,438
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTRON ACCEPTOR, CHEMICAL PATENT, POLYMER, DEHYDROGENATION, POLYMER CROSSLINKING, QUINONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1764 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0137004
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--04DEC70

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CIRC ACCESSION NO--AA0137004

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SATD. POLYMERS ARE DEHYDROGENATED AND CROSSLINKED WITH QUINONES TO WHICH HAVE BEEN ADDED A SUBSTANCE THAT IS A STRONGER ELECTRON ACCEPTOR THAN THE CORRESPONDING QUINONE, SUCH AS TETRACYANOBENZENE, TETRACYANOETHYLENE, DINITROPHENOL, A HALOSUBSTITUTED QUINONE, AND K BICHROMATE. FACILITY: INSTITUT KHIMICHESKOY FIZIKI AN SSSR.

UNCLASSIFIED

UDC 51:621.391

USSR

SUVOROV, B. V., MUSOLIN, A. K.

"Compression of Measurement Information"

Tr. Ryazan. Radiotekhn. In-ta [Works of Ryazan' Radio Engineering Institute], No 24, 1970, pp 221-229, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V648 by Yu. Pyatoshin).

Translation: Some general problems of reduction of redundant information in a transmitted message are discussed.

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UDC: 621.376.43

USSR

MUSONOV, V. M. and MOROZOV, Ye. N.

"Relative Phase Modulation Demodulator of the Kostas Type"

V sb. Tonkiye magnitn. plenki, vychisl. tekhn. i radiotekhn., T. 1 (Thin Magnetic Films, Computer Techniques, Electronic Engineering, Vol. 1--collection of works) Krasnoyarsk, 1970, pp 94-99 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3D38)

Translation: The Kostas coherent receiver circuit using phase automatic frequency control with delay is considered; a controlled oscillator is used as the local oscillator in the second frequency converter. The search time and the reliability characteristic are determined. Bibliography of three. N. S.

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1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--DISPLACEMENT OF DRILLING MUD FROM AN ANNULAR SPACE BY A POLYMER CEMENT MIXTURE -U-

AUTHOR-(03)-MUSTAFAYEV, A.D., MUKHMUDOV, M.N., TAGIYEV, YU.B.

COUNTRY OF INFO--USSR

SOURCE--AZERB. NEFT. KHOZ. 1970, (2), 18-20

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--WELL DRILLING MACHINERY, MUD, CEMENT, POLYMER, DRILLING MUD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0142 STEP NO--UR/0048T/70/000/002/0018/0020

CIRC ACCESSION NO--AP0129398

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129398

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A POLYMER CEMENT MIXT. (COMPOSED OF A LIQ. POLYMER AND CEMENT MORTAR (A. D. MUSTAFAEV, 1968)) IS PROPOSED FOR THE DISPLACEMENT OF DRILLING MUD FROM THE ANNULAR SPACE AND REINFORCEMENT OF OIL AND GAS WELLS.

UNCLASSIFIED

Publications

UDC 636.619

USSR

SHISHKOV, V. Ye., BESSMERTNYKH, A. A., and MUSTAFAYEV, G. A.

Profilaktika i Likvidatsiya Yashchura (Prophylaxis and Eradication of Foot-and-Mouth Disease), Moscow, Rossel'khozizdat," 1971, 64 pp

Translation:

1/1

UDC 616.988.43

USSR

SALAZHOV, Ye. L., KOSTERIN, Ye. V., MUSTAFAYEV, G. A., and LEBEDENKO, L. A., All-Union Institute of Experimental Veterinary Medicine

"Foot-and-Mouth Disease in Man"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 47, No 6, Jun 70, pp 87-90

Abstract: Two cases of foot-and-mouth disease in man were studied in Kostromskaya oblast in order to obtain data on the subtype (variant) of foot-and-mouth disease virus affecting man. Not much is known about the serum antibodies in patients suffering from the disease. In both cases, the same type and variant of the virus, A_{22}, was responsible for the disease. Antibodies to this virus variant were found in the blood of both patients. These were the only two cases reported in humans in the oblast. Extensive measures to control the disease among domesticated animals and people were taken.

1/1

UNCLASSIFIED PROCESSING DATE--04DEC70

1/2 018

TITLE--FOOT AND MOUTH DISEASE IN MAN -U-

AUTHOR-(04)-SALAZHOV, YE.L., KOSTERIN, YE.V., MUSTAFAYEV, G.A., LEBEDENKO, L.A.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 6, PP 87-90

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FOOT AND MOUTH DISEASE, GEOGRAPHIC LOCATION, MAN, DIAGNOSTIC MEDICINE, ANTIBODY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0419 STEP NO--UR/0016/70/000/006/0087/0090

CIRC ACCESSION NO--AP0126172

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--04DEC70

2/2 018
CIRC ACCESSION NO--AP0126172
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO CASES OF FOOT AND MOUTH DISEASE WERE DIAGNOSED IN 1967 IN KOSTROMA REGION. THE DIAGNOSIS WAS MADE ON THE BASIS OF EPIZOOTIC, ANAMNESTIC AND CLINICAL DATA. SICK ANIMALS SERVED AS THE SOURCE ON INFECTION: IN ONE CASE INFECTION WAS TRANSMITTED THROUGH MILK FROM A COW, AND IN ANOTHER, BY CONTACT WITH INFECTED ANIMAL. FOOT AND MOUTH DISEASE WAS DIAGNOSED BY EXAMINATION OF MATERIAL OBTAINED FROM SICK ANIMALS AND ONE OF THE PATIENTS; IN ALL OF THE CASES THE DISEASE PROVED TO BE CAUSED BY THE VIRUS BELONGING TO THE SAME TYPE AND OF THE SAME VARIANT, A SU822, AGAINST WHICH ANTIBODIES WERE REVEALED IN THE BLOOD SERUM OF THE PATIENTS. FACILITY:
VSESOYUZNYY INSTITUT EKSPERIMENTAL'NYY VETERINARII.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--13NOV70

1/2 026

TITLE--ANISOTROPY OF DUCTILITY IN CONTINUOUSLY CAST SHEET STEEL -U-

AUTHOR-(03)-OSTREYKO, I.A., MEDVEDEV, A.N., MUSTAFAYEV, I.A.

COUNTRY OF INFO--USSR

SOURCE--IZVEST. V.U.Z., CHERNAYA MET., 1970, (1), 72-74

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--STEEL SHEET, DUCTILITY, SHEET METAL, MANGANESE CONTAINING ALLOY, CONTINUOUS CASTING, ANISOTROPY, METAL ROLLING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0553 STEP NO--UR/0148/70/000/002/0072/0074

CIRC ACCESSION NO--AP0124248
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--13NOV70

2/2 026
CIRC ACCESSION NO--AP0124248
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ANISOTROPY CHARACTERIZING THE DUCTILITY OF SHEET STEEL OBTAINED BY CONTINUOUS CASTING IS DISCUSSED ON THE BASIS OF A MATHEMATICAL REGRESSION ANALYSIS AND CORRELATED WITH THE MN CONTENT, THE ROLLING TEMP., AND THE METHOD OF HANDLING THE STEEL AFTER ROLLING. THE ANISOTROPY IS GREATEST WHEN THE TEMP. AT THE END OF THE ROLLING OPERATION IS 880DEGREESC AND THE RESULTANT MATERIAL IS WOUND INTO REELS AT 600DEGREESC. CAREFUL ATTENTION TO MN CONTENT IS REQUIRED IN ORDER TO ENSURE ADEQUATE DUCTILITY.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--27NOV70

1/2 024

TITLE--MOLECULAR WEIGHTS AND MOLECULAR WEIGHT DISTRIBUTION OF THE PRODUCTS OF SPONTANEOUS POLYMERIZATION OF QUATERNARY SALTS OF 4,VINYLPYRIDINE AND

AUTHOR-(03)-MUSTAFAYEV, M.I., ALIYEV, K.V., KABANOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(4), 855-64

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MOLECULAR WEIGHT, VINYL COMPOUND, PYRIDINE, BROMINATED ORGANIC COMPOUND, KINETIC THEORY, MONOMER, POLYMERIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1496 STEP NO--UR/0459/70/012/004/0855/0864

CIRC ACCESSION NO--AP0135157

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--27NOV70

2/2 024
CIRC ACCESSION NO--AP0135157
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MOL. WT. DISTRIBUTION OF POLY(VINYLPYRIDINIUM ETHYL BROMIDE) (I) OBEYS THE KINETIC THEORY PROPOSED EARLIER (V. A. KARGIN ET AL. 1965, 1966, 1968) AT LESS THAN OR EQUAL TO 0.1 MONOMER FRACTION CONVERSION. HOWEVER, AT HIGHER CONVERSIONS THERE IS NO AGREEMENT BETWEEN THE EXPTL. RESULTS, OBTAINED BY ULTRACENTRIFUGING, AND THE THEORY. THE DISAGREEMENT IS PARTIALLY DUE TO THE INSOLY. OF I AND THE GROWTH OF THE LIVING POLYMER CHAINS, WHICH WERE NOT TAKEN INTO ACCOUNT IN THE ORIGINAL THEORY.
FACILITY: INST. NEFTEKHIM. SIN. IM. TOPCHIEVA, MOSCOW, USSR.

UNCLASSIFIED

UDC 536.2

USSR

MUSTAFAYEV, R. A., PLATUNOV, Ye. S., Leningrad Institute of Precision Mechanics and Optics

"Nonstationary Method for Measuring Heat Conductivity of Liquids and Gases at High Pressures"

Moscow, Teplofizika vysokikh temperatur, No. 3, May/Jun 72, pp 615-621

Abstract: Nonstationary methods of linear and nonotonic heating as methods for measuring the heat conductivity of liquids and gases are discussed since they can determine the temperature dependence of the heat conductivity over a wide temperature range from a single experiment within a relatively short time period. Simple versions of the λ-calorimeter for monotonic heating of liquids proposed by O. A. Krayev in 1960 are examined in particular. An examination of the theoretical basis of the method shows that it is based on the nonlinear theory of heat conductivity and that it is useful for measurements in zones of a sharp change in the thermophysical parameters. A diagram of the proposed λ-calorimeter is shown. The device consists of a hollow metal block and a continuous copper core installed coaxially. The annular gap between them has a constant thickness h and is filled with the substance being tested. A uniformly distributed electric

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USSR

MUSTAFAYEV, R. A., PLATUNOV, Ye. S., Teplofizika vysokikh temperatur, No. 3, May/Jun 72, pp 615-621

heater is on the surface of the block. An efficient light-weight insulation is used to protect the calorimeter from the medium. Relationships are obtained for developing the optimal structure of the calorimeter unit. The method was checked experimentally in the temperature range 20-400°C at pressures of up to 500 bar. Air, water, water vapor, n-heptane, and n-decane were used as samples. Deviations from tabular curves were no more than 2% over the entire range of working temperatures and pressures. The experiments supported the suitability of the method for studies in zones of a sharp change in the thermophysical parameters of the substance, including direct proximity to the liquid-vapor transition point.

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1/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--ALKYLATION OF TOLUENE BY EPICHLOROHYDRIN IN THE PRESENCE OF ALUMINUM CHLORIDE -U-

AUTHOR-(03)-SADYKHZADE, S.I., KURBANOV, S.B., MUSTAFAYEV, R.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(5), 989-91

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALKYLATION, TOLUENE, EPICHLOROHYDRIN, ALUMINUM CHLORIDE, ISOMER, IR SPECTRUM, DICARBOXYLIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1341 STEP NO--UR/0366/70/006/005/0989/0991

CIRC ACCESSION NO--AP0135015

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0135015

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE REACTION GIVES 60-5:20-5:15-20 MIXT. OF O-MEC SUB6 H SUB4 CH SUB2 CH(OH)CH SUB2 OH (I), M-I ISOMER, AND P-I ISOMER. THE DISTRIBUTION OF THE ISOMERS WAS ESTABLISHED BY THE OXIDN. OF THE ISOMER MIXT. TO THE CORRESPONDING DICARBOXYLIC ACIDS, WHICH WERE SEPD. AND IDENTIFIED. THE RESULTS WERE CONFIRMED BY IR SPECTROSCOPY. FACILITY: SUMGAIT. FIZ. INST. NEFTEKHIM. PROTSESSOV, SUMGAIT, USSR.

UNCLASSIFIED

USSR UDC 536.2

MUSTAFAYEV, R. A., KURETIN, V. V.

"Dynamic Method of Measurement of Heat Capacity of Liquids at High Pressures and Temperatures"

Moscow, Teplofizika Vysokikh Temperatur, Vol 11, No 1, Jan-Feb 73, pp 144-149.

Abstract: A method is presented for measurement of the true heat capacity of liquids at high temperatures and pressures in the mode of smooth heating. The method of experimental determination of the "constants" of the device is described. The method is used at temperatures of up to 400° C, pressures up to 500 atm. The calorimetric device which realizes the dynamic method described in this work, called a dynamic C-calorimeter, consists of a massive metal tube, containing a metal ampule, filled with the fluid being studied. The calorimetric device is heated smoothly by means of a heater distributed evenly over the outer surface of the tube. The calculation formula for the true heat conductivity is produced from the equation for the thermal balance of the calorimetric device. The method can utilize two different plans for temperature measurement. In the first, the temperature drop is measured directly by a differential thermocouple, and the heating rate is calculated as the ratio of small increments. In the other, the delay time between the