USSR

UDC 632.95

YEVREYEV, V. N., KOTLYAR, G. A., KLIMOVA, L. K., MIZYUKOVA, I. G., and PETRUN'KIN, V. Ye., All-Union Institute of Hygiene and Toxicology of Pesticides, Polymers, and Plastics

"A Method of Obtaining Trivalent Cobalt Compounds with Diethanolamine"

USSR Author's Certificate No 356322 published 23 Jan 73 (from RZh-Khimiya, No 22, 25 Nov 73, Abstract No 22N569 by T. Ya. Ogibina)

Translation: Compounds with the formula $Co[NH(C_2H_4O)_2NH(C_2H_4O)\cdot(C_2H_4OH)]$ (I) and active as pesticides are obtained by splitting (with an alkaline agent) binuclear complexes containing bi- and trivalent Co in the ratio of 1:1 like $Co_2NH(C_2H_4OH)_2[NH(C_2H_4O_2]_2X$ (II) or $Co_2[NH(C_2H_4O)_2]_2X$ (III) (X = Cl). Example. 10 ml of water and 0.1 mole of an NaOH solution in 20 ml of water are added to 0.01 mole of II hydroxide. The mixture is filtered and the filtrate evaporated over $CaCl_2$ and 10 days later I, $C_8H_{18}N_2O_4Co\cdot 9H_2O$ is isolated, yield 60%. I is obtained with a yield of 72% by splitting $III\cdot 4H_2O$ under the same conditions.

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USSR

UDC 621.5:669.71

LITVINTSEV, A. I., IVASHKO, K. V., and KLIMOVA, L. N., Kuybyshev

"Microstructural Changes in Particles of AFS-1, 2, 3 Industrial Aluminum Powders During Annealing"

Kiev, Porcshkovaya Metallurgiya, No 11, Nov 70, pp 10-15

Abstract: A study is made of microstructural changes which take place in individual nodulized particles of industrial aluminum powders after annealing at 550, 600, and 700°C with a holding time of 1 hr. AFS-1, 2, 3 industrial aluminum powders with aluminum oxide contents of 7, 11.8 and 15%, respectively, were used. It is shown that during annealing of the powders in air and argon media the nodulized particles split and internal porosity appears. In addition to oxidation, the growth of small crystals γ-Al_2O_3 takes place in aluminum powder during heating in air at 600 and 650°C. During heating in argon medium oxidation occurs due to the interaction of the moisture of the hydroxide phase with aluminum. The resultant modification of aluminum oxide remains in a dispersed state. The process of disintegration of modulized particles is determined by the internal sources of degassing, which are fragments of hydroxide boundaries making up the conglomerate of nodulized particles.

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1/3 017 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--STRUCTURAL FEATURES OF SILICON SINGLE CRYSTALS STRONGLY DOPED WITH ARSENIC -U-
AUTHOR-(04)-GRISHINA, S.P., KLIMOVA, N.M., OSYENSKIY, V.B., MILVIDSKIY, M.G.
COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2) 193-5

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--SILICON SINGLE CRYSTAL, DOPED ALLOY, ARSENIC CONTAINING ALLOY, SOLID SOLUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0821 STEP NO--UR/0363/70/006/002/0193/0195

CIRC ACCESSION NO--AP0118002
UNCLASSIFIED

2/3 017 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0118002
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ELECTRONMICROSCOPE STUDY WAS MADE OF THE STRUCTURE OF SI SINGLE CRYSTALS DOPED WITH AS TO A CONCN. OF 5 TIMES 10 PRIME20-CM PRIME3. THE CRYSTALS WERE GROWN BY THE CZOCHRALSKI TECHNIQUE IN THE MEAN VALUE OF 111 DIRECTION. THE SAMPLES WERE SECTIONED BOTH IN TRANSVERSE AND IN LONGITUDINAL CROSS SECTION, COINCIDING WITH THE (110) PLANE. ELECTRON REPLICATION AND THIN FILM ELECTRON TRANSMISSION TECHNIQUES WERE USED. FOUR SYSTEMS OF PARALLEL GROWTH BANDS WITH PERIODS OF SIMILAR TO 100, SIMILAR TO 40, SIMILAR TO 10, AND SIMILAR TO 2 MU WERE OBSERVED ON LONGITUDINAL SECTIONS. FINER BANDS, WITH PERIODS OF SMALLER THAN OR EQUAL TO 0.1 MU, WERE OBSD. INSIDE THE SIMILAR TO 2 MU BANDS. THE PRESENCE OF PERIODIC HETEROGENEITY IN CRYSTALS IS GNERALLY ASSOCD. WITH PERIODIC CHANGE OF GROWTH RATE. THE PRESENCE IN THE CRYSTALS OF A WHOLE SPECTRUM OF FINE GROWTH BANDS ATTESTS TO THE COMPLEXITY OF THE PROCESSES TAKING PLACE AT THE CRYSTN. FRONT. IN THE MIDDLE PART OF THE CRYSTALS THERE IS A "GATHERING" OF FINE GROWTH BANDS INTO WINDER ONES. A DISCRETE STRUCTURE OF THE CELLS WAS OBSD. IN THE SAMPLES ALONG WITH THE GROWTH BANDS. THE BOUNDARIES OF THE CELLS LOOK LIKE THIN GROOVES (SIMILAR TO 4 MU), INTERSECTING THE GROWTH BANDS IN THE MEAN VALUE OF 110 DIRECTIONS. PPTS. MEASURING SIMILAR TO 10 PRIME3 ANGSTROM IN SIZE WERE OBSD., INTO THE COMPN. OF WHICH ENTERS THE DOPING IMPURITY. THE MOST PROBABLE REASON FOR THE FORMATION OF SUCH FINELY DISPERSED PPTS. IS THE PARTIAL DECOMPN. OF THE SOLID SOLN. OF AS AND SI DURING COOLING OF THE CRYSTAL FROM THE M.P.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R001401410002-8"

3/3 017 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118002

ABSTRACT/EXTRACT--THERE ARE NO DATA IN THE LITERATURE ON THE SOLY. OF AS IN SI WITHIN A WIDE TEMP. RANGE.

UNCLASSIFIED

USSR

UDC: 546.28:548.55

GRISHINA, S. P., KLIMOVA, N. M., OSVENSKIY, V. B., and MIL'VIDSKIY, M. G., Giredmet (State Scientific Research and Planning Institute of the Rare Metals Industry)

"Structural Features of Silicon Single Crystals Highly Doped with Arsenic"

Moscow, Neorganicheskiye Materialy, Vol 6, No 2, Feb 70, pp 193-195

Abstract: An electron microscopy study of arsenic-doped silicon crystals, grown by the Chokhralski method, revealed growth zones with a period of up to 1 micron. A study with the replica method established that the cell and growth zones have a discrete structure. Segregations measuring $\sim 10^3$A containing the alloying addition were detected. The partial decomposition of the solid solution of arsenic in silicon, during the cooling of the crystal from its melting temperature, may be responsible for the formation of such finely dispersed segregations. There is a lack of information, however, in the literature on arsenic solubility in silicon over a wide temperature range; the appreciable stability of the segregations with respect to thermal effects cautions against univalued views regarding their nature. Further studies are essential.

1/1

Acc. Nr. AP0048787 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code UR0080

90914q **Initiation of the polymerization of some vinyl monomers by aqueous solutions of vinylene carbonate.** Kuznetsov, Yu. A.; Golenishcheva, S. A.; Klubikova, L. E.; Klimova, O. M. (USSR). *Zh. Prikl. Khim. (Leningrad)* 1970, 43(1), [illegible]. CH_2:$CHCONH_2$ (Ia), MeCH:$CHCO_2H$ (Ib), CH_2:CHCN, CH_2:CHOAc (Ic), and PhCH:CH_2 were polymd. at 20–50° in H_2O in the presence of vinylene carbonate (I) and O. The highest yields of polymer (92–5%) were obtained when the monomer and polymer were completely H_2O-sol. (Ia and Ib). Increasing the temp. shortened the induction period due to acceleration of I hydrolysis, but the intrinsic viscosity (η) of the polymers decreased. It was preferable to decrease the induction period by introduction of the initiator (aq. I) after prior treatment at 60–70° for 1–2 hr. This treatment decreased the induction period in the polymn. of Ic at 20° to ≤10–20 min (compared with 5–6 hr), and did not decrease η. A 1% aq. soln. of I preserved its initiating ability for >12 days. Introduction of hydrotropic agents such as

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19800547

AP0048787

EtOH and dioxane, and increasing the vol. of the aq. phase to a I-H_2O ratio >1:5 in the homopolymn. of I did not increase the poly(vinylene carbonate) (II) yield. Hydrolysis products of I, viz., $HOCH_2CHO$ (III) and HCO_2H, accumulated during I polymn. Increasing the amt. of HCO_2H in the starting soln. lowered the yield of II and its η only when substantial amts. were added, apparently due to increased hydrolysis at lower pH. III had no effect on I polymn. The yield of II was ≤40% after 48 hr.

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19800548

Acc. Nr. AP0055699 Abstracting Service: CHEMICAL ABST. 6-70 Ref. Code 4R0480

111860m **Synthesis of poly(vinylene glycol) ethers and copolymers of vinylene glycol and vinyl alcohol.** Volkova, M. V.; Klimova, O. N. (Leningrad. Tekhnol. Inst. im. Lensoveta, Leningrad, USSR). *Vysokomol. Soedin., Ser. B* 1970, 12(1), 62–4 (Russ). Poly(vinyl alc.), vinyl alc.–vinylene glycol copolymers (I), (contg. 15 and 22% glycol groups), vinylene carbonate–vinyl acetate copolymers, poly(vinylene glycol) (II), and poly(vinylene carbonate) were refluxed with EtBr, iso-PrBr, BuBr, CH_2:CH-CH_2Br, and $PhCH_2Cl$ in dry pyridine (III) or in III + 20% aq. NaOH. The degree of etherification depended on the order in which the reagents were added. Introduction of an aq. NaOH soln. (i.e., increased polarity) led to a decrease in the activation energy (E_a) and an increase in the reaction const. E_a reached a max. whenever the formation of an ether involved increased steric hindrance; in the etherification of I, however, the effects of steric hindrance were less significant. Etherification of II under homogeneous conditions indicated that the reactivity of α-OH groups was essentially similar to that of β-OH groups. CKJR

Y1

REEL/FRAME
19841008

C67

Acc. Nr. AP0053760 Abstracting Service: CHEMICAL ABST. Ref. Code UR0080

112011x Degradation of copolymers of vinylene glycol with vinyl alcohol and ethylene under the influence of alkali. Klimova, O. M.; Klubikova, L. E.; Duvakina, N. I.; Zentsova, G. A. (Leningrad. Tekhnol. Inst. im. Lensoveta, Leningrad, USSR). *Zh. Prikl. Khim. (Leningrad)* 1970, 43(1), 217-20 (Russ). Poly(vinyl alc.) (I) (contg. 1.3 mole % α-glycol units), vinyl alc.-vinylene glycol (II) copolymers (III) (contg. 8.9 and 15 mole % α-glycol units), and II-ethylene copolymers (contg. 6 and 13 mole % II) were subjected to oxidative thermal degradation at 70 ± 1° for 3 hr. Increased content of α-glycol units in III gave higher oxidative degradation resistance and resistance to a 40% aq. KOH soln. Introduction of glycol units into I increased the stability presumably by the formation of intramol. H bonds, which inhibited dehydration.
CKJR

VI

7 QB

REEL/FRAME
19830823

USSR

UDC 577.391:546.185'.13:546.171.2

TIKHOMIROVA, M. V., YAKOVLEV, V. G., and KLIMOVA, R. A., Institute of Biophysics, Ministry of Health USSR, Moscow

"The Radiation-Protective Activity of Diammonium Amidothiophosphate"

Moscow, Radiobiologiya, Vol 11, No 4, Jul/Aug 71, pp 533-536

Abstract: In experiments on mice and rats, diammonium amidothiophosphate (I) exerted a pronounced prophylactic effect when administered 10-20 min before irradiation with gamma-rays at a high dosage. The radiation doses applied were 800-1000 r for mice and 850 r for rats at a dosage of 483-558 r/min. The effective dose of I was 10 mg/kg for mice and 20-30 mg/kg for rats. The LD_{50} of I for mice on intraperitoneal administration was 13 mg/kg. Study of spleen preparations showed that I was effective in expediting the restoration of hemopoiesis when administered before irradiation to mice. In experiments on dogs that were irradiated with a dose of 420 r, I on intravenous administration had a protective effect in a dose of 5 mg/kg, but was ineffective in doses of 3 and 4 mg/kg. However, I in a dose of 5 mg/kg was highly toxic to dogs; two of six non-irradiated control dogs treated with I in this dose died.

USSR

UDC 632.95

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

"Synthesis of Thiophosphocyclopentenyl Chlorides"

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

Translation: The intermediate products for the synthesis of pesticides, the alkylthiophosphocyclopentenyl chlorides, were prepared during the reaction of diene hydrocarbon with alkyldichlorophosphite and $PSCl_3$ at 100-150°C. Example. One mole BuOH is added to 3 moles PCl_3 at 15-20°C with constant stirring, the mixture is heated at 60-65°C for 2-3 hr; the reaction mixture is cooled to 0-5°C, then 1 mole of coiled $CH_2{=}CHCH{=}CH_2$ and 3 moles $PSCl_3$ are added, the mixture is heated in a stainless autoclave at 110-120°C for 3 hr. The mixture is distilled and the mixture of acid chloride isomers of thiophosphocyclopentenic (2 and 3) acid is separated from the reaction mixture. The yield was 81%, b.p. 120-140°C/14, $n^{20}D$ 1,5840, d_4^{20} 1,3225. The acid chloride of 3-methylthiophosphocyclopentenic-3 acid was also obtained, b.p. 137-140°C/12, $n^{20}D$ 1,5895, m.p. 43-45°C, as well as mixture

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

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

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USSR

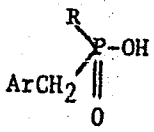
UDC 547.241.07

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

"A Preparative Method for Benzylphosphinic Acids"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 11, Apr 71, Author's Certificate No 298590, division C, filed 23 Jan 70, published 16 Mar 71, p 87

Translation: This Author's Certificate introduces: 1. A method of making benzylphosphinic acids of the general formula



where R is an alkyl, aryl, or aralkyl, and Ar is an unsubstituted or substituted phenyl. As a distinguishing feature of the patent, the process is simplified by treating diarylphosphonite with benzyl chloride in alcohol with subsequent isolation of the product by conventional methods. 2. A

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BLIZNYUK, N. K., et al., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 11, Apr 71, Author's Certificate No 298590, division C, filed 23 Jan 70, published 16 Mar 71, p 87

modification of this method distinguished by the fact that the process is carried out with heating to 150-250°C.

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USSR

UDC: 629.78:533.1

GUSEV, V.N. and KLIMOVA, T.V.

"On Similarity of Hypersonic Jet Flow"

Moscow, Uch. Zap. Tsentr. Aerogidrodinam. In-ta (Works of Central Aerohydrodynamic Institute), 1972, No 6, pp 1-9 (from Referativnyy Zhurnal-Raketostroyeniye, 1973, Abstract No 4.41.148)

Translation: The problem is investigated of hypersonic jet flow of ideal gas in the framework of compressed layer theory and under condition that the jet flow is equivalent to one-dimensional flow. Similarity criterions are established for highly underexpanded and overexpanded jets, flowing into a flooded space and into a hypersonic flow of the same direction. Comparison of available experimental data with calculation results indicate a good accuracy of the compressed layer method. 7 illustrations. 8 references. Author's resume.

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Corrosion

USSR

UDC 669.14.018.293:621.792,
.053:620.143

VEYNGARTEN, A. M., GOMAN, G. M., GOLOVCHENKO, V. S., KLIMOVA, V. A., and SITALOV, V. P.

"Corrosion of Hul Steel Weldments"

Leningrad, Sudostroyeniye, No 6, Jun 73, pp 40-43

Abstract: The influence of the thermal cycle of weldments on the corrosion resistance of shipbuilding steels was investigated on butted specimens of 09G2, 10KhSND, and 4S standard hull steels in rapid-flowing sea water over a period of 1000 hrs. Various methods and welding practices were applied to determine the influence of the character of the thermal effect and of the cooling rate. The investigation results are discussed by reference to diagrams showing the heating and cooling curves in the thermal influence zone of 09G2 steel, the corrosion dependences on the welding energy and the cooling rate, and the corrosion resistance dependence on the condition of the burning off beading weld. The main factors affecting the corrosion resistance are the cooling rate on welding (according to the running welding energy in cal/cm) and the character of structural conversion of steel. At 4500-5000 cal/cm running energy, the resistance of 09G2 steel
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VEYNGARTEN, A. A., et al., Sudostroyeniye, No 6, Jun 73, pp 40-43

and 4S steel in the thermal influence zone is the same as that of the initial material. To avoid the development of selective corrosion in the thermal influence zone, welding with higher running energies or the use of burning off beads is recommended. Four figures, one table, four bibliographic references.

2/2

1/2 010 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--CATALYTIC ENE SYNTHESIS WITH CARBONYL COMPOUNDS. ADDITION OF ISOPRENE TO FORMALDEHYDE -U-

AUTHOR-(02)-KLIMOVA, YE.I., ARBUZOV, YU.A.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(1), 102-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CATALYTIC ORGANIC SYNTHESIS, CARBONYL COMPOUND, TIN CHLORIDE, ISOPRENE, FORMALDEHYDE, ACETATE, NAPHTHALENE, QUINONE, POLYNUCLEAR HYDROCARBON, HYDROGENATION, ALCOHOL, PHTHALATE, BENZOIC ACID, ESTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1582 STEP NO--UR/0020/70/190/001/0102/0103

CIRC ACCESSION NO--AT0100200

2/2 010 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0100200

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDING 10.4 G SNCL SUB4 TO 15 G PARAFORMALDEHYDE AND 30 ML CHCL SUB3-20 ML ET SUB2 O FOLLOWED BY 20 G ISOPRENE GAVE AFTER 10 HR IN THE COLD, FOLLOWED BY REMOVAL OF UNREACTED PARAFORMALDEHYDE 62PERCENT HOCH SUB2 CH SUB2 C(:CH SUB2)CH: CH SUB2 (I), B SUB7 50-1DEGREES, N PRIME20 SUBD 1.4792,D PRIME20 0.8969. I AND AC SUB2 O IN THY PRESENCE OF PYRIDINE IN 2 DAYS GAVE 81PERCENT CORRESPONDING ACETATE, B SUB7 53DEGREES, 1.4560, 0.9434, WHICH HEATED WITH NAPHTHOQUINONE IN C SUB6 H SUB6 6 HR GAVE 80PERCENT II, M. 93-4DEGREES. THE ALC. I AND 1-C SUB10 H SUB7 NCO GAVE THE NAPHTHYLURETHANE, M. 99-100DEGREES, WHICH WITH 1,4-NAPHTHOQUINONE GAVE 80PERCENT ADDUCT, III, M. 132DEGREES. HYDROGENATION OF I OVER PT GAVE 80PERCENT 3-METHYL-1-PENTANOL, B. 152-3DEGREES, WHOSE 3,5-DINITROBENZOATE M. 37-8DEGREES, AND HYDROGEN 3-NITROPHTHALATE M. 151-2DEGREES.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CATALYTIC AND THERMAL REACTIONS OF 2,3,DIMETHYLBUTADIENE AND ISOPRENE AND CHLORAL -U-
AUTHOR-(03)-TRESHCHOVA, YE.G., KLIMOVA, YE.I., ARBUZOV, YU.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(3), 419-22

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ISOMER, SPECTROSCOPIC ANALYSIS, CATALYTIC HYDROGENATION, CONDENSATION REACTION, BUTADIENE, ISOPRENE, CHLORINATED ORGANIC COMPOUND, TIN CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1678 STEP NO--UR/0366/70/006/003/0419/0422

CIRC ACCESSION NO--AP0112672
UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0112672

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF H SUB2 C:CMECME:CH SUB2 (I) WITH OHCCCL SUB3 (II) IN THE PRESENCE OF SNCL SUB4 AT ROOM TEMP. GAVE AN ISOMERIC MIXT. CONTG. SIMILAR TO 20PERCENT DIENE ADDUCT 3,4,DIMETHYL,6,(TRICHLOROMETHYL),5,6, DIHYDRO,2H,PYRAN (III) AND SIMILAR TO 80PERCENT H SUB2 C:CMEC(:CH SUB2)CH SUB2 CH(CCL SUB3)OH (IV). THE STRUCTURES OF THESE PRODUCTS WERE CONFIRMED BY CATALYTIC HYDROGENATION AND SPECTROSCOPY. THE THERMAL CONDENSATION OF I WITH II GAVE PREDOMINANTLY III AND ONLY A SMALL AMT. OF IV. ISOPRENE REACTED WITH II ANALOGOUSLY TO GIVE AT ODEGREES IN THE PRESENCE OF SNCL SUB4 PREDOMINANTLY H SUB2 C:CHC(:CH SUB2)CH SUB2 CH(CCL SUB3)OH AND AT 145-50DEGREES TO GIVE PREDOMINANTLY 4,METHYL,6,(TRICHLOROMETHYL),5,6,DIHYDRO,2H,PYRAN. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--CATALYTIC AND THERMAL REACTIONS OF 2,3,DIMETHYLBUTADIENE AND ISOPRENE WITH GLYOXIYLIC ACID ESTERS -U-

AUTHOR-(03)-KLIMOVA, YE.I., TRESHCHOVA, YE.G., ARBUZOV, YU.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(3), 413-18

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ISOPRENE, PRIMARY ALCOHOL, TIN CHLORIDE, BUTADIENE, ESTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1677 STEP NO--UR/0366/70/006/003/0413/0418

CIRC ACCESSION NO--AP0112671

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0112671
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF H SUB2 C:CMECME:CH SUB2 (I) WITH OHCCO SUB2 BU (II) IN THE PRESENCE OF SNCL SUB4 AT ROOM TEMP. GAVE AN ISOMERIC MEXT. CONTG. 30PERCENT DIENE ADDUCT BU 3,4,DIMETHYL, 5,6,DIHYDRO,2H,PYRAN,6,CARBOXYLATE AND 70PERCENT H SUB2 C:CMEC(:CH SUB2)CH SUB2 CH(OH)CO SUB2 BU. THE NONCATALYTIC I-II REACTION AT 130DEGREES GAVE PREDOMINANTLY THE DIENE ADDUCT. ISOPRENE REACTED ANALOGOUSLY. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 612.014.45:612.79

KLIMOVICH, I. A., Chair of Skin and Venereal Diseases, Vitebsk Medical Institute

"Functional Shifts in the Skin of Healthy People Under the Influence of Therapeutic Doses of Ultrasound"

Minsk, Zdravookhraneniye Belorussii, Vol 16, No 7, Jul 70, pp 26-29

Abstract: The effect of ultrasound on the skin of healthy subjects was studied. Ultrasound in varying doses was applied to the inner surface of the right upper arm of 67 healthy adults, while the left arm was tested for symmetrical response at the corresponding site without application of ultrasound. The doses were 0.4 w/cm^2, 0.8 w/cm^2, and 1.2 w/cm^2. Within 10 minutes after application of ultrasound there occurred a lowering of pH on the tested surface of the skin, an increase in redox properties, increased vascular penetration, and a slight increase in temperature. Areas of skin outside the site tested remained normal. Larger doses produced more pronounced effects in a shorter time. The corresponding site on the left arm showed similar effects, with a slight delay in time. Both arms returned to normal within 24 hours. Repeated applications of ultrasound produced more pronounced effects. An increase in temperature alone does not produce an increase in vascular penetration such as is observed with ultrasound. Therapeutic doses of ultrasound produce reversible functional shifts in the organism which can be considered also as indirect effects of ultrasound on tissues.

1/1

USSR

UDC 621.317.36/76

KIRIANIKI, N. V., KLIMOVITsKAYa, A. I., and MOSKOVChENKO, Yu. N.

"A New Zero-Beat Indicator and its Use for Frequency Measurement"

Otbor i peredach inform. Resp. mezhved sb. (Selection and Transmission of Information. Republic Interdepartmental Collection), 1972, No 32, pp 85 - 89 (from RZh-Avtomatika Telemechanika i Vychislitel'naya Tekhnika, No 3, Mar 73, Abstract No 3 A300 by the authors)

Translation: A new optical zero-beat indicator is described and the possibility of using it for frequency measurement is discussed. An analog frequency meter circuit with such an indicator and the results of experimental frequency meter studies are given. Ways to improve the circuit further are pointed out. Three illustrations, three bibliographic entries.

1/1

USSR

UDC 669.017:539.26:620.187

KLIKOVICH, L. G., VAYNBLAT, YU. M., OVECHKIN, B. I., and BER, L. B., All-Union Institute of Light Alloys

"Determination of the Grades of Separations in the Breakdown of the Solid Solution in the Al+0.4%Zr Alloy by Means of Small-Angle X-Ray Dispersion and Electron Microscopy"

Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, No 6, 1973, pp 135-137

Abstract: The breakdown of the solid solution was investigated on specimens cut out from pressed bars of the Al+0.4%Zr alloy by the methods of small-angle x-ray dispersion (SXD) and electron microscopy. The specimens were aged at 400° and 500° for 10 to 500 hr after water-hardening and heating at 640° for 10 min. It is shown that the particles separating on aging are spherical. Their average sizes satisfactorily coincide with dimensions calculated by the SXD method of oxide replica. The analysis of volumes of different fractions seems to indicate that the quantity of the larger fraction increases with the duration of aging. The joint application of SXD and electron microscopy methods provides reliable information on aging processes of alloys. Two figures, two tables, five bibliographic references.

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Acc. Nr.: AP0028769 Ref. Code: UR 0050

PRIMARY SOURCE: Meteorologiya i Gidrologiya, 1970, Nr 1, pp 50-56

CLOUD TRANSMISSION OF SOLAR RADIATION OVER DIKSON

V. M. Klimovich

Coefficients of solar radiation transmission by different forms of clouds over Dikson are represented in the article. Accuracy estimation of calculations with these coefficients of total radiation values for a day, five- and ten-day period from July through October is given.

It is shown that the mean relative error in calculations of daily sums is equal to 19% for July and 30—40% for other months. The mean relative error in calculations of five- and ten-day values is equal to 13% for July and 19% from August through October.

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REEL/FRAME

19680206

1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--ANISOTROPY OF TRANSVERSE MAGNETORESISTANCE OF THIN N,SI FILMS -U-

AUTHOR-(03)-KLIMOVSKAYA, A.I., SNITKO, O.V., KIRILLOVA, S.I.

COUNTRY OF INFO--USSR

SOURCE--JETP LETTERS (USA), VOL. 11, NO. 2, P. 119-23, JAN. 1970

DATE PUBLISHED----JAN70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MAGNETORESISTANCE, THIN PLATE, SILICON SINGLE CRYSTAL, LOW TEMPERATURE EFFECT, MAGNETIC ANISOTROPY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1089 STEP NO--US/0000/70/011/002/0119/0123

CIRC ACCESSION NO--AP0136509

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R001401410002-8"

2/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136509

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ANISOTROPY OF MAGNETORESISTANCE IN THIN PLATES OF N-SI AT LOW TEMPERATURES (20-77DEGREESK) WAS INVESTIGATED AND THE POSSIBLE EXISTENCE OF A SIZE EFFECT OVER THE COOLING LENGTH AND THE MEAN FREE PATH WAS DEMONSTRATED. THE SAMPLES WERE CUT FROM SINGLE CRYSTAL SILICON IN SUCH A WAY THAT THE SURFACE WAS ORIENTED PARALLEL TO THE (100) CRYSTALLOGRAPHIC PLANE AND THE CURRENT DIRECTION COINCIDED WITH THE MAGNITUDE OF 010. SINCE THE PRESENCE OF MACROINHOMOGENEITIES IS IMPORTANT IN MAGNETORESISTANCE MEASUREMENTS, THE RESULTS WERE SUBDIVIDED INTO TWO GROUPS. (1) RESULTS OBTAINED FOR HOMOGENEOUS SYSTEMS, NAMELY, THE BENDING OF THE BANDS AT THE SAMPLE SURFACE IS ZERO OR DEPLETING. (2) RESULTS OF INHOMOGENEOUS SYSTEM STRONG ENRICHMENT ON THE SURFACE. FACILITY: UKRAINIAN ACAD. SCIS., USSR.

UNCLASSIFIED

USSR

KOVAL', A. D., VYaGIN, G. I., BOBKOV, V. V., KLIMOVSKIY, Yu. A., STRAL'ChENKO, S. S., and FOGEL', Ya. M., Khar'kov State University imeni A. M. Gor'kiy

"On the Question of the Difference in Composition of Charged and Neutral Particles Knocked out of Gallium Arsenide by a Beam of Ar^+ Ions"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 43, No 8, Aug 73, pp 1753 - 1754

Abstract: A previous study in which Ar^+ particles had an energy of 2 kev showed that the positively charged secondary particles were primarily Ga^+_n ions and complexes, with As^+_n particles being 2 - 3 orders of magnitude less frequent, while the neutral secondary particles were all arsenic atoms or complexes. Two types of gallium arsenide crystals were used as targets,(100) and (111), with no discernible difference in the distribution of secondary particles ejected between the two types. It is theorized that the difference in distribution is related to processes between the departing secondary particles and the surface of the solid and that these processes are determined by the velocity of the departing particles and the relative arrangement of energy zones of the solid body and excited levels of the particles.

The present work extends this investigation, using a beam of Ar^+ particles at 25 kev. The spectrum of the emitted particles in the visible light range was recorded. It consisted entirely of two resonance lines of GaI at 4172 and 4033 angstroms. These were found to be produced by Ga particles at energies on the

USSR

KOVAL', A. D. et al., Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 43, No 8, pp 1753 - 1754

order of 2 - 3 kev. This is understandable, since the resonance level at 3.1 ev of the Ga atom, the transition from which to the base level produces fast excited Ga particles, is in resonance with a zone of free conductivity levels of the GaAs monocrystal, leading to a high probability of resonance ionization, while a significant portion of the levels of the As atom is in resonance with a forbidden zone of the crystal, making resonance ionization unlikely for these atoms. The neutral, emitted As atoms radiate in the vacuum ultraviolet and were not recorded in the experimental spectrum. Resonance ionization can occur for As atoms at an energy level of 7.6 ev, but only a small percentage reaches this level.

KLIMOVSKIY, Yu. A.

JPRS 59068
6-73

XV-5. APPLICATION OF THE METHOD OF SECONDARY ION-ION EMISSION TO STUDY THE SURFACE OF $A^{III}B^{V}$ SEMICONDUCTOR COMPOUNDS

[Article by V. V. Bobkov, A. G. Koval', Yu. A. Klimovskiy, V. P. Lebedev, S. S. Strel'chenko, and V. V. Shubina, Khar'kov-Kaluga; Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 210]

The use of the method of secondary ion-ion emission is proposed in this paper to study the surface of $A^{III}B^{V}$ semiconductor compounds. This method was used successfully previously [1] to study the surface reactions on the atomic level.

The research performed demonstrated that the mass spectrum of the secondary gallium arsenide ions contains two groups of particles: 1) those knocked out of the adsorbed layer and 2) those knocked out of the gallium arsenide lattice.

In the first group ions of the $Ga_mO_n^+$, Ga_mOH^+ and Ga_mAsO^+ type were observed the origin of which is related to the surface contamination. The study of the temperature dependence of these ions demonstrated that the gallium arsenide surface is cleaned in a vacuum of 10^{-7} mm Hg at a temperature of 500° C.

In the second group of particles, ions of the $Ga_mAs_n^+$ type were observed. In this paper there is a discussion of possible mechanisms of their occurrence connected with the characteristic features of the chemical bond in gallium arsenide.

A study was made of certain aspects of the application of the method of secondary ion-ion emission to the study of the processes of the formation of nucleating centers for growth of heteroepitaxial layers.

BIBLIOGRAPHY

1. Ya. M. Fogel', UFN [Progress in the Physical Sciences], No 91, 1075, 1967.

USSR

UDC: 535.33:546.292

GRITSYNA, V. V., KIYAN, T. S., FOGEL', Ya. M., KOVAL', A. G., and KLINOVSKIY, Yu. A.

"Glow of Slow Neon Particles Appearing in the Bombardment of Carbon Films by a Beam of Fast Neon Ions"

Leningrad, Optika i Spektroskopiya, Vol. 29, No. 4, 1970, pp 641-643

Abstract: This is the third paper published by the first four of the authors named above on the same subject. In the two earlier papers (ZhETF, Letters to the Editor, 9, 1969, p 212; 58, No. 5, 1970) the authors reported discovery of a glow from slow helium atoms and molecules resulting from prolonged bombardment of hard targets of Ni, Pd, Pt, Ta, and C by He^+ ions. This paper reports experiments conducted with carbon films as the targets for beams of N^+, Ar^+, and Ne^+, with a beam density of about 30 $\mu A/cm^2$ and an ion energy of about 20 kev. When the N^+ ions were used, no glow was registered for the slow nitrogen particles. There was also no glow for slow argon particles upon bombardment of the film with Ar^+ ions. For the Ne particles, however, there was a glow, and the sole illustration in this short article shows the spectrum of this glow with a beam density of 10 μA.

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USSR

UDC 632.935.4

KLIMPINYA, A. Ye.

Ioniziruyushchiye Izlucheniya v Bor'be s Vrednymi Nasekomymi (Ionizing Radiation in the Control of Harmful Insects), Riga, "Zinatne," 1971, 132 pp

Translation: Annotation: This monograph describes the sexual sterilization of insects using ionizing radiation. Data are given on the sensitivity of various species of insects to the effect of ionizing radiation depending on their phases and growth stages. Longevity and mating activity of exposed individuals and pathological changes in developing sex glands of exposed individuals, as well as the history of development and prospects for practical application of the method of sexual sterilization of insects are discussed. Sterilizing dosages of ionizing radiation for various species of insects are given, and note is taken of the necessity of a quantitative preponderance of sterilized individuals over individuals of the normal population. Special attention is devoted to the problem of sexual sterilization of the sugar beet fly. In connection with the fact that practical application of the sexual sterilization method is determined in a majority of cases by the possibility of massive reproduction of exposed insects, the problems of breeding insects in artificial nutrient media are presented.

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KLIMPINYA, A. Ye., Ioniziruyushchiye Izlucheniya v Bor'be s Vrednymi Nasekomymi, Riga, "Zinatne," 1971, 132 pp

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KLIMPINYA, A. Ye., Ioniziruyushchiye Izlucheniya v Bor'be s Vrednymi Nasekomymi, Riga, "Zinatne," 1971, 132 pp

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USSR

KLIMPINYA, A. Ye., Ioniziruyushchiye Izlucheniya v Bor'be s Vrednymi Nasekomymi, Riga, "Zinatne," 1971, 132 pp

4/4

Acc. Nr: AP0036810 Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 1, pp 18-21

NOSOGEOGRAPHICAL ASPECT OF TYPHOID CARRIER STATE AND OPISTHORCHIASIS

P. Ya. Kravchenko, B. A. Zamotin, V. I. Prokopenko, A. A. Klimshin

Territorial distribution of typhoid carriers and of the extent of affection of the population with opisthorhiasis proved to coincide in graphic map analysis. Among the patients suffering from opisthorhiasis typhoid carrier state proved to be almost 5 times more frequent than among those free of this invasion.

D.K.

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REEL/FRAME

USSR

UDC 621.791.754.293:669.295

GUSEVA, YE. A., KLIMYCHEV, A. I., FOMICHEVA, I. A., and MAZOK, V. K.

"Argon-Arc Welding of Titanium Alloys by Through Fusion"

Moscow, Svarochnoye Proizvodstvo, No 2, Feb 70, pp 15-16

Abstract: A procedure is described for through fusion welding of titanium alloys up to 10 mm thick without dressing the edges. The welds obtained by this procedure have good penetration and a high weld shape factor. There are no sharp transitions from fusion to basic metal on the backside of the weld. X-ray control of the welded joints showed that the pores in the weld are very small. Comparative data are presented showing that the strength of samples without reinforcement for the welded joints executed by through fusion is approximately 10 kg/mm^2 higher than in the case of two-pass welding.

It is shown that through fusion can be obtained only under certain welding conditions. The basic condition for through fusion welding is insuring a specific arc pressure on the pool of molten metal which can overcome the surface tension, force the molten metal out of the pool, and equalize the hydrostatic pressure of the liquid metal. The comparatively low specific weight of titanium alloys and correspondingly lower hydrostatic pressure provide a basis for assuming that for these metals through fusion welding can be realized more easily than for steel.

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USSR

GUSEVA, YE. A., et al., Svarochnoye Proizvodstvo, No 2, Feb 70, pp 15-16

Conditions for argon-arc through fusion welding are calculated for sheet material made of OT4 and VT6S alloys 4, 8, and 10 mm thick.

2/2

USSR UDC 533.66.063

BOKSHTEYN, B. S., VOROB'YEV, Ye. M., KLINGER, L. M., FRIDMAN, Ye. M., and SHVINDLERMAN, L. S., Academy of Sciences USSR, Institute of the Solid Body Physics, Moscow, Institute of Steel and Alloys

"Osmotic Effect at the Border Diffusion"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 47, No 1, Jan 73, pp 145-149

Abstract: A model of boundary diffusion was developed with consideration of the formation of an effect analogous to the osmotic one. As a result, formation of dislocations takes place in the boundary zones which accelerates the diffusion inside the grain and with its motion carrying the atoms of the admixture. A self-adjusted system of equations was derived which describes the process under analysis.

1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--RESONANCE IN FERRIMAGNETS CONTAINING PARAMAGNETIC IONS WITH NEAR CROSSING ENERGY LEVELS -U-

AUTHOR-(03)-GUREVICH, A.G., AGEEV, A.N., KLINGER, M.I.

COUNTRY OF INFO--USSR

SOURCE--J. APPL. PHYS. 1970, 41(3), 1295-302

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MAGNETIC RESONANCE, FERRIMAGNETISM, PARAMAGNETIC ION, MAGNETIC TRANSFORMATION, HOLMIUM, YTTERBIUM, TERBIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0498 STEP NO--US/0000/70/041/003/1295/1302

CIRC ACCESSION NO--AP0117732

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0117732

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOME NEW EXPTL. RESULTS CONCERNING THE MAGNETIC RESONANCE IN PR PRIME3 POSITIVE DOPED YIG ARE PRESENTED AND DISCUSSED, TOGETHER WITH THE RESULTS FOR TB PRIME3 POSITIVE AND HO PRIME3 POSITIVE IN YIG ALREADY PUBLISHED, IN TERMS OF EXISTING THEORIES. THE MAGNETIZATION DIRECTIONS CORRESPONDING TO THE NEAR CROSSINGS OF ENERGY LEVELS IN THE CASE OF HO PRIME3 POSITIVE CAN LIE WITHIN A CERTAIN LOCAL PLANE AND, IN THE CASE OF PR PRIME3 POSITVE, CAN COINCIDE WITH A LOCAL AXIS OF THE DODECAHEDRAL SITE (FOR TB PRIME3 POSITIVE, AS HUBER HAS FOUND, THESE DIRECTIONS FORM A CONICAL SURFACE). THE ANGLE AND TEMP. DEPENDENCES OF DELTAH FOR TB PRIME3 POSITIVE AND HO PRIME3 POSITIVE ARE VERY SIMILAR AND CAN BE EXPLAINED COMPLETELY IN TERMS OF SLOW RELAXATION. FOR PR PRIME3 POSITIVE, THESE DEPENDENCES IN THE DIRECTIONS OF NEAR CROSSINGS RESEMBLE THE "ANOMALOUS" BEHAVIOR FOR YB PRIME3 POSITIVE IN OCTAHEDRAL SITES. A CONTRIBUTION FROM TRANSVERSE RELAXATION IS PROBABLE IN THE CASE OF PR PRIME3 POSITIVE.

FACILITY: INST. SEMICOND., LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 621.375.82

KLINKOV, V. K., and MUKHTAROV, CH. K.

"Disruption of Oscillation in Lasers Due to Redistribution of Energy in Resonator. Oscillation of Ruby Laser With Moving Selector"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No 2(14), Moscow, "Sov. Radio," 1973, pp 61-64 (English summary) (from RZh-Fizika, No 10, Oct 73, Abstract No 10D830 from authors' abstract)

Translation: The article studies the behavior of induced radiation in a laser with flat external mirrors during deep modulation of the oscillation threshold as a result of redistribution of the energy in the resonator. It is shown that monotonic migration of the internal dielectric boundaries leads to periodic disruptions of the oscillation in each mode and to multimode oscillation. In real lasers migrations of the dielectric boundaries are due to heating of the active medium, its vibrations, etc. All this substantially affects the spectral kinetics of free oscillation. The effect of the energy redistribution mechanism on oscillation is traced experimentally in a ruby laser. Bibliography with nine titles.

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1/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--USE OF AN INDICATOR METHOD FOR DETERMINING THE DEPTH OF DIFFUSION OF INORGANIC ACIDS IN POLYMER FILMS -U-

AUTHOR-(03)-MUROV, V.A., SHEVCHENKO, A.A., KLINOV, I.YA.

K

COUNTRY OF INFO--USSR

SOURCE--LAKOKRASOCH. MATER. IKH PRIMEN. 1970, (2), 62-4

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PLASTIC FILM, DYE, CHEMICAL INDICATOR, EPOXY RESIN, FLUID DIFFUSION, SULFURIC ACID, NITRIC ACID, HYDROCHLORIC ACID/(U)ED5 EPOXY RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605012/B07 STEP NO--UR/0303/70/000/002/0062/0064

CIRC ACCESSION NO--AP0140246

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140246

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TROPEOLIN OO OR METHYL RED DYES WERE ADDED TO LIQ. EPOXY RESIN ED-5 IN ALC. OR ACETONE SOLN. THE ADDN. OF POLYETHYLENE POLYAMINE (A AHRDENER) TO THE SOLN. AND DRYING ON GALSS SLIDES GAVE FILMS. THE DIFFUSION RATES OF HCL, NHO SUB3, OR H SUB2 SO SUB4 SOLNS. INTO THE FILMS WERE DETD. IN 20-70DEGREES INTERVAL BY THE IMMERSION OF THE FILMS IN SOLNS. OF VARIOUS CONCNS, FOR A KNOWN TIME, MAKING MICROTOME SLICES PARALLEL TO THE SURFACE, AND DETG. THEIR COLOR UNDER A MICROSCOPE. THE DIFFUSION OF H SUB2 SO SUB4 AND HCL SOLNS. INTO ED 5 IS LINEAR, BUT THE DIFFUSION OF HNO SUB3 IS NOT DUE TO THE DEGRADATION OF THE POLYMER.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--AGING OF POLYPROPYLENE IN NITRIC ACID -U-

AUTHOR-(03)-VOLCHEK, A.M., BOKSHITSKIY, M.N., KLINOV, I.YA.

COUNTRY OF INFO--USSR

SOURCE--PLAST. MASSY 1970, (3), 37-9

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--THERMAL AGING, POLYPROPYLENE, NITRIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0662 STEP NO--UR/0191/70/000/003/0037/0039

CIRC ACCESSION NO--AP0119570

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119570

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AGING OF CRYST. POLYPROPYLENE (I) (DEGREE OF CRYSTALLINITY 50PERCENT) IN 10-80PERCENT HNO SUB3 WAS STUDIED AT 20-100DEGREES FOR 1800 HR (AT EACH EXPTL. TEMP.). THE AGING KINETICS ARE DISCUSSED. SEVERAL EQUATIONS WERE DERIVED ANAL. FOR THE CALCN. OF I DURABILITY (TAU) AND MAX. ACID CONCN. AT WHICH THE POLYMER RETAINED ITS BASIC FUNCTIONS FOR A CERTAIN PERIOD OF TIEM. TWO NUMERICAL EXAMPLES FOR THE CLACN. OF TAU AND MAX. ACID CONCN. ARE PRESENTED.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R001401410002-8"

USSR

UDC 612.26

TIUNOV, L. A., KLIORIN, A. I., KOLOSOVA, T. S., IVANNIKOV, Yu. G., and AKHMATOVA, M. A., Leningrad

"The Causes of Differences in Carbon Monoxide Concentration in Exhaled Air in Man"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 58, No 11, 1972, pp 1756-1759

Abstract: In man, carbon monoxide concentration in exhaled air normally varies from 2.8 to 25 mg/m^3. It increases with increasing erythrocyte concentration. For example, when erythrocyte concentration is 4.71 million/mm^3, the average CO concentration is 9.6 mg/m^3 of exhaled air, and when the RBC count is 5.34 million/mm^3, CO concentration is 22.9 mg/m^3. On the other hand, the concentration of catalase in the erythrocytes decreases with increasing hemoglobin concentration in blood; and with decreasing catalase, hemoglobin catabolism increases. The CO molecule is formed through incomplete oxidation of the carbon atom in the alphamethylene bridge in the tetrapyrrole ring. Thus, CO production is proportional to hemoglobin catabolism, and it increases in hemolysis. Since 1.27 units of CO are produced for one equivalent unit of hemoglobin catabolized, other hem-containing compounds, such as myoglobin and

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USSR

TIUNOV, L. A., et al., Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 58, No 11, 1972, pp 1756-1759

cytochromes, also contribute certain amounts of CO. However, the ratio of CO produced over hemoglobin catabolized is so constant that measurements of CO concentration in exhaled air can be used as an indirect method of determining erythrokinetics.

KLISENKO, M.A.

(3)

So: JPRS 59582

23 July 1973

TOXIC ORGANOPHOSPHORUS COMPOUNDS

[Chapter 2 from the book by M.A. Klisenko, T.A. Lebedeva, Z.P. Yurkova; Moscow, Khimicheskiy Analiz Mikrokolichestv Yadokhimikatov, Russian, 1972, pp 45-99]

Brief Information About the Properties of the Compounds

BUTYPHOS [S, S, S-tributyl trithiophosphate]

$$\begin{matrix} C_4H_9S \\ C_4H_9S \end{matrix} > \overset{O}{\underset{}{P}} - SC_4H_9$$

$C_{12}H_{27}OS_3P$

Molecular weight: 314.29

Synonyms: folex, DTeF, merphos.

Pale yellow fluid with unpleasant odor.

Boiling point: 154° (0.3 mm Hg).

Virtually insoluble in water. Dissolves well in organic solvents.

Manufactured in the form of 70% concentrate of emulsion or oil solution.

CARBOPHOS [O,O-dimethyl-S-(1,2-dicarbethoxyethyl)-dithiophosphate]

$$\begin{matrix} CH_3O \\ CH_3O \end{matrix} > \overset{O}{P} - SCHCOOC_2H_5 \\ \quad | \\ CH_2COOC_2H_5$$

$C_{10}H_{19}O_6S_2P$

Molecular weight: 330.35

Synonyms: malathion, malathon, compound 4049.

[I - USSR - D]

USSR

UDC: 537.312.62

RABIN'KIN, A. G., KLISHANOVA, L. A., PRONINA, L. N.

"Concerning the Effect of High-Pressure Treatment on the Phase Composition and Superconducting Properties of Zirconium-Niobium Alloys"

V sb. Probl. sverkhprovodyashch. materialov (Problems of Superconducting Materials--collection of works), Moscow, "Nauka", 1970, pp 141-147 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D551)

Translation: The paper presents the results of a study of the temperatures of transition to the superconducting state, critical fields and phase composition of alloys of zirconium with 2-40 atomic percent niobium after they have been subjected to high hydrostatic pressure treatment (35-65 kbar). It is found that just as in the case of pure zirconium, the application of high pressure leads to the formation of an ω-phase in alloys with 2-30 atomic percent niobium although the ω-phase is fixed by quenching only in alloys with 7-10 atomic percent niobium. The resultant high-pressure ω-phase is retained in the specimens after pressure relief, the quantity of ω-phase increasing considerably in alloys with 7-10 atomic percent niobium. Alloying of zirconium with niobium reduces the pressure at which the ω-phase arises as compared with pure niobium. In all cases, the formation of high-pressure ω-phase in the alloys or a reduction in its quantity lowers the T_k, widens the temperature range in which a transition to the superconducting state takes place, and reduces H_{k2}. One illustration, one table, bibliography of nine titles. Authors' abstract.

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USSR

UDC 669.296.5.293.018.5.537.312.62.669.98

RABIN'KIN, A. G., KLISHANOVA, L. A., PRONINA, L. N.

"The Influence of High-Pressure Working on Phase Composition and Superconducting Properties of Zirconium-Niobium Alloys"

Probl. Sverkhprovodyashch. Materialov [Problems of Superconducting Materials -- Collection of Works], Moscow, Nauka Press, 1970, pp. 141-147. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 I792 by the authors).

Translation: Results are presented from a study of the transition temperatures T_c, critical fields and phase composition of alloys of Zr with 2-40 at.% Nb after treatment by high hydrostatic pressure (35-65 kbar). As is the case for pure Zr, the application of high pressure results in the formation of an ω phase in alloys with 2-30 at.% Nb whereas during hardening the ω phase is fixed only in alloys with 7-10 at.% Nb. The high-pressure ω phase is retained after removal of the pressure in the specimens, its quantity increasing significantly in alloys with 7-10 at.% Nb. Alloying of Zr with niobium decreases the pressure at which the ω phase is developed. In all cases the formation of the high-pressure ω phase in the alloys or an increase in its quantity causes a reduction in T_c, an expansion of the temperature interval over which the transition occurs, and a decrease in the value of H_{c2}. 1 fig; 1 table; 9 biblio refs.

1/1

USSR

SMETANINA, L. B., LESHCHENKO, S. S., YEGOROVA, Z. S., STARODUBTSEV, D. S., KLINSHPONT, E. R., KAPLUNOV, M. Ya., and KARPOV, V. L., Scientific Research Physico-Chemical Institute imeni L. Ya. Karpov

"Radiation Structuralization of Ethylenepropylene Rubber in Presence of N-Phenylmaleimide Sensitizer"

Moscow, Vysokomolekulyarnyye Soyedineniya, Vol 12, No 11, Nov 70, pp 2,401-2,407

Abstract: The process of radiation structuralization of ethylenepropylene rubber [SKEP] and its mixtures with N-phenylmaleimide [NPMI] was studied. It was determined that NPMI is a sensitizer for radiation crosslinking of SKEP, the rate of gel-formation being directly proportional to the quantity of NPMI added. The effect is neither ionic nor radical; addition of NPMI does not affect the production of free radicals and the recombination of the radicals is identical with or without NPMI; liberation of charges trapped in the traps shows also no effect on the process. It has been proposed that NPMI acts as an acceptor of hydrogen during the γ-irradiation, being reduced to N-phenylsuccinimide in the process. Thus it aids in production of more vinylidene bonds in SKEP and accelerates the crosslinking of SKEP.
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Acc. Nr AP0045156 Abstracting Service: CHEMICAL ABST. Ref. Code 5-70 21R0456

K

90945a **Structure of free radicals in γ-irradiated polypropylene.** ~~Klinshpont, E. R.~~; Milinchuk, V. K. (Fiz.-Khim. Inst. im. Karpova, Moscow, USSR). *Khim. Vys. Energ.* 1970, 4(1), 84-6 (Russ). Polypropylene fibers were irradiated with γ-rays at 77°K. EPR spectra were obtained immediately after the irradn., after the irradn. with γ-rays and uv light, or after the irradn. with γ-rays and warming up to 300°K. CPJR

4D

1/1

REEL/FRAME
19780056

7

1/2 034 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--PHOTO INITIATED REACTIONS OF FREE RADICALS IN POLYMERS. PEROXIDE RADICALS IN POLYPROPYLENE -U-
AUTHOR-(03)-KLINSHPONT, E.R., MILINCHUK, V.K., PSHEZHERSKIY, S.YA.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(1), 88-91

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY, PHYSICS

TOPIC TAGS--GAMMA RADIATION, PHOTOEFFECT, FREE RADICAL, POLYPROPYLENE, PLASTIC FILM, EPR SPECTRUM, PEROXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0940 STEP NO--UR/0460/70/012/001/0088/0091

CIRC ACCESSION NO--AP0055638
UNCLASSIFIED

2/2 034 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0055638

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IRRADN. OF ISOTACTIC POLYPROPYLENE (I) FILMS (80 MU THICK) WITH GAMMA RAYS (15-200 MEGARADS) PRODUCED ALLYL (II) AND POLYENE (III) RADICALS. THE PHOTO INITIATED REACTIONS OF THE RADICALS WERE INVESTIGATED BY EPR SPECTROSCOPY AT 77DEGREESK. ON CONTACT WITH O, II AND III RADICALS WERE CONVERTED TO PEROXIDE RADICALS R PRIME1 AND R PRIME2 HAVING IDENTICAL EPR SPECTRA. THE TOTAL CONCN. OF R PRIME1 AND R PRIME2 IN I INCREASED 3 FOLD FOLLOWING IRRADN. WITH LIGHT OF LAMBDA IS SMALLER THAN 280 NM. A MERCHANISM, INVOLVING THE FORMATION OF REACTIVE SITES BY A CHAIN PROCESS, WAS PROPOSED.

UNCLASSIFIED

USSR UDC 539.3:4

VOLKOV, S. D., GIRS, V. N., DENISOV, Yu. V., KLINSKIKH, N. A., and KOMISSAROVA, M. L., Sverdlovsk, Ural Polytechnic Institute imeni S. M. Kirov

"On Methods of Solving Problems of Thermoelasticity"

Kiev, Problemy Prochnosti, No 5, May 73, pp 3-8

Abstract: The previously by one of the authors suggested new method of applying Green's functions of Laplace equation for derivation of universal algorithms for isothermic problems, which was propagated to problems of thermoelasticity (Ibid.; Volkov, S. D., et al., No 2, 1972), presented the solution by a series of quadratures the convergence of which was demonstrated on an example with already known solution. Some results of a further development of this method are reported. It is demonstrated that by known Green's function of Laplace equation of a given domain, the reduction to a series of quadratures can be applied to the solution of a disconnected boundary problem of

USSR

VOLKOV, S. D., et al., Problemy Prochnosti, No 5, May 73, pp 3-8

thermoelasticity of homogeneous isotropic bodies. General conditions of the uniform convergence of this series are determined. The distribution of stresses in an infinite circular cylinder loaded with radial forces in an asymmetric and non-standard temperature field was determined. Twenty six formulas, four bibliographic references.

2/2

1/2 009 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--SKIN PLASTY IN KIBE OF THE PATELLAR REGION -U-

AUTHOR--KLINTSEVICH, G.N.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 3, PP 81-83
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SKIN GRAFT, PLASTIC SURGERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0640 STEP NO--UR/0589/70/104/003/0081/0083

CIRC ACCESSION NO--AP0102626
UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102626

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESTORATION OF THE SKIN COVER IN THE PATELLAR REGION IN A KIBE, GRADE III, WAS GAINED BY MEANS OF FREE SKIN PLASTY. IN A KIBE, GRADE IV, SKIN PLASTY WAS SUCCESSFUL ONLY AFTER TANGENTIAL OSTEONECRECTOMY OF THE PATELLA, HOWEVER, LATE RESULTS WERE POOR AND RECOVERY WAS OBSERVED ONLY AFTER SKIN PLASTY ACCORDING TO THE ITALIAN TECHNIC.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--SKIN PLASTY IN KIBE OF THE PATELLAR REGION -U-

AUTHOR--KLINTSEVICH, G.N.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 3, PP 81-83
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SKIN GRAFT, PLASTIC SURGERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0640 STEP NO--UR/0589/70/104/003/0081/0083

CIRC ACCESSION NO--AP0102626

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102626

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESTORATION OF THE SKIN COVER IN THE PATELLAR REGION IN A KIBE, GRADE III, WAS GAINED BY MEANS OF FREE SKIN PLASTY. IN A KIBE, GRADE IV, SKIN PLASTY WAS SUCCESSFUL ONLY AFTER TANGENTIAL OSTEONECRECTOMY OF THE PATELLA, HOWEVER, LATE RESULTS WERE POOR AND RECOVERY WAS OBSERVED ONLY AFTER SKIN PLASTY ACCORDING TO THE ITALIAN TECHNIC.

UNCLASSIFIED

Acc. Nr: AP0047358 Ref. Code: UR0589

PRIMARY SOURCE: Vestnik Khirurgii imeni I. I. Grekova, 1970, Vol 104, Nr 1 , pp 98-101

SURGICAL TREATMENT OF FROST-BITEN FINGERS

By G. N. Klintsevich

The analysis of preserving surgical treatment of 218 fingers in 54 patients with frostbite is given. A total of 340 operative interventions including 72 free skin plasties have been performed. The technic, terms and most rational methods of replacement of the wound defect after amputation of fingers are described.

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REEL/FRAME

19790884

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1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--NORMS OF THE ENZYMIC ACTIVITY OF LEUKOCYTES -U-

AUTHOR-(05)-MIKHEYEVA, A.I., KARDOS, V.S., KLIONSKAYA, A.G., MAGID, E.M., MAGID, A.E.

COUNTRY OF INFO--USSR

SOURCE--LAB. DELO 1970, (1), 5-7

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LEUKOCYTE, ENZYME ACTIVITY, LYMPHOCYTE, ESTERASE, PHOSPHATASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0212 STEP NO--UR/9099/70/000/001/0005/0007

CIRC ACCESSION NO--AP0119208

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0119208
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ENZYMIC ACTIVITIES IN LEUKOCYTES OF 50 HEALTHY MEN WERE DETD. BY THE KAPLOW METHOD (1955). ALK. PHOSPHATASE IN NEUTROPHILS WAS 5-67 UNITS, MEAN 27.5 UNITS. ACCORDING TO THE ACTIVITY OF ACID PHOSPHATASE (I) LEUKOCYTES WERE CLASSED INTO 4 GROUPS. (1) NO TIVITY F CYOPLASMA DI NOT CONT IN GRANULES 2) CYTO LA ZA W TH ZS THM O EQ L T 5 RA LES ( ) 6-20. (4) LARGER THAN 20 GRANULES. IN NEUTROPHILS, THE 1ST 2 GROUPS WERE MOST COMMON (MEAN 38.6 UNITS); 8-62PERCENT OF THE NEUTROPHILS CONTAINED I. LYMPHOCYTES CONTAINED 6-60 UNITS (MEAN 26.8 UNITS) I. NONSPECIFIC ESTERASE (II) ALSO CLASSED LEUKOCYTES INTO THE SAME GROUPS AS I AND IN NEUTROPHILS IT ACTVITY WAS T HATOF LEUKO Y GROUPS 3; 20-90PE CENT OF THE LYMPHOCYTES XONTAIN D TIVE II (1 -13 UN TS, MEAN 72.4 UNITS).
FACILITY: GL. KLIN. VOEN. GOS. IM. BURDENKO, MOSCOW, USSR.

UNCLASSIFIED

1/2 038 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--INTERSYMBOL INTERFERENCE DURING DATA TRANSMISSION IN MINIMUM PHASE CHANNELS -U-

AUTHOR--KLIOT, YE.I.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROSVIAZ', VOL. 24, MAR. 1970, P. 46-53

DATE PUBLISHED----MAR70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--DATA TRANSMISSION, AMPLITUDE FREQUENCY CURVE, SIGNAL INTERFERENCE, Q FACTOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1161 STEP NO--UR/0106/70/024/000/0046/0053

CIRC ACCESSION NO--AP0120008

UNCLASSIFIED

2/2 038 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0120008

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE PROBLEM OF SELECTING THE SHAPE OF THE AMPLITUDE FREQUENCY CHARACTERISTICS FOR A MINIMUM PHASE TYPE CHANNEL WITH ALLOWANCE FOR INTERSYMBOL INTERFERENCE AND SMOOTH NOISE. THE MEAN ERROR PROBABILITY IS CALCULATED FOR DATA TRANSMISSION IN A CHANNEL WITH A NEAR OPTIMAL AMPLITUDE FREQUENCY CHARACTERISTIC (USING THE CHANNEL Q FACTOR AS THE OPTIMALITY CRITERION).

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--EXOTHERMIC MIXTURE FOR STEEL POURING -U-

AUTHOR-(05)-ASTROV, YE.I., KLIPOV, A.D., KONYSHEV, V.I., LEYBOVICH, P.M., PAKHOMOV, N.A.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 262,329
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970 47(6)
DATE PUBLISHED--26JAN70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--METALLURGIC PATENT, METALLURGIC PLANT, EXOTHERMIC PROCESS, SLAG, FOUNDRY TECHNOLOGY, STEEL MANUFACTURE PROCESS, FLUORITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/1462 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0126993
UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AA0126993
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXOTHERMIC MIXT., FOR PREPG. SLAG DURING THE CASTING OF STEEL, HAS THE FOLLOWING COMPN. SILICOCALCIUM 25-35, CA,(NO SUB3) SUB2 OR KNO SUB3 5-15, FE CINDER 20-5, A SUBSTANCE CONTG. B OXIDES 1-10 WT. PERCENT, AND FLUORITE THE REMAINDER.
FACILITY: GORKOVSKIY METALLURGICHESKIY ZAVOD.

UNCLASSIFIED

USSR

UDC 576.858.25.097.2.077.3

(6)

GAYDAMOVICH, S. Ya., OBUKHOVA, V. R., MEL'NIKOVA, Ye. E., VOLOKHOVA, N. A., KIRYUSHCHENKO, T. V., KLISENKO, G. A., KRASNOBAYEVA, Z. N., LAVROVA, N. A., SHARIPOVA, Sh. A., and SHANOYAN, N. K., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"Use of Ultrasound to Increase Arbovirus Antigen Activity in Serological Tests in Vitro"

Moscow, Voprosy Virusologii, No 3, May/Jun 1973, pp 356-360

Abstract: An ultrasonic technique to increase antigen activity was tested on five groups of arbovirus antigens. Antigens prepared from suckling mouse brain by the sucrose-acetone and freon methods, or in chick fibroblasts without preliminary processing, were subjected to 30-40 sec of 20,000-25,000 Hz ultrasonic treatment. Titers determined before and after treatment by hemagglutination inhibition (HAI), complement fixation (CF), and agar gel diffuse precipitation (AGDP) were compared. For group A and B arboviruses CF and HAI titers increase 4-8 times after treatment, while AGDP titers remained unchanged. In the Kemerovo-Bunyamvera-California group, the CF titers increased by 2-4 times, and no change was observed in HAI titers. CF titers increased 2-8 times for all but Neapolitan arbovirus of the Phlebotomus group.
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GAYDAMOVICH, S. Ya., et al., Voprosy Virusologii, No 3, May/Jun 1973, pp 356-360

The only HAI response in this group was by Bujaru arbovirus, and only after treatment the AGDP titers increased in a few cases. Ultrasonic treatment had an especially favorable effect on CF and AGDP titers in the Uukuniemi group, while changes in HAI titers were less pronounced. Thus ultrasonic treatment normally facilitates antigen activity in CF and HAI reactions and has a variable effect on the AGDP reaction. Treated antigens did not lose specificity. It is concluded that ultrasonic treatment can be used not only to increase titers but also to reveal titers of relatively inactive antigens.

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USSR

UDC 576.858.25.01(476.9)

SKOFENKA, P. G., CAYDANOVICH, S. Ya., OKUNKOVA, V. R., KOCHERAR', N. D., YAROVOY, P. I., KLISENKO, G. A., and MEL'NIKOVA, Ye. E., Scientific Research Institute of Hygiene and Epidemiology, Kishinev, Moldavian SSR, and Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"Isolation of Kharagysh Virus From the Kemerovo Group in the Moldavian SSR"

Moscow, Voprosy Virusologii, No 6, 1972, pp 709-711

Abstract: A virus isolated in 1971 from an Ixodes ricinus pool collected from sheep in the Moldavian SSR, named Kharagysh by the authors, was lethal to 2-4 day mice and not so to 3-4 week mice. The virus passed through a 100 nanometer pore filter but was retained at 50 nanometers. Sodium desoxycholate and ether had little effect on virus titers. Inasmuch as it was impossible to obtain a hemagglutinating antigen to the virus by usual methods, identification studies were carried out by the complement-fixation reaction. Tests with immune ascitic fluid reactive to several arboviruses were positive only for the Kemerovo group. Moreover, within that group the most pronounced cross-reaction was with the Tribech subgroup. Thus it is demonstrated that Kharagysh virus belongs to the Kemerovo-Tribech group. Apparently I. ricinus plays an important carrier role in the infection cycle.
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USSR

UDC 576.858.25

GAYDAMOVICH, S. YA., NIKIFOROV, L. P., GROMASHEVSKIY, V. L., OBUKHOVA, V. B., KLISENKO, G. A., CHERVONSKIY, V. I., and NEL'NIKOVA, YE. E., Institute of Virsology Imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, Moscow

"New Arbovirus Sumakh from the Uukuniemi Group"

Moscow, Voprosy Virusologii, No 1, Jan/Feb 71, pp 21-25

Abstract: Isolation of the arbovirus Sumakh in the USSR is described for the first time. The virus was obtained from the hearts and lungs of blackbirds (Turdus merula) collected in Azerbaydzhan. The virus was similar to but not identical with Uukuniemi, as shown in the agar gel diffusion test, but not by the complement fixation test. The isolated virus was pathogenic for suckling white mice. An incubation period of 11 days was found upon intracerebral, which in subsequent passages was reduced to 96 hours. Mice 1-3 days of age were most susceptible. An antigen for hemagglutination reactions was prepared from suckling mouse brains by the sucrose-acetone method. The titer of this antigen did not exceed 1:64. Subsequent workup with Tween-80 and ether raised the titer to 1:256-1:512. When the antigen was prepared by the freon method, the material was enriched with Tween-80 and ether and 1/2

USSR

GAYDAMOVICH, S. YA., et al., Voprosy Virusologii, No 1, Jan/Feb 71, pp 21-25

could serve for agglutination of erythrocytes in dilutions of 1:32-1:64. Optimum hemagglutination was achieved at pH 5.8 and at a temperature of 37°C. According to preliminary data on agar diffusion, the Sumakh virus is not identical with the Uukuniemi virus. A detailed study of the antigenic structure of Sumakh virus is under way.

Pathology

UDC 616.988.25-022.9-091

USSR

GUSOVSKIY, Ya, M., KLISENKO, G. A., and GAYDAMOVICH, S. Ya, Institute of Infectious Diseases, Ministry of Health Ukrainian SSR, Kiev, and the Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"Morphological Changes in Experimental Infections With the Sumakh Virus (Uukuniyemi Influenza)"

Moscow, Voprosy Virusologii, No 2, 1973, pp 167-171

Abstract: This communication consists of the first pathomorphologic description of mice infected with the Sumakh virus. Infections were induced in 1-2 and 6-7 day-old mice by intracerebral injection of a brain suspension containing a 100 LD_{50} dose of the virus, strain 540, isolated in Azerbaydzhan in 1968. Prior to injection, the suspension was filtered through a 220 nm pore size Millipore filter to exclude bacterial infection. Control animals received a similarly treated suspension of a normal brain. Histologic sections were obtained daily, commencing with the 3rd post-infection day (prior to the appearance of clinical symptoms), fixed in 10% formalin, and stained with hematoxylin-eosin and thionine by the method of Nissl. Histologic evaluation showed that prior to the development of clinical signs, encephalitis had already developed by the 3rd day with primary inflammation of the dorsal regions of the subcortical ganglia (optic thalamus), gray matter of the horn of Ammon, and the ventral sections of the

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GUSOVSKIY, Ya. M., Voprosy Virusologii, No 2, 1973, pp 167-171

brain stem. The cells showed partial destruction or complete karyolysis. Infiltration of the affected parenchyma consisted primarily of segmented leukocytes, with some lymphocytes and an occasional histiocyte. Later, an inflammatory vascular reaction occurred which was fairly limited. With the passage of time new regions became involved, but the histotopographic distribution of the lesions remained the same. On the 4th day there was evidence of phagocytosis, accelerated lymphocyte infiltration, and more discrete glial hyperplasia. On the 6-7th day, the infiltrate consisted predominantly of lymphocytes, along with a small number of monocytes, histiocytes, and glial elements. Leptomeningitis developed in each of the infected animals with localization of the inflammatory infiltrates in the sulci. Leptomeningitis in the control mice was apparently due to injection of the brain suspension and the attendant trauma, and parenchymal cells at some distance from the inflammatory foci were seen to undergo dystrophic changes, from tigrolysis to frank lysis, while glial reaction was limited to irregular hyperplasia in the white and gray matter. In the experimental animals the inflammatory changes in the 1-2 and the 6-7 day old mice (at the time of injection) were comparable, with the older animals only showing a tendency for earlier localization of the lesions. In addition, the experimental animals showed productive focal inflammation and

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GUSOVSKIY, Ya. M., Voprosy Virusologii, No 2, 1973, pp 167-171

dystrophic changes in the skeletal muscles, while no such changes were observed in the control mice. Lesions of the internal organs were noncontributory in that they did not differ from those commonly encountered in other infections or intoxications. In terms of the morphologic picture, Sumakh virus encephalitis may be characterized as a selective, acute, primary polioencephalitis.

3/3

USSR

UDC 632.95.028:543.253

SUPIN, G. S., KLISENKO, M. A., and VEKSHTEYN, M. SH., All Union Scientific Research Institute of Chemical Plant Protective Agents and All Union Scientific Research Institute of the Hygiene and Toxicology of Pesticides, Polymers, and Plastic Materials

"Polarographic Determinations of the Residual Quantities of Fungicides Derivatives of Dithiocarbamic Acids"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 11, No 11 (121), 1973, pp 40-42

Abstract: The authors studied the conditions for polarographic determination of microquantities of tsineb, polymarcine, polycarbacine, ferbam, tsiram, and ethylenethiuram disulfide in biological material. The analytical method has been reported in detail. The minimal quantity of pesticides determined by this method is 80 μg/ml (for ground fruit 10^{-3}%, for fibers 10^{-2}%). In analyzing untreated material, the sensitivity drops by a factor of 10.

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USSR

UDC 632.95

PIS'MENNAYA, M. V., KLISENKO, M. A.

"Thin-Layer Chromatography of Residual Quantities of New Organophosphorus Pesticides"

Probl. analit. khimii [Problems of Analytic Chemistry -- Collection of Works], Vol 2, Moscow, Nauka Press, 1972, pp 111-115 (Translated from Referativnyy Zhurnal Khimiya, No 24(II), 1972, Abstract No 24N584, by T. A. Belyayeva)

Translation: Optimal conditions are found for chromatography for the pesticides khlorofos, rogor, kil'bal', sayfos, trikhlormetafos-3, fenkapton, tsidial, fozalon, karbofos, butifos, ftalofos. The adsorbent is type KSK or ShSK silica gel, the mobile solvent is $CHCl_3$, the developer is bromophinol reagent. The conditions were used for analysis of residual quantities of insecticides in air, water and vegetable products. The preparations were extracted from the specimens analyzed with ether, n-hexane, $CHCl_3$. Adsorption chromatography on columns with Al_2O_3, MgO, silica gel, bentonite and freezing were tested as methods for removal of waxes from the extracts. The most satisfactory results were produced by freezing the waxes from an acetone solution (-70°) or a water-acetone solution (0°). The sensitivity of the determination is 5-10 μg preparation in a specimen or 0.1-0.2 mg/kg.

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USSR

KLISENKO, M. A.

"All-Union Symposium on Pesticide Residues and Their Contamination in Foods, Feeds, and the Surface Environment (Analytical Methods Section)"

Moscow, Zhurnal Analiticheskoy Khimii, Vol 27, Vyp 8, 1972, pp 1656-1657

Abstract: This meeting on the "Introduction of Chemical Technology into Agriculture" was held Nov 17-19, 1971, in Tallin. Topics covered centered around methods of analyzing for pesticides, including the theory of current analytical techniques -- thin-layer chromatography, polarography, colorimetry and enzyme colorimetry, extraction-photometric techniques, and special emphasis on gas-liquid chromatography -- the development of new techniques and improvements for existing ones, and the application of techniques to analyzing for specific compounds in a variety of samples and to analyzing a specific sample for a variety of compounds.

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USSR

UDC 615.9.074

KLISENKO, M. A., LEBEDEVA, T. A., and YURKOVA, Z. F.

"Chemical Analysis of Traces of Poisons"

Moscow, Khimicheskiy analiz mikrokolichestv yadokhimikatov (cf. English above), Meditsina, 1972, 312 pp (from Khimicheskiy analiz mikrokolichestv yadokhimikatov, pp 2-5, 308-312)

Translation: This book is a handbook on the analysis of traces of poisons. On the basis of many years of experience in the field of analyzing traces of poisons, the authors have included the most sensitive, reliable and simple chemical procedures for analyzing poisons in the air, water, soil, food products, and biological material in this book.

The book opens with a chapter in which the theoretical principles of the basic poison analysis techniques are discussed: photometric, spectrophotometric, polarographic and chromatographic.

In the book procedures are presented for determining all of the most widespread groups of poisons: organophosphorus, organochlorine, copper-containing,

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KLISENKO, M. A., et al., Khimicheskiy analiz mikrokolichestv yadokhimikatov, Meditsina, 1972, 312 pp (from Khimicheskiy analiz mikrokolichestv yadokhimikatov, pp 2-5, 308-312)

mercury-containing, dinitrophenols, carbamates and dithiocarbamates, poisons of plant origin and others. The procedures for analyzing herbicides are put in a separate chapter.

The description of the analysis procedures is preceded by brief information on the physical-chemical properties of the compounds. At the end of the book there is information about the limiting allowable poison concentrations in the air and water and also the admissible residual amounts of these compounds in food products and forage.

When selecting the reported general theoretical and practical data, we had in mind the interests of those readers who wish to approach the use of the procedures recommended in the book creatively.

The book is designed for chemists and sanitation is physicians at the rayon, municipal and oblast sanitation-epidemiological stations and other specialists working in the field of industrial sanitation chemistry, hygiene of

USSR

KLISENKO, A. A., et al., Khimicheskiy analiz mikrokolichestv yadokhimikatov, Meditsina, 1972, 312 pp (from Khimicheskiy analiz mikrokolichestv yadokhimikatov, pp 2-5, 308-312)

labor, hygiene of foods, and public and communal hygiene. It will be useful to toxicologists, forensic chemists, biochemists, veterinary doctors, agronomists, and so on.

The book can also be used as a training aid for students of the medical and other institutions of higher learning.

Introduction

At this time the list of chemicals used in the national economy is growing. The application of chemical means of plant protection from pests, diseases and weeds and also chemical means of protecting animals from ectoparasites is acquiring great significance. The research in the toxicity of applied compounds and their normalization in the external environment is expanding simultaneously. The network of laboratories studying the poison content in the air, water, soil, food products and biological material is growing.

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KLISENKO, A. A., et al., Khimicheskiy analiz mikrokolichestv yadokhimikatov, Meditsina, 1972, 312 pp (from Khimicheskiy analiz mikrokolichestv yadokhimikatov, pp 2-5, 308-312)

However, basic research to study the biological effect of chemicals, deep penetration into the intimate links of the mechanism of their effect on man, animals and plants, sanitary monitoring of the pesticide content in the environment, the diagnosis and prophylaxis of possible acute and chronic poisonings -- these cannot be realized in the absence of reliable methods of qualitative detection and quantitative analysis of these chemicals and the products of their conversion in various media.

The indicated methods must be distinguished by high sensitivity. They must define the residual amounts of pesticides on the level of the maximum permissible concentrations (MPC) or the maximum residual amounts (MRA) which in the majority of cases do not exceed fractions of a milligram per cubic meter of air or per kilogram of food product. Thus, we are talking about analyzing tenths of a microgram of pesticide in a sample in cases where no poison content is admissible, even appreciably smaller amounts. The method must also be selective since several poisons can be present in a sample belonging to various groups of compounds. Transformations of the compounds

UDC: 632.95

USSR

GIRENKO, D. B., KLISENKO, M. A.

"Determination of Certain Pesticides in Surrounding Objects by Gas-Liquid Chromatography"

Probl. analit. khimii [Problems of Analytic Chemistry -- Collection of Works], Vol 2, Moscow, Nauka Press, 1972, pp 39-43 (Translated from Referativnyy Zhurnal Khimiya, No 24(II), 1972, Abstract No 24N578, by T. A. Belyayeva)

Translation: The method of GLC is used to determine organic chlorine and phosphorus-containing pesticides in water, air and food products. Analysis is performed on a chromatograph with an electron-capture detector and a stainless steel column filled with chromasorb W with 10% nonpolar silicone oil type DS-200. The temperature of the column and detector is 200°, of the specimen evaporation chamber 220°, N_2 carrier gas rate 120 ml/min. The temperature was reduced by 20° for organophosphorus pesticides. Identification of components is performed by relative delay time in comparison to Aldrin. Compounds are extracted from specimens being analyzed with n-hexane. Extracts of specimens containing no waxes were purified by TLC on Al_2O_3 in the THF-MeCN system (1:1), then in MeCN. Extracts of specimens containing large quantities of waxes were eluted from a layer of petroleum ether adsorbent, purified in a

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Girenko, D. B., Klisenko, M. A., Probl. analit. khimii, Vol 2, Moscow, Nauka Press, 1972, pp 39-43

column with Al_2O_3 with pH 4.5-5.5, eluted with a mixture of hexane and ether (9:1). The sensitivity of the determination is 0.005 mg/kg.

Analytical Chemistry

UDC 632.96

USSR

KLISENKO, M. A., LEBEDEVA, T. A., and YURKOVA, Z. F.

"Chemical Analysis of Trace Amounts of Poisonous Chemicals"

Khimicheskiy analiz mikrokolichestv yadokhimikatov (cf. English above), Moscow, "Meditsina", 1972, 312 pp ill. 1 r. 66 k (from RZh-Khimiya, No 22, Nov 72, Abstract No 22N382)

Translation: The work discusses the simplest, most sensitive and reliable methods of determining poisonous chemicals -- organophosphorus, organochlorine, copper-containing and mercury-containing dinitrophenols, carbamates and dithiocarbamates -- in the air, water, soil, food products and biological materials. In addition, the theoretical principles are given for basic methods of analyzing poisonous chemicals -- photometric, photospectrometric, polarographic and chromatographic. Information is given on the physical and chemical properties of chemicals, maximum permissible concentrations in the air and water, and also the permissible residual quantities of the chemicals in food products and animals feed. The authors generalize the experience on extracting chemicals from a sample and purifying the extracts. (From the abstract).

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USSR UDC 632.95

KAGAN, YU. S., KLISENKO, M. A., and PAN'SHINA, T. N.

"Some Questions in the Quantitative Toxicology of Organophosphorus Compounds"

V sb. Khimiya i primeneniye fosfororgan. soyedin. (Chemistry and Application of Organophosphorus Compounds -- Collection of Works), Moscow, "Nauka," 1972, pp 438-448 (from RZh-Khimiya, No 14, 25 Jul 72, Abstract No 14N448 by T. A. Belyayeva)

Translation: In vivo experiments during study of the neutralization of organophosphorus compounds (OPC) confirmed the regularity noted during in vitro investigations, viz. that there is a correlation between the rate of neutralization and the degree of toxicity. Neutralization of OPCs in insects takes place considerably more slowly than in the organism of warm-blooded animals, and this is the basic reason for the selectivity of OPCs for insects.

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USSR

UDC 632.95

SHMIGIDINA, A. M., KLISENKO, M. A.

"Microanalysis of Acrex and Caratan in Objects of the External Environment and Biological Examples by the Method of Thin-Layer Chromatography"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryaz-neniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on the Investigation of Pesticide Residues and Preventive Contamination of Food Products, Fodder and Environment), Tallin, 1971, pp 216-219 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N480)

Translation: The nitrophenol pesticides acrex and caratan are analyzed in technical preparations, the air, water, objects of plant and animal origin by the method of thin-layer chromatography in silica gel KSK (0,15 mm) fixed with gypsum in the hexane-acetone (4:1) system. Zn-powder is introduced into the sorbent, in the solution of color-forming reagent, AcOH; the amino compounds are analyzed with ninhydrin.

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VEKSHTEYN, M. SH., KLISENKO, M. A.

"Chromatographic Separation of Dimethyl and Ethylene-bis-dithiocarbamates and Their Conversion Products"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryaz-neniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on the Investigation of Pesticide Residues and Preventive Contamination of Food Products, Fodder and Environment), Tallin, 1971, pp 143-147 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N475)

Translation: Dimethyldithiocarbamates and ethylene-bis-dithiocarbamates are subjected to thin-layer chromatography on a reinforced layer of Al_2O_3 in various systems of solvents. In C_6H_6, acetone, MeOH and a mixture of n-hexane-C_6H_6-acetone (8:0.8:2), the magnitudes of R_f of compounds of the dimethyldithiocarbamate group decrease in the following series: S > tetramethylthiourea > > TMGD > cyram > DMDTK DMA, and the mobility of the compounds of the ethylene-bis-dithiocarbamate group increases in the series: cyneb (maneb, and so on) < < ethylenethiourea < ethylenethiurammonosulphide < S. The compounds of the dimethyldichiocarbamate group are clearly separated by Al_2O_3 in the n-hexane-C_6H_6-acetone system (8:0.8:2 or 10:1:2.5), and the ethylene-bis-dithiocarbamates in the C_6H_6+DMFA (9:1) system. The adsorption capacity of the investigated compounds

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VEKSHTEYN, M. SH., et al., Tr. 2-go Vses. soveshch. po issled. ostatkov pesticidov i profilakt. zagryazneniya imi produktov pitaniya, kormov i vnesh. sredy, Tallin, 1971, pp 143-147

is discussed as a function of their structure and the specific molecular interaction with the sorbent surface.

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UDC 614.31-07:615.285.7

USSR

VERBLYUDOVA, N. I., and KLISENKO, M. A., Laboratory of the Analytical Chemistry of Pesticides, All-Union Scientific Research Institute of Hygiene and Toxicology of Pesticides, Polymers, and Plastics, Kiev

"Determination of Polychloropinene in the Presence of DDT and Other Organochlorine Pesticides in Foodstuffs"

Moscow, Voprosy Pitaniya, No 5, 1970, pp 89-91

Abstract: Polychloropinene is prohibited in foodstuffs consumed in the USSR, but the available methods for detecting it are inadequate because of their low sensitivity or lack of specificity in the presence of DDT and other organochlorine pesticides. A method is proposed which is simple, requires no costly reagents or apparatus, and is quite sensitive and specific. It involves extracting polychloropinene from a food sample with n-hexane, purifying the extract, and then chromatographing it in an ultrathin layer of silica gel. In view of the specific reaction of polychloropinene with silica gel, a mixture of n-hexane, methyl alcohol, and ammonia (10:4:0.3) proved to be effective in separating it from DDT. Bluish-green spots appear when polychloropinene is present.

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USSR UDC 614.31:635.63+613.32]:615.285.7.074

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"A Method for Determining Residual Amounts of the New Fungicide Acrex in Cucumbers and Drinking Water"

Moscow, Voprosy Pitaniya, No 5, 1970, pp 91-93

Abstract: Acrex, a new fungicide and contact acaricide, belongs to the group of nitrophenol pesticides and is used to control powdery mildew of cucumbers and apples. Its active substance is 2-(1'-methyl-n-propyl)-4,6--dinitrophenylisopropylcarbonate. The preparation is readily soluble in organic solvents and poorly soluble in water. The suggested method for determining it is based on extracting the fungicide from the sample under analysis with chloroform, distilling off the solvent, and chromatographing the sample in a thick layer of silica gel. Hexane-acetone (4:1) solvent is used as the mobile phase to separate acrex from the other substances being extracted. Acrex is determined quantitatively by visual comparison of the size and intensity of the color of the spot it produces with a spot of the standard solution. The proposed method revealed the presence of acrex in 91% of the cucumbers and 96% of the water samples tested.

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UDC 615.285.7.074:543.544

USSR

GIRENKO, B. D. and KLISENKO, M. A., All Union Scientific Research Institute of Hygiene and Toxicology of Pesticides, Polymers, and Plastics, Kiev

"Gas Chromatography of Organophosphorus Pesticides"

Moscow, Gigiyena i Sanitariya, No 5, 1970, pp 77-79

Abstract: Results of gas chromatography of five organophosphorus compounds (phosphamide, antio, metafos, thiofos, 5-chlorometafos-3) widely used as pesticides are presented. The analysis was conducted on a 2-column Shimadru GC-IC chromatograph with an electron capture detector. The chromatograms showed symmetrical peaks with a definite holdup time. Chromatography of a mixture of the substances did not result in the separation of all five components. The peaks partly overlapped but the characteristic maximum was retained, so that the preparations could be individually identified. The substances were identified by the holdup time, which was combined in some cases with additional identification by thin-layer chromatography. The article concludes with a description of the procedure used to determine the concentration of phosphamide in air.

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UDC 621.383:546.48'23

USSR

GAVRILENKO, N. V., KLOCHKOV, V. P., SVECHNIKOV, S. V., and TORCHUN, N. M., Institute of Semiconductor, Academy of Sciences Ukrainian SSR

"Photoelectric Properties of Epitaxial Layers of $CdS_x \cdot Se_{1-x}$"

Moscow, Izvestiya Akademii Nauk SSSR -- Neorganicheskiye Materialy, Vol 6, No 10, Oct 70, pp 1787-1791

Abstract: The article describes results of a study of the photoelectric and electric properties of photosensitive layers of $CdS_x \cdot Se_{1-x}$ solid solutions (x = 1, 0.9, 0.7, 0.5, 0.3, 0.1) 5-20 microns thick, obtained by deposition from a molecular beam in a vacuum of the order of $5 \cdot 10^{-5}$ torr. Electron-diffraction and X-ray studies showed that at substrate temperatures of 350-420° C single-phase monocrystalline layers of CdS, $CdS_x \cdot Se_{1-x}$, CdSe with photocurrent maximums in the 510-720 nm region grow on mica. It was found that there is practically no difference between the photoelectric and electric parameters of the single-crystal layers and those of volume single crystals of the solid solutions.

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TITLE--GAS CHROMATOGRAPHY IN ANALYZING RESIDUAL AMOUNTS OF ORGANOCHLORINE PESTICIDES -U-

AUTHOR-(02)-GIRENKO, D.B., KLISENKO, M.A.

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GAS CHROMATOGRAPHY WAS EMPLOYED TO MEASURE RESIDUAL AMOUNTS OF ORGANOCHLOROUS PESTICIDES (HEXACHLOROCYCLOHEXANE, HEPTACHLORE, DDT, DDE, ETC). THE EFFECTIVENESS OF UTILIZING THE COLUMN AND GOOD QUALITY OF PARTITION FOR A NUMBER OF THE MOST WIDELY USED PESTICIDES WERE ASCERTAINED. A DOUBLE STAGE PURIFICATION OF THE DAIRY SAMPLES EXTRACTS, I.E. DISTRIBUTION OF THE COMPONENTS BETWEEN TWO NONMIXING LIQUIDS AND ADSORPTION CHROMATOGRAPHY ON ACID ALUMINUM OXIDE ARE SUGGESTED. MEAN DETECTION OF THE PREPARATION IS 65-76PERCENT, DETERMINATION SENSITIVITY, 0.005 MG-KG.

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USSR

GIRENKO, D.B. and KLISENKO, M.A., Laboratory of the Analytical Chemistry of Pesticides, All Union Scientific Research Institute of the Hygiene and Toxicology of Pesticides, Polymers, and Plastics

"Using Gas Chromatography to Analyze Residual Amounts of Organochlorine Pesticides"

Moscow, Voprosy Pitaniya, No 2, 1970, pp 62-66

Abstract: Residual amounts of DDT, Lindane, and other organochlorine pesticides in milk, cream, etc. were determined by gas chromatography with detection by electron capture. The relative volume trapped, number of theoretical plates, and height equivalent to the theoretical plate were determined from the chromatograms. The column and quality of separation of the substances analyzed were found to be quite effective. A two-stage process for purifying extracts of dairy products is suggested -- separation of the components between two nonmixing liquids, and adsorption chromatography on acid aluminum oxide. Sensitivity of determination was 0.005 mg/kg, and mean detection 65-76%. Analysis of samples of food in which no traces of organochlorine pesticides are permitted by law revealed not only the original compounds but also degradation products, formed under the influence of different factors in the course of accumulation of the toxic chemicals.

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