

1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--REDUCTION OF THE CUFe SUB2 O SUB4 -CuCR SUB2 O SUB4 SOLID SOLUTION
-U-
AUTHOR--(04)-ZALAZINSKIY, A.G., BALAKIREV, V.F., CHEBOTAYEV, N.M.,
~~CHUEAROV, G.I.~~
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1183-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--SOLID SOLUTION, CHEMICAL REDUCTION, CRYSTAL STRUCTURE, COPPER
COMPOUND, FERRITE, CHROMATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1411 STEP NO--UR/0078/70/015/005/1183/1185
CIRC ACCESSION NO--AP0135085
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0135085

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REDN. OF CUFE SUB1.75 CR SUB0.25 O SUB4 (SOLID. SOLN. OF TE CUFE SUB2 O SUB4 -CUCR SUB2 O SUB4 SYSTEM) IN H ATM. AT 1000DEGREES GAVE CU, FE, AND FE₂O₃ SUB2 O SUB4. THE REACTION PROCEEDED IN 7 STAGES WITH THE FORMATION OF TRIGONAL CUMO SUB2 (M EQUALS FE, CR) HAVING CRYST. LATTICE PARAMETERS A 3.028 PLUS OR MINUS 0.005 AND C 17.09 ANGSTROM AND SOLID SOLNS. (CU SUB0.5 FE SUB2.5 O SUB4) SUB(1.25-Y)-2.5. (CU SUB0.5 CR SUB2.5 O SUB4) SUB(Y-2.5) AND (FE SUB3 O SUB4) SUB0.8. (FE₂O₃ SUB2 O SUB4) SUB0.2 AS THE INTERMEDIATE SPECIES. THE RESULTS ARE ANALOGOUS TO THOSE OBTAINED FOR REDN. OF CUFE SUB1.75 AL SUB0.25 O SUB4. FACILITY: SVERDLOVSK. INST. MET., SVERDLOVSK, USSR.

UNCLASSIFIED

USSR

UDC 546.74'821'72'21:548.313

DUBROVINA, I. N., SHCHEPETKIN, A. A., and CHUFAROV, G. I., Institute of Metallurgy, Ural Scientific Center, Academy of Sciences USSR

"Peculiarities of Spinel Solid Solutions in the Ni-TiOFe-O System"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, No 8, 1972, pp 1459-1464

Abstract: The conditions of synthesis, mutual solubility of components, magnetic properties, and crystallochemical peculiarities (placement of cations on lattice nodes) in the three-component system NiFe_2O_4 - Fe_3O_4 - Fe_2TiO_4 were studied. It was concluded that full mutual solubility of the components in this system occurs. The parameters of the crystalline lattice of the ternary solid solution follows the additive rule with good accuracy. The concentration dependences of magnetic moment of saturation and Curie temperature of the binary system $(\text{Fe}_2\text{TiO}_4)_c$ $(\text{Fe}_2\text{O}_4)_{1-c}$ and certain ternary compositions were measured. The distribution of cations among octahedral and tetrahedral nodes of the spinel structure in the system was similar to the distribution produced additively from the distributions characteristic for the individual components.

1/1

1/2 034 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--SOME HEMODYNAMIC INDICES IN PNEUMONECTOMY FOR TUBERCULOSIS UNDER
FLUOROTHAN AND ETHER ANESTHESIA -U-
AUTHOR--CHUFAROV, V.N. C

COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 3, PP
100-102
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEMODYNAMICS, SURGERY, TUBERCULOSIS, ANESTHESIA, ETHER, HEART
RATE, BLOOD PRESSURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--1986/0853

STEP NO--UR/0589/70/104/003/0100/010?

CIRC ACCESSION NO--AP0102814

UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102814

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COMPARATIVE ANALYSIS OF THE PULSE RATE, SYSTOLIC ARTERIAL PRESSURE, PULSE AND VENOUS PRESSURE UNDER FLUROTHAN AND ETHER ANESTHESIA WAS MADE. THE ANALYSIS HAS EVIDENCED THAT IN CONDUCTION OF NARCOSIS STAGE III SUB1 DURING THE OPERATION SIMILAR QUALITATIVE CHANGES IRRESPECTIVE OF THE TYPE OF THE USED ANESTHETIC (FLUROTHAN OR ETHER) WERE OBSERVED. STATISTICALLY RELIABLE QUANTITATIVE ALTERATIONS WERE OBSERVED IN THE AMOUNT OF SYSTOLIC AND PULSE PRESSURE DURING INTRATHORACIC STAGE OF SURGERY. IN FLUROTHAN ANESTHESIA BOTH PRESSURES WERE 7 MM-HG LOWER THAN IN ETHER ONE.

UNCLASSIFIED

USSR

UDC 669.295.053.4.068

PETUNINA, N. I., CHUFAROVA, I. G.

"Extraction of Titanium From Hydrochloric Acid Solutions With Secondary Higher Alcohol"

Tr. In-ta. Khimii. Ural'sk. Fil. AN SSSR [Works of the Institute of Chemistry, Urals Affiliate, Academy of Sciences, USSR], 1970, No. 20, pp. 123-126. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G221 by the authors).

Translation: Results are presented from studies of the extraction of Ti by secondary higher alcohols from hydrochloric acid solutions as a function of the content of HCl (2-12 mol/l) and Ti (5-160 g/l TiO₂) in the initial solutions, and the influence of the salting out effect of H₂SO₄ on the distribution of Ti is studied. The greatest extraction of Ti is achieved by extraction from solutions containing 10-12 mol/l HCl. The presence of H₂SO₄ increases the extraction of Ti chloride in the organic phase. As the concentration of Ti changes in the initial solution, the extraction in the organic phase decreases as a result of formation of non-extractable polymer forms of Ti. 3 figs; 7 biblio refs.

1/1

USSR

UDC 669.21/23

MASLENITSKIY, I. N., and CHUGAYEV, L. V.

Metallurgiya Blagorodnykh Metallov (Metallurgy of Noble Metals), Moscow, Izdatel'stvo Metallurgiya, 1972, 368 pp

Translation of Annotation: Fundamental aspects of the theory and practical metallurgy of noble metals are presented. Considerable attention is given to physicochemical processes for the extraction of gold and silver from raw ores. Thermodynamics and kinetics of cyanidation, precipitation, and processes for refining gold and silver are considered. Recommendations in the treatment of auriferous ores using ion-exchange resins are presented. The most widely used and promising methods for extracting gold from unyielding ores and concentrates are given. The last chapter is devoted to methods of extracting and refining platinum group metals. The book is intended to be used as a textbook by students at higher educational institutions specializing in metallurgy. It can also be useful to aspirants and scientific research workers.

Table of Contents:

Page

Foreword 3

Introduction 4

1/7

USSR

MASLENITSKIY, I. N., and CHUGAYEV, L. V., Metallurgiya Blagorodnykh Metallov, Izdatel'stvo Metallurgiya, 1972, 368 pp

	Page
Chapter 1. Main Stages in the Historical Development of the Metallurgy of Gold and Silver	6
Chapter 2. Physical and Chemical Properties of Gold and Silver and of Their Components	12
Chapter 3. Gold and Silver Alloys	20
Chapter 4. Forms of Gold and Silver in Ores	29
1. Brief Geochemical Data on the Formation of Auriferous Deposits	29
2. Gold Minerals	32
3. Silver Minerals	36
Chapter 5. Preparation of Ores for the Extraction of Gold and Silver	37

2/7

USSR

MASLENITSKIY, I. N., and CHUGAYEV, L. V., Metallurgiya Blagorodnykh Metallov, Izdatel'stvo Metallurgiya, 1972, 368 pp

	Page
1. Crushing and Grinding of Auriferous Ores	37
2. Sorting and Primary Beneficiation of a Coarse Ore.....	43
Chapter 6. Gravitational Methods of Extracting Gold From Ores .	45
1. Extraction of Gold From Placer Gold Deposits	45
2. Gravitational Beneficiation Methods for Raw Auriferous Ores	47
Chapter 7. Extraction of Gold and Silver by the Amalgamation Process	59
1. Theoretical Basis of the Process	59
2. Amalgamation Methods	62
3. Treatment of the Amalgam	67
4. Amalgamation-Gravitational Plants	67
Chapter 8. Cyanidation of Auriferous Ores	70
1. Thermodynamics of the Cyanidation Process	70
2. Kinetics of the Cyanidation Process	74

3/7

USSR

MASLENITSKIY, I. N., and CHUGAYEV, L. V., Metallurgiya Blagorodnykh Metallov, Izdatel'stvo Metallurgiya, 1972, 368 pp

	Page
3. Electrochemical Solution of Noble Metals	88
4. Hydrolysis of Cyanide Solutions. Protective Alkali....	104
Chapter 9. Interaction of Cyanide Solutions in the Presence of Metal Impurities	107
Chapter 10. Actual Application of the Cyanidation Process	122
1. Cyanidation Methods	122
2. Leaching by Infiltration	123
3. Leaching by Mixing the Pulp	132
4. Separation of Gold-Containing Solutions From Tailings..	147
Chapter 11. Precipitation of Noble Metals From Cyanide Solutions	174
1. Precipitation With Zinc	174
2. Precipitation With Aluminum	202
3. Precipitation With Ion Exchangers	202
4. Precipitation With Wood and Activated Carbon	220
5. Extraction	225

4/7

USSR

MASLENITSKIY, I. N., and CHUGAYEV, L. V., Metallurgiya Blagorodnykh Metallov, Izdatel'stvo Metallurgiya, 1972, 368 pp

	Page
Chapter 12. Technological Schemes for the Extraction of Gold From Quartz and Oxide Ores	229
1. Crushing and Grinding of Auriferous Ores	229
2. Slime Scheme and Metallurgical Balance	231
3. Purification of Waste Waters From Gold-Extracting Plants	241
4. Safety Measures in Handling Mercury and Cyanides	244
Chapter 13. Extraction of Gold From Unyielding Ores and Concentrations	
1. A General Characteristic of Unyielding Ores and Concentrations	247
2. Flotation Beneficiation of Auriferous Ores	250
3. Ores With Finely-Distributed Gold Particles	255
4. Cuprous Ores	268
5. Antimonous and Arsenic Ores	272
6. Carbonaceous Ores	274
7. Sludge Ores	277

5/7

USSR

MASLENITSKIY, I. N., and CHUGAYEV, L. V., Metallurgiya Blagorodnykh Metallov, Izdatel'stvo Metallurgiya, 1972, 368 pp

	Page
8. Ferroauriferous Ores	279
9. Gravitational Concentrates	280
Chapter 14. Extraction of Gold From Copper Electrolyte Slimes .	282
1. Chemical and Material Composition of Slimes	282
2. Treatment of Slimes	283
Chapter 15. Refining of Gold and Silver	290
1. Raw Material and Preparation of It for Refining	290
2. Chlorine Process	291
3. Electrolysis Refining	293
4. Acid Refining Methods	312
5. Carrying Away of Noble Metals by Waste Gases From Foundry and Electrolysis Shops and Purification of These Gases	313
6. Irrevocable Losses of Noble Metals During Refining	315
7. Treatment of Industrial Wastes	315
8. Control of the Technological Process and Balance of Noble Metals	317

6/7

USSR

MASLENITSKIY, I. N., and CHUGAYEV, L. V., Metallurgiya Blagorodnykh Metallov, Izdatel'stvo Metallurgiya, 1972, 368 pp

	Page
Chapter 16. Metallurgy of Platinum Group Metals	317
1. Historical Notes.....	
2. Physical and Chemical Properties of the Platinum Group Metals	320
3. Alloys of the Platinum Group Metals	332
4. Form of the Deposits of the Platinum Group Metals in Ores	334
5. Extraction of the Platinum Group Metals	337
6. Refining of the Platinum Group Metals	342
7. Application of the Platinum Group Metals	361
References	363

7/7

USSR

UDC 621.396.6-181.5

BELOUS, M. V., KOSENKOV, A. S., PAVLENKO, G. I., POBOV, V. I.,
CHUGAYEV, V. N., SNOBERNIK, V. K.

"On the Properties of Conductive Elements of Thin-Film Microcircuits
Made by Vaporization of Aluminum, Nickel, Copper and Copper-Based Alloy"

Elektron. tekhnika. Nauch.-tekhn. sb. Mikroelektronika (Electronic
Technology. Scientific and Technical Collection. Microelectronics),
1971, vyp. 1(27), pp 101-109 (from RZh-Radiotekhnika, No 8, Aug 71,
Abstract No 8V277)

Translation: The authors studied the electrical, structural, adhesion
and other properties of films made by vacuum deposition of aluminum,
nickel, copper and an alloy of 94.5% Cu, 5% Ni and 0.5% Mn. It is
shown that alloying copper with elements having a vapor pressure which
differs markedly from that of the base of the alloy enables an appreci-
able improvement of the required properties of the films without any
pronounced adverse effect on their conductivity. Resumé.

1/1

USSR

UDC 548.52

POLTAVTSEV, Yu. G, ZAKHAROV, V. P., CHUGAYEV, V. N.

"Structural Studies of Graphitization of Thin Carbon Films Under the Influence of Powerful Light Pulses"

Moscow, Kristallografiya, Vol. 16, No. 2, 1971, pp 415-419.

Abstract: Changes in near order structure upon graphitization of carbon films under the influence of powerful light pulses are studied. Amorphous carbon films were irradiated with light pulses of various energies, the process of graphitization being continued to various stages. The intensities of scattering of electrons by the irradiated films were measured, and the curves of the radial distribution of atoms were calculated. The near order parameters were determined for various stages of graphitization. A probable kinetics is suggested for the transition of amorphous carbon to graphite upon irradiation of the initial films with light pulses of very high energy. It is suggested that a double C = C bond is produced between some of the atoms in addition to the single C - C bond in the graphitized films.

1/1

USSR

UDC 539.216.2:535.211

ZAKHAROV, V. P., POL'SKIY, YU. M., and CHUGAYEV, V. N. (Kiev)

"Kinetics of Structural Changes in Thin Films of Germanium and Carbon During Their Interaction With Laser Radiation"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70, pp 55-60

Abstract: The article describes results of a study of the process of crystal growth in thin germanium films during their interaction with laser radiation. An FEU-31 photomultiplier was used as the recording device. The germanium films were obtained by evaporation in a vacuum of the order of $5 \cdot 10^{-6}$ mm Hg on cold glass substrates. The interaction of thin germanium films with focused laser radiation results in the growth of single crystals within individual cells of the supporting grid on which the film was placed. The crystals reached 15-20 microns in length. Oscillograms disclosed a difference in the duration of changes in the optical density of the films when they were irradiated with laser radiation in air or in a vacuum. Since changes in the

1/3

- 69 -

USSR

ZAKHAROV, V. P., et al., Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70, pp 55-60

optical density of germanium film in a vacuum begin following the completion of the laser pulse action, it may be considered that the single crystals grow in the film as it cools off. The temperature for the start of single-crystal growth is strictly determined. In air the appearance of significant temperature gradients determines a higher rate of single-crystal growth in the films than under vacuum conditions. Crystal growth within different cells takes place sequentially as the film crystallization temperature is reached during cooling. The use of the photomultiplier makes it possible to estimate mean crystal growth rates. For 15-20-micron single crystals the mean rate of their growth in the film is of the order of 10 cm/sec.

The same method was used to study the time characteristics of the graphitization of carbon film in its interaction with a laser pulse. Unlike germanium films, where ordering of the microstructure occurs during their cooling, carbon films are

2/3

USSR

ZAKHAROV, V. P., et al., Fizika i Khimiya Obrabotki Materialov,
No 5, Sep-Oct 70, pp 55-60

graphitized on heating. Oscillograms of variations in the optical density of the carbon film show that the graphitization process begins 200 microseconds after the start of the laser pulse. The rate of movement of the film graphitization front in an individual cell is estimated to be of the order of 30 cm/sec.

3/3

- 70 -

Aeronautical

USSR

CHUGAYEV, V. V. (Moscow)

"The Stability of Small Oscillations of a Schuler Vertical
When an Object Moves Along the Terrestrial Orthodrome"

Moscow, Mekhanika Tverdogo Tela, No 4, Jul-Aug 70, pp 16-22

Abstract: The stability of the solutions of equations of small oscillations is investigated for one class of moments of an object: movement at constant velocity along the terrestrial orthodrome. In this case the equations of small oscillations of a Schuler vertical become linear equations with periodic coefficients. Taking advantage of the fact that they can be written in the form of Hamiltonians, the mathematical theory of parametric resonance may be used for studying their stability. In the problem under consideration, formulas are used for determining the boundaries of the instability regions in the first and in the second approximation. 7 bibliographic entries.

1/1

USSR

UDC: 624.131.43+539.21.084-492.3

CHUGAYEV, V. Ye.

"An Approximate Method of Solving the Problem of Freezing of the Ground Around Cavities Filled with an Isotropically Kept Liquefied Gas"

Sb. rabot Vychisl. tsentra Mosk. un-ta (Collection of Works of the Computing Center of Moscow University), 1970, vyp. 15, pp 182-187 (from RZh-Mekhanika, No 4, Apr 71, Abstract No 4V507)

Translation: An approximate method is proposed for solving the asymmetric Stefan problem for a region bounded from within by a circle of non-zero radius on which the temperature is constant and below the solidification point. The method assumes stationary temperature distribution in frozen and thawed zones. The thawed zone is bounded by the influence radius to be determined. The resultant temperature distributions are substituted in the calorimetric relationship on the moving boundary, which after integration gives two relations for two variables: the freezing radius and the influence radius. These quantities are calculated by means of an iteration process which is proposed in the paper and realized on a computer. The results of specific calculations are compared with data from modeling on an electronic integrator, and with the results of computer calculations by the method of finite differences. Bibliography of ten titles. E. A. Bondarev.

1/1

- 46 -

USSR

UDC 533.95:538.4

CHUGAYEVSKIY, Yu. V.

"Nonlinear Theory of Magnetogravitational Vibrations and Waves"

V sb. 7-ye Sovesch. po magnit. gidrodinamike. T. 3 (Seventh Conference on Magnetohydrodynamics. Vol 3 -- Collection of Works), Riga, "Zinatne," 1972, pp 165-166 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G32)

Translation: Nonlinear vibrations of a metal drop localized in a magneto-gravitational tower (i.e., suspended in the field of a high-frequency inductor) are discussed. The range of vibrational motion of the magneto-gravitational vibrator was determined for the case of weak energy dissipation. It was shown that the period of the vibrations rises with an increase in the amplitude. The boundaries for the stability of vibrational motion of the system were determined. Stationary capillary waves in a layer of an ideal, conducting, weighable fluid suspended in a high-frequency field were also examined. Solutions were obtained for waves with velocity c greater than the velocity of the capillary "sound" c_0 and for waves with $c < c_0$. It is shown that the amplitude does not depend monotonically on the velocity and has a discontinuity at the point $c = c_0$. V. L. Martsynk'yan.

1/1

USSR

UDC 614.718:576.852.211/-078

CHUGUNIKHINA, N. V., Institute of General and Communal Hygiene imeni A. N. Sytin, Academy of Medical Sciences USSR, Moscow

"Comparative Evaluation of Methods for the Detection of Tuberculosis Mycobacteria in the Air"

Moscow, Gigiyena i Sanitariya, No 1, 1973, pp 73-75

Abstract: Detection of tuberculosis mycobacteria under experimental conditions and in the air of bacteriological laboratories, clinics, and hospitals was studied. To capture the mycobacteria for test cultures, membrane filters, filters of the type AFA-V-18 made of the filtering material FPP-15, and the device POV-1 were used. The membrane filters were unsuitable, because their resistance to the air flow was too great. The material of AFA-V-18 filters exerted a bactericidal action. The best method for isolating the tuberculosis mycobacteria from the air was by means of the POV-1 device, which was designed by the Leningrad Affiliate of the Institute of Medical Instrument Building. The action of this device is based on capture of the bacteria from the air by means of an aerosol generated by dispersing a liquid with an atomizer. It consists of an aspirator equipped with a rotameter and a set of sample takers in which the bacteria are collected. A sample taker is a plastic cylinder into which 7 1/2

USSR

CHUGUNIKHINA, N. V., Gigiyena i Sanitariya, No 1, 1973, pp 73-75

ml of Shkol'nikova's synthetic medium are placed. The atomizer arrangement is lowered into the cylinder. A volume of air amounting to 250-500 liters is passed through the device at the rate of 30 l./min. After the taking of samples in the tests conducted, culturing on solid nutrient media was carried out. Furthermore, experimental animals were infected.

2/2

1/3 008

UNCLASSIFIED

PROCESSING DATE--02OCT70
-U-

TITLE--PHOSPHORITE NODULES IN BOTTOM SEDIMENTS OF THE GULF OF ADEN

AUTHOR--(02)-GEVORKYAN, V.KH., CHUGUNNY, YU.G.

COUNTRY OF INFO--USSR, INDIAN OCEAN

SOURCE--OKEANDLOGIYA, 1970, VOL 10, NR 2, PP 307-314

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MECH., IND., CIVIL AND
MARINE ENGR

TOPIC TAGS--BOTTOM SEDIMENT, OCEAN, OCEAN BOTTOM SAMPLING, MINERAL MODULE,
METAL OXIDE/(U)MIKHAIL LOMONOSOV SHIP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1378

STEP NO--UR/0213/70/010/002/0307/0317

CIRC ACCESSION NO--AP0109451

UNCLASSIFIED

2/3 008

UNCLASSIFIED

PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0109451

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SIXTH CRUISE OF THE R-V M. LUMENSOV TO THE INDIAN OCEAN IN 1966 GAVE 326 PHOSPHORITE NODULES OF 1 KG AND 109 G TOTAL WEIGHT TAKEN FROM 210 M DEPTH IN THE VICINITY OF THE SOGUTRA ISLAND IN THE GULF OF ADEN. THE MORPHOLOGICAL PECULIARITIES OF THE NODULES COLLECTED AND THE CONDITIONS OF THEIR OCCURRENCE PROMPT A CONCLUSION THAT THE NODULES IN QUESTION ARE PRODUCTS OF EROSION AND REDEPOSITION OF BEDROCK CONTAINING PHOSPHORITE NODULES. TIME OF THE FORMATION OF THE NODULES HAS NOT BEEN ESTABLISHED, THEIR EVACUATION AND REDEPOSITION ARE PROCEEDING EVEN NOWADAYS. THE MORPHOLOGICAL AND PETROGRAPHIC STUDIES OF THE NODULES HAVE SHOWN THEIR COMPOSITION AS A MIXTURE OF MOSTLY FINE DISPERSED ISOTROPIC PHOSPHATE MATTER AND FINE CRYSTALLINE CALCITE. SUCH MINERALS AS QUARTZ, CHALCEDONY AND APATITE HAVE BEEN FOUND TO COMPOSE THE NODULES WITH A RARER OCCURRENCE OF PYROXENE, FELDSPAR, ZIRCON AND OTHER MINERALS. THE CHEMICAL ANALYSIS HAS REVEALED THE FOLLOWING OXIDES AS THE CONSTITUENTS OF THE NODULES (IN PERCENT): SIO SUB2-2.79; TIO SUB2-0.22; AL SUB2 O SUB3-3.18; FE SUB2 O SUB3 5.89; FEO-0.88; MNO-0.18; MGO-0.54; CAO-44.12; NA SUB2 O-1.07; K SUB2 O-0.32; P SUB2 O SUB5-23.58; H SUB2 O SUBHYGR-1.59; H SUB2 O SUBCRYST. PLUS PPP-2.25; CO SUB2-8.10; TOTAL-101.05; F-1.34; C WAS NOT FOUND. THE QUANTITATIVE SPECTRAL STUDIES HAVE SHOWN THE FOLLOWING ELEMENTS (IN PERCENT); NI-0.002; ED-0.001; V-0.01; CR-0.03; IR-0.003; CU-0.0001; SE-0.0001; LI-0.88; U-0.82; UR-0.001; SR-0.001; BA-0.08. THE ANALYSIS HAS BEEN MADE FOR 40 ELEMENTS.

UNCLASSIFIED

3/3 008

CIRC ACCESSION NO--AP0109451

UNCLASSIFIED

PROCESSING DATE--07OCT70

ABSTRACT/EXTRACT--LARGE AMOUNTS OF ADMIXTURES, INCLUDING 10 TO 15PERCENT CALCITE, CLAY MATTER, FERROUS OXIDES AND QUARTZ, MAKE IT IMPOSSIBLE TO DETERMINE A MINERALOGICAL FORM OF PHOSPHATE MATTER. BASED ON THE ACTIVE REACTION OF NODULES WITH HYDROCHLORIC ACID, PHOSPHATE ISOTROPY AND EASY SOLUBILITY, THE PRESENCE OF APATITE, THE AUTHORS ARE INCLUDED TO REGARD THE PHOSPHORITES UNDER STUDY AS A MANY COMPONENT SYSTEM WITH A PREVALENCE OF THE ISOTROPIC DIFFERENCE OF CARBONATAPATITE-FLUORINAPATITE CULLOPHANE. THIS DISCOVERY OF PHOSPHORITES IS THE FIRST FINDING OF THE MASS CONCENTRATIONS OF PHOSPHORITE NODULES IN THE NORTHERN PART OF THE INDIAN OCEAN.

FACILITY: INSTITUT GEOLOGICHESKIKH NAUK AN USSR, KIEV.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--STUDY OF THE WORKING CAPACITY OF AN OPERATOR UNDER CONDITIONS OF A
PROLONGED BED REST -U-
AUTHOR-(04)-ZAVIALOV, YE.S., MELNIK, S.G., CHUGUNOV, G.YA., VORONA, A.A.
COUNTRY OF INFO--USSR
SOURCE--KOSMICHESKAIA BIOLOGIIA I MEDITSINA, VOL. 4, JAN.-FEB. 1970, P.
61-65
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HYPODYNAMIA, AIRCRAFT PERSONNEL, EXERCISE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1963 STEP NO--UR/0453/70/004/000/0061/0065
CIRC ACCESSION NO--AP0120606
UNCLASSIFIED

272 014

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120606

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE EFFECTS OF HYPOKINESIA ON THE WORKING CAPACITY OF 6 SUBJECTS WHO PERFORMED VARIOUS MANUAL AIRCRAFT CONTROL ASSIGNMENTS DURING A 100 DAY PERIOD OF BED REST, WITH OR WITHOUT PHYSICAL EXERCISES ON A SPECIAL STAND. THE NEGATIVE EFFECTS OF HYPOKINESIA ON THE PERFORMANCE OF THE SUBJECTS ARE NOTED. ROUTINE CONTROL OPERATIONS REQUIRING INSTRUMENT DIAL SCANNING AND WELL COORINATED PRECISION MOTIONS WERE AFFECTED THE MOST.

UNCLASSIFIED

Nuclear Physics

USSR

ANDREYEV, D. S., GUSINSKIY, G. M., YEROKHINA, K. I., KUDOYAROV, I. K. E.,
LEMBERG, I. K. H., CHUCUNOV, I. N., Physico-Technical Institute imeni A. I. Ioffe,
Academy of Sciences, USSR

"Quadrupole Moment of the Nucleus ^{114}Cd in the First Excited State"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 11, No 8,
20 Apr 70, pp 369-370

Abstract: In the present work a cyclotron is used for the first time to determine the value of the quadrupole moment (Q_{2+}) of the first excited state in ^{114}Cd . In order to eliminate the effect of instability of the intensity and energy of accelerated ions on the results of measurements, the experiments employed simultaneous acceleration of the singly charged α particles and the triply charged ions of carbon with energies of 8 and 24 Mev respectively. In this case the value of the Coulomb parameter ξ for both kinds of particles is practically identical and errors originating during comparison are minimal. In separate experiments it was shown that during simultaneous acceleration the ratio of the energies of the light and heavy particles is preserved with a precision not worse than 0.1 percent, and the error of determining Q_{2+} connected with this does not exceed 10 percent.

1/2

USSR

ANDREYEV, D. S., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 11, No 8, 20 Apr 70, pp 369-370

In contrast to other work in which the spectra of γ rays were registered in accordance with ions selected by energy, in the present work the spectra of backward-scattered ions were measured in accordance with γ -quanta selected by energy. The value of Q_2^+ was determined as:

$$Q_2^+ = - (0.53 \pm 0.17) \text{ barn.}$$

This contrasts with three other works in which the value of Q_2^+ lies in the limits - (0.42 + 0.90) barn and a later work in which the value of Q_2^+ is close to zero. 6 ref. Received by editors 10 March 1970.

2/2

USSR

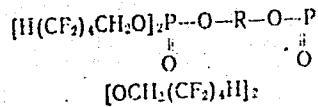
UDC 547.26'118'221.07

CHUGUNOV, V. S.

"A Method of Making Fluorine-Containing Bisdialkylphosphates"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 25, Soviet Patent No 277780, class 12, filed 3 Apr 69, published 5 Aug 70, p 27

Translation: This Author's Certificate introduces a method of making fluorine-containing bisdialkylphosphates of general formula •



where R is a phenylene or polyfluoroalkylene. As a distinguishing feature of the patent, tris(polyfluoroalkyl)phosphate is treated with phenylene - or polyfluoroalkylenediol with boiling of the reagents in the presence of polyfluoroalkoxide of an alkali metal as a catalyst.

1/1

1/2 013

TITLE--BETA PARTICLE FLUX ATTENUATION IN ABSORBERS DURING MEASUREMENTS OF
RADIOACTIVITY IN 2 PI GEOMETRY -U- PROCESSING DATE--16OCT70

AUTHOR--CHUGUNOV, V.V.

UNCLASSIFIED

COUNTRY OF INFO--USSR

SOURCE--PRIB. TEKH. EKSP. 1970, 1, 67-70

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--BETA RADIATION, GEOMETRY, PARTICLE ABSORPTION, ABSORPTION
COEFFICIENT, RADIOACTIVITY MEASUREMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1882

STEP NO--UR/0120/70/001/000/0067/0070

CIRC ACCESSION NO--AP0108212

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0108212

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

ABSTRACT. THE FLUX ATTENUATION WAS INVESTIGATED OF B PARTICLES IN ABSORBERS IN DIRECT CONTACT WITH THIN SOURCES OF 2 PI GEOMETRY. THE RESULTS OF MEASUREMENTS ARE APPROXIMATED BY THE EXPRESSION $K = M \exp(-0.69 D \Delta^{1/2})$, WHERE K IS THE ATTENUATION COEFF., M EQUALS $0.77 + 0.2 \log E$, E BEING THE MEAN ENERGY OF BETA SPECTRUM, D IS THE ABSORBER THICKNESS IN MG-CM, AND Δ (LAYER OF HALF ATTENUATION) IS CALCD. BY $\Delta = 140 \bar{E}^{1.31}$. THE FORMULA FOR K CAN BE USED FOR BETA SPECTRA WITH MEAN ENERGIES OF 0.03-1.0 MEV IN THE ABSORBER THICKNESS RANGE FROM 0.01 Δ (FOR $\Delta^{1/2} = 0.25$) TO 4-5 Δ (FOR $\Delta^{1/2} = 147$ PM).

UNCLASSIFIED

USSR

UDC: 621.317.33:537.363(088.8)

GUDKOV, O. I., CHUGUNOV, Yu. I., Angarsk Affiliate of the Experimental
Design Office of Automation

"A Device for Determining the Dielectric Properties of Liquids on Superhigh
Frequencies"

USSR Author's Certificate No 263981, filed 26 Mar 66, published 24 Jun 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A380)

Translation: The proposed device is one of those instruments which indi-
cate the dielectric parameters of liquids as a function of composition and
concentration. The device contains a microwave oscillator, master and
reference cavities, an AFC system, detectors and a comparison system.
The essence of the proposal is that the AFC module is coupled to and
operates with the master cavity rather than with the measurement cavity.
Instead of an adder, a null indicator is used with resonance amplifier
which compares the frequencies of the master and measurement cavities.
E. L.

1/1

- 62 -

USSR

UDC: 621.317.7:621.317.335.029.64

GUDKOV, O. I., CHUGUNOV, Yu. I., POTAPOV, A. A.

"Instruments for Measuring the Permittivity and Loss Tangent of a Material on Superhigh Frequencies, and the Dielectric Characteristics of Mica on a Frequency of 9.2 GHz"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 1), Novosibirsk, 1970, pp 88-89 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A364)

Translation: A brief report is given on laboratory microwave dielectricometers of the "Resonance" and "Helium" types developed by the Angarsk Affiliate of the Experimental Design Office of Automation for substances in any phase. Operation of the instruments is based on measurement of the frequency difference of two resonators -- a working resonator and a measurement resonator. A table is given of the results of measurement of the permittivity and loss tangent of crystals of natural mica from East Siberian deposits. E. L.

1/1

- 65 -

USSR

UDC 621.646-529(088.8)(47)

IVANOVSKIY, C. V., CHUGUNOV, VII. N.

"Hydraulic Panel with Programmed Control"

USSR Author's Certificate No 305460, filed 30 Jun 67, published 5 Jul 71 (from RZh--Avtomatika, Telemekhanika i vychislitel'naya tekhnika, No 4, Apr 72, Abstract No 4A600P)

Translation: A hydraulic panel is proposed which contains two plates. The control equipment is located on one of the plates, and the other plate has the input and output channels to the sensors and servomechanisms. In order to insure the possibility of fast program exchange, the panel has a commutation grid formed by columns (channels) of one plate and rows (channels) of the other plate. The columns are joined to the control equipment, and the rows are partly joined to the inputs and outputs of the hydraulic panel and partly form internal communications. At the intersections of the rows and columns of the grid on the plates there are holes which lead out to a fast-change rigid punch card pressed between the plates. The plates are connected to each other through the holes in the punch card in accordance with the operating cycle assigned by the punch card. There are 7 illustrations.

1/1

USSR

Titanium

UDC 621.88.085:669.295:620.17

GORSHKOV, A. I., MATYUSHKIN, B. A., CHUGUNOVA, R. S., and KIRYUKHINA, G. N.

"Properties of VT20 Weld Joints After Annealing"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 4, Apr 73,
pp 62-63

Abstract: The mechanical properties of weld joints from VT20 alloy with and without a filler metal after annealing at 400-800°C were investigated. It was found that annealing of weld joints made using VT20-lsv or VT20 2sv filler wire and without the filler wire increases ductility although joints made with VT20-lsv wire had greater ductility. An annealing temperature of 800°C was recommended for increasing ductility and removing residual welding stresses. This increase in ductility is explained by the formation of an equilibrium structure of the metal in the heat-affected zone and weld seam and also, possible, by the precipitation of the beta-phase along the boundaries of the alpha- and alpha-prime phases. One figure, two tables.

1/1

USSR

UDC: 621.378:681.33

CHUGUY, Yu. V.

"Optical Signal Processing Using Silhouette Filters"

Novosibirsk, Avtometriya, No 5, 1972, pp 10-14

Abstract: The function of this paper is to demonstrate that trans- parents with a silhouette, two-gradation image can be successfully used as a filter of spatial frequencies in the design of coherent optical devices. This demonstration is theoretical, and begins with the transmission functions for the filter. It is found that the use of such a filter leads to the computation of a convolution, which in turn leads to a simplification of filter-manufacturing technology. An optical system realizing the signal-processing method used with this filter is shown in diagram form, and an ex- pression for the dynamic range of the photographic silhouette fil- ter is derived. The optical system was used in experiments con- ducted by the author, and a photograph of the filter involved in those experiments is reproduced. He expresses his gratitude to Candidate of Technical Sciences P. Ye. Tverdokhlebov for his advice and comments.

1/1

USSR

UDC 621.32.004.14:62-533

KOROTKOV, S. V., and CHUGUYEV, G. P.

"Several Questions in the Synthesis of Multichannel Systems Containing One Digital Computer With the Probability Characteristics of Connecting and Disconnecting the Individual Control Channels"

Leningrad, Elementy Tsifrovyykh Sistem Upravleniya, "Nauka," 1971, pp 3-20

Abstract: The authors examine a multichannel system as a unit, thus making it desirable to establish criteria that will reflect to some degree the properties of the multichannel system and permit such systems to be compared among themselves. They select three questions which they consider to be the main ones in designing such systems: (1) selection of the basic parameters of the digital computer (speed of response and volume of memory); (2) the possibility of minimizing the performance criterion of the entire system; and (3) determination of the probability properties of the periods of discreteness and errors in the individual channels if such minimization takes place. Figure 1 is a schematic of a model for such a multichannel system. These three questions, while not encompassing all problems involved in designing such systems, are discussed and analyzed in detail. The article contains 7 illustrations, 1 table, and 15 bibliographic entries.

1/1

USSR

UDC 616.33-091-02:[616.453+616.831.371]-008.1

KRYSHEN', P. F., KOLPAKOV, A. A., TKACH, YU, I., SAKOVICH, I. V., and CHUTCH, N.A.
Pathophysiology Laboratory, Dnepropetrovsk Institute of Gastroenterology

"Functional State of the Central Nervous System and Pathological Changes of the
Stomach Mucosa of Immobilized Rats"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 6,
Nov/Dec 72, pp 48-51

Abstract: The immobilization of rats for 24 hr (by tying them to boards) produced the excitation and inhibition states. The excitation state reached the peak in 4-5 hr. During this period the animals tried to escape, at first every 5-20 sec, then every 10-50 sec. The number of heart beats and respiration amounted to 447 ± 16 and 106.8 ± 3.9 per min, respectively. The inhibition state occurred in 4-5 hr during which the respiration and the number of heart beats decreased to 86.6 and 304, respectively. The contraction of muscles was slow and attempts for escape were repeated only 1 every 1-5 min. Anatomical studies of the stomach walls showed the presence of hemorrhages (0.1-2.5 mm in diam.), the blood vessels were dilated and full of blood in the mucous coat, as well as in muscle layers in some cases. Accumulation of lymphocytes, neutrophils, and histiocytes was detected under the mucous coat. The forceful

1/2

- 62 -

USSR

KRYSHEN'; P. F., et al., Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 6, Nov/Dec 72, pp 48-51

immobilization caused an extreme excitation of the central nervous system, muscular, cardiovascular, and respiratory systems. The excessive activity of these systems for 4-5 hr consumed the energy reserves of the animal organism and inhibition followed. The central nervous system was affected first, followed by the inhibition of the muscular, cardiovascular, and respiratory systems.

2/2

USSR

UDC 669.15'24'295

GORBACH, V. G., KOKORIN, V. V., SAMSONOV, YU. I., and CHUISTOV, F. V.

"Precipitation by Stacking Faults in an Fe-Ni-Ti Alloy"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 2, Mar-Apr 72, pp 147-150

Abstract: An Fe-Ni-Ti alloy was selected to investigate stacking fault precipitation. This alloy had the following chemical composition (in wt %): 29.7 Ni, 3.82 Ti, 0.018 C, balance-Fe. The alloy was prepared in an induction furnace, homogenized at 1150°C for eight hours, and then forged (at 1150°C) to an 11 x 11-mm cross section. The produced rods were cut into samples approximately 1 mm and heat treated at different temperatures or in a vacuum or in salt baths and then quenched in water after heating at 1150°C for two hours.

Test results showed that in the aged austenite of the Fe-30 Ni+4 Ti alloy there are helicoidal dislocations and stacking faults of a vacancy nature. Diffraction contrast analysis revealed that the stacking faults were of the subtraction type. Also a new mechanism of precipitation (heterogeneous precipitation by stacking faults) was detected for the Fe-Ni-Ti alloy and it was assumed that the equilibrium α -phase (Ni₃Ti) is the precipitation phase in the given case. Three figures, 16 bibliographic references.

1/1

USSR

UDC: 669.3'295:539.26

GANZHULA, N. N., KOKORIN, V. V., CHUISTOV, K. V., Institute of Metal Physics,
Academy of Sciences UkrSSR
"Structure of an Aging Copper-Titanium Alloy"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 5, Nov 73, pp
1051-1057.

Abstract: X-ray studies, performed using an improved method, are used to determine slight changes in the structure of an aging Cu-Ti alloy. Along with the satellites, additional defects of diffuse scattering are observed in the form of stripes oriented approximately along $\langle 110 \rangle$. The picture of distribution of diffuse intensity is compared with that calculated for the selected model of the distorted lattice of the heterogeneous solid solution. It is assumed that the nature of the diffuse scattering observed is related to the presence of chaotically distributed equiaxial areas with tetragonal lattice. The stable beta phase with the orthorhombic lattice has orientation relationships with the matrix lattices. The results of calculation of the distribution of intensity of diffuse scattering indicate that the additional diffuse stripes experimentally observed near the (h00) and (hk0) reflexes are caused by distortions of the lattice due to formation of

1/2

- 76 -

USSR

Ganzhula, N. N., Kokorin, V. V., Chuistov, K. V., Sverdlovsk, Fizika Metallov
i Metallovedeniye, Vol 36, No 5, Nov 73, pp 1051-1057.

areas coherently bonded with the matrix lattice.

2/2

CHUISTOV, K.V.

3
Sibilet Manuskript
Metallurg 57RS 516/1
26 March 1973

UDC 669.25:516.425
THE PROCESS OF PRECIPITATION IN A COBALT-TUNGSTEN-TITANIUM ALLOY

A. L. Berezhna, L. P. Gurl'ko, and K. V. Chui'stov, Institute of the Physics of Metals of the Ukrainian Academy of Sciences, submitted to Press 1 February 1972; final version 26 April 1972. Pages 1213-1218

By x-ray and electron-microscope methods in a clearance investigated. In the temperature range of 500--600° a homogeneous formation of an intermediate β' -phase with a structure $L1_2$ was observed. Its composition is presumed to be Co₃(W, Ti). The origin of the β' -phase is accompanied by the appearance of superstructural maximums and satellites on the x-ray photographs near the reflections from the cubic matrix (the β -phase). It was established that in the process of the growth of a particle of the β' -phase a periodic modulated structure is formed. Together with continuous precipitation of the β' -phase at temperatures of 650--700° an intermittent decay along the boundaries of the grains is also observed with a basic stable phase of Co₃W. The aging of the alloy Co--W--Ti at high temperatures (900--1000°) is characterized only by continuous precipitation. The process of the decay of binary alloys of Co--Ti and Co--W has been quite well studied [1--6]. In the first of them, the precipitation of the excess phase (Co₃Ti) of type Cu₃Al--L1₂) occurs basically with respect to a homogeneous mechanism with the formation of a modulated structure [1--5]. In the second, it occurs by a heterogeneous means, as a result of which it is primarily a pseudo-perlite (cellular) structure that is formed [6]. It is alternating plates of the phase of precipitation of Co₃W with a lattice of the Ni₃Sn (DO19) type and an impoverished matrix (of the α -phase with a GPU lattice).

3

The purpose of this work is to ascertain the mechanism of decay in a ternary Co--W--Ti alloy, containing 7.8% (atomic) W and 4.6% Ti (atomic). It was assumed that alloying of the binary Co--W alloy with titanium may change the mechanism of precipitation from an almost purely heterogeneous mechanism toward a homogeneous mechanism. Such an assumption was based on the data from reference [7, 8], in which high heat-resistance characteristics of this alloy were observed, which are usually not proper for systems with a purely heterogeneous mechanism of precipitation.

A Co--W--Ti alloy was prepared in an arc furnace in an atmosphere of purified argon, rolled at 1100°C in the air, and annealed at 1100°C for 10 hours. An electron-microscopic investigation in a clearance was made, and an x-ray investigation of the coarse-crystal specimens. The progress of aging was controlled according to the variation of the hardness.

The specimens were hardened at 1200° in water in quartz ammonites and subjected to aging in the temperature range of 500--1100° for different times. The aging was performed in a vacuum of 10⁻¹--10⁻⁴ torr. Foils for the electron-microscopic investigation were prepared from discs with a diameter of 3 millimeters and a thickness of 0.2--0.3 millimeters by means of electric polishing in an electrolyte of 5--7% sulfuric acid, 1.25--% hydrofluoric acid, and 93.75% methyl alcohol at a voltage of 50--70 volts and T=90°.

The morphology of the precipitation (the shape of the particles and the nature of their spatial distribution) was investigated according to the methodology in reference [9], as a rule in reflexes (100) of the well-ordered phase.

Results of the Experiment and their Discussion

In Figure 1 a curve of the variation of the hardness after isochronic annealing (1 hour) at various temperatures is shown. We may note the rapid growth of hardness at 600--700° and the slow drop at 800--1000°C. The electron-microscopic and x-ray investigation made it possible to establish the structural variations occurring in the decay of the Co--W--Ti alloy.

Physical Properties

USSR

UDC 669.25:537.311.3

BEREZINA, A. L., CHUDAKOV, A. F., and CHUISTOV, K. V., Institute of Metal Physics, Academy of Sciences Ukrainian SSR

"Study of the Recovery in Alloy Co -- 9 at. % Ti. Resisto- and Magneto-
metric Investigations"

Sverdlovsk, Fizika Metallov i Metalovedeniye, Vol 30, No 4, Oct 70, pp 774-779

Abstract: An investigation was made of the effect of short-duration high-temperature heating ($T = 800^{\circ}\text{C} -- 2 \text{ min}$ and $900^{\circ}\text{C} -- 1 \text{ min}$) on the magnitude of electrical resistance R and the magnetization saturation I_s of alloy Co -- 9 at. % Ti, which was pre-aged at much lower temperatures ($500 -- 700^{\circ}$). The effect of recovery of the studied properties of the alloy after high-temperature treatment was established. It was assumed that the effect of recovery depends on the diffusion of concentration waves or separations whose dimensions are smaller than the critical one at the recovery temperature. The possibility of cyclical recovery R and I_s was determined. Study of the step-wise heating of the pre-aged Co--Ti alloy made it possible to define more accurately the nature of change of the spectrum of concentration waves as a result of gradual heating of pre-aged alloys.

1/1

USSR

UDC 669.25/.295:621.785

BEREZINA, A. L., TKACHENKO, O. Ye., and CHUISTOV, K. V., Institute of Metal Physics, Academy of Sciences UkrSSR

"Study of the Nature of Recovery in the Alloy Co-9 at. % Ti. III. Electron Microscope Study"

Moscow, Fizika Metallov i Metallovedeniye, Vol 30, No 5, 1970, pp 942-949

Abstract: Electron microscope techniques were used to study thin foils of aged Co + 9 at. % Ti alloy to determine the change in its microstructure after low-temperature and subsequent high-temperature heating. It was discovered that after this treatment, both dissolution of one portion of the γ phase segregations (Co₂Ti) and enlargement of another portion occur, increasing the regularity of their distribution. In addition to this, a decrease (recovery) in microhardness of specimens of the Co-Ti alloy was noted, which apparently can be explained by a decrease in the coherent stresses as a result of partial dissolution of the γ -phase segregations.

1/1

USSR

UDC 669.017.3

~~CHUISTOV, K. V.~~, Institute of Metal Physics, Academy of Sciences
Ukr SSR

"Spinodal Decomposition of Supersaturated Solid Solutions"

Kiev, Metallofizika, No 32, 1970, pp 38-56

Translation: This paper includes a survey and critical analysis of the theories of the spinodal decomposition of supersaturated solid solutions found in the literature. Thermodynamic models of a solid solution in heterogeneous systems, which describe both the homogeneous formation of the nuclei of the new phase and the spinodal decomposition of an alloy, are examined. It is noted that the existing spinodal decomposition theories have been developed for a solid solution which does not have lattice defects of the dislocation type, packing defects, and so forth. This limits the applicability of these theories to real alloys.

1/1

USSR

3

BRIKMAN, L. I., TSETLIN, V. M., ROGINSKAYA, YE. YA., ZHUK, YE. B., KLIMEN-CHUK, V. I., POZHARSKAYA, YE. B., and VOLKOVA, A. P.

"Composition for the Control of Household Insects Specifically for Cockroaches and Bugs"

USSR Author's Certificate No 251515, filed 1 Dec 70, published 10 Oct 72 (from RZh-Khimiya, No 19, Oct 73, Abstract No 19N495 P)

Translation: To lower the toxicity of the preparation towards warm-blooded animals without lowering its effectiveness against household insects, pyrethrins are added to the aerosol preparation containing γ -CKhTsG [hexachloro-cyclohexane -- HCCH]. The composition of such a preparation: γ -HCCH 0.21%, DDT 1.89%, pyrethrin extract containing γ 25% of the active material 0.42%, xylene 5.0%, a mixture of freon-12 and freon-11 55%, kerosene up to 100%.

1/1

- 59 -

USSR

UDC: 621.396.6.019.3

POPOV, N. F., CHUKALIN, V. N., UGRYUMOVA, I. A.

"Algorithm for Designing Radio Engineering Devices With Regard to Meeting Reliability Requirements"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 3 (Reports of the All-Union Scientific and Technical Conference on Radio engineering Measurements. Vol. 3), Novosibirsk, 1970, pp 161-162 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V267)

Translation: Existing systems of requirements which guarantee high quality of production output (the Saratov system, the flawless yield system, the Gor'kiy KANARSPI system, etc.) include special jobs to assure reliability which are performed in the development or manufacturing stages, but do not account for the developmental process itself. This drawback is eliminated in the proposed system. The paper tells of an algorithm worked out for development of equipment with regard to reliability requirements. This algorithm was used in developing equipment with a large number of elements and excellent reliability indices. N. S.

1/1

USSR

UDC 620.193.013:669.295

TOMASHOV, N. D., ~~CHUKALOVSKAYA, T. V.~~ CHERNOVA, G. P., BUDBERG, P. B., and GAVZE, A. L., Institute of Physical Chemistry, Academy of Sciences USSR

"Study of the Corrosion Resistance of Alloys of the Titanium-Tantalum--Niobium System"

Moscow, Zashchita metallov, Vol 8, No 1, Jan-Feb 72, pp 3-7

Abstract: Tantalum effectively raises the corrosion resistance of titanium-base alloys; its use, however, is limited due to cost factors and scarcity. The study of the ternary Ti-Ta-Nb system is essential for determining the feasibility of partial replacement of tantalum with the more readily available niobium. The corrosion and electrochemical behavior of the alloys was studied as annealed and quenched in a 5% HCl solution at 100°C. Analysis of the phase transformation and microstructure of the alloy indicates an isothermal section at 600°C which is characterized by a narrow region of α -solid solution, a wide two-phase ($\alpha+\beta$) region, and a wide region of α -solid solution. At about the same average compositions, Ti-Ta-Nb alloys with single-phase structures exhibit corrosion resistance values which are one or two orders of magnitude higher than those shown by two-phase alloys. The higher resistance is characteristic of annealed Ti-Ta-Nb alloys with
1/2

USSR

TOMASHOV, N. D., et al., Zashchita metallov, Vol 8, No 1, Jan-Feb 72, pp 3-7

a more stable β -phase. Alloying of Ti with Nb and, specifically, with Ta results in a considerable increase in corrosion resistance, the total content of alloying elements, ranging from 20-40% for annealed and 10% for quenched alloys. The study demonstrates the feasibility of replacing tantalum with niobium without reducing markedly the corrosion resistance of the above alloys. (3 illustrations, 1 table, 9 bibliographic references).

2/2

Instrumentation and Equipment

USSR

UDC 669.721

VIKHAREV, A. F., YEGOROV, A. P., ZHUKOV, V. P., CHUKAL'SKIY, YE. N., and
LEBEDEV, A. I.

"Mastering the Continuous Refining of Magnesium in a Mixer for the Titanium Industry"

Moscow, Tsvetnyye Metally, No 6, 1972, pp 44-46

Abstract: The mixer is divided into two sections and filled with electrolyte (chloride salts). The magnesium is purified by passing it through a layer of electrolyte under the vertical divider from one section to the other. The sludge is collected at the bottom of the mixer, which is inclined at 45° in each section. A special automatic grab bucket facilitates sludge removal. The mixer is lined with graphite and magnesite in order to withstand high temperatures. Pipe heaters containing molten salts (K, Na, Mg, Ca chlorides) are used to heat the mixer. The magnesium is transported to and from the mixer by a vacuum ladle equipped with one or two tap holes. The magnesium is protected from oxidation by a flux mixture sprayed into the mixer by compressed argon for 5-10 seconds after each teeming and evacuation of the magnesium. Analysis of the mixer sludge showed that magnesium losses amounted to only 0.22% in 1970; it varied from 0.1 to 0.3%, depending on the frequency

1/2

USSR

VIKHAREV, A. F., et al., Tsvetnyye Metally, No 6, 1972, pp 44-46

of sludge removal. In 1970, average consumption of argon was 0.4 m³/ton Mg; average consumption of flux was 0.3 kg/ton Mg. The authors recommend much wider use of such mixers in the titanium industry.

2/2

- 25 -

USSR

UDC 669.721.372

BARANIK, I. A., YASTREBOVA, Z. V., YEGOROV, A. P., ZHUROV, V. V., ~~CHERNAISKIY~~
~~YE. N.~~, BOGDANOV, A. P.

"Industrial Investigation of the Influence of Titanium Impurities on the Electrolysis of Magnesium Chloride"

Tsvetnye Metally, No 8, 1971, pp 40-42

Abstract: Results are presented from a chemical analysis of the presence of titanium in the raw material and products of electrolysis. Material balances with respect to titanium are calculated for several commercial electrolyzers. It is demonstrated that regardless of the content of fluorine in the electrolyte, the decrease in the yield of magnesium per current may reach 5-20% when lower titanium chlorides are added to the electrolyzer. The influence of metallic titanium is significantly weaker. On the basis of an analysis of results of commercial studies, necessary measures to combat the harmful influence of titanium on electrolysis are discussed.

1/1

USSR.

UDC: 621.791.72:669.293+669.292+669.14.018.8

VEYNIK, V. A., Engineer, D'YACHENKO, V. V., Candidate of Technical Sciences, and
CHUKANOV, A. P., Engineer

"Electron-Beam Welding of Niobium Alloy and Stainless Steel Through a Vanadium Layer"

Moscow, Svarochnoye Proizvodstvo, No 5, May 73, pp 16-18

Abstract: The authors study the interaction kinetics of a solid niobium alloy and liquid stainless steel through a vanadium layer. The study was carried out in a chamber at a residual pressure of $5 \cdot 10^{-5}$ mm Hg. The vanadium was applied from a melt by the vacuum condensation method onto the niobium backing surface which was first prepared by a mixture of acids, 40 percent HF+60 percent HNO₃. This ensures the satisfactory adhesion of the condensate to the surface. The specimen, consisting of stainless steel, vanadium layer, and niobium backing, was heated by an electron beam in order to approximate as closely as possible electron beam welding conditions. The heating temperature of from 1400 to 1550°C was regulated either by focus or electron flux variation. The results show that vanadium should be used in the electron beam welding of VN-2AE vanadium alloy and Kh18Ni9Ti stainless steel 0.5mm thick with only the steel being melted. The vanadium prevents the formation of an intermetallide layer in the fusion zone. In welding the indicated materials, a three micron thick vanadium layer makes

1/2

USSR

VEYNIK, V. A., et al, Svarochnoye Proizvodstvo, No 5, May 73, pp 16-18

it possible to expand the welding current by a factor of three in comparison to welding without vanadium. Barrier elements should be selected on the basis of graphs for mutual solubility of elements in the solid state. Such graphs should be constructed for the individual components of weldable alloys.

2/2

- 62 -

USSR

UDC 621.374.32

MASHCHIKHIN, G. V., CHUKAVIN, G. T., DERBENEV, P. V.

"A Magnetic Pulse Counter"

USSR Author's Certificate No 333711, filed 3 Aug 70, published 21 Apr 72
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 9,
Sep 72, Abstract No 9A40 P)

Translation: This Author's Certificate introduces a magnetic pulse counter which contains a storage transformer with recording, readout, feedback, and output windings on a core with rectangular hysteresis loop, a slave squegging oscillator, and a transistorized recording circuit. To improve reliability and ensure stable operation of the counter over a wide range of temperatures, a resistor is connected in the emitter circuit of the transistor in the recording circuit, and an auxiliary stage is added which is based on a transistor in a common emitter circuit whose base is connected through a resistor and capacitor to the emitter of the recording transistor, and the collector of the additional transistor is connected through a commutating capacitor to the base of the transistor in the squegging oscillator. One of the ends of the record-

1/2

USSR

MASHCHIKHIN, G. V. et al., USSR Author's Certificate No 333711

ing winding is connected to the slide wire on a variable resistor connected in parallel with the power supply. A capacitor is connected between the slide wire of the variable resistor and the common line.

2/2

- 10 -

USSR

UDC 616.988.25-022.395.42

CHUKAVINA, A. I., Professor, Chair of Infectious Diseases, Izhevsk Medical Institute

"Tickborne Encephalitis"

Moscow, Meditsinskaya Sestra, No 6, 1971, pp 35-38

Abstract: The principal agents of tickborne encephalitis in the USSR are *Ixodes persulcatus* and, less commonly, *Ixodes ricinus*. Infected ticks are found in most wooded areas of the country. The disease rate is highest in May, June, and July. The disease sets in acutely after an incubation period of 7 to 15 days. Five clinical forms are now distinguished: meningeal, meningo-encephalitic, polyencephalomyelitic, radiculoneuritic, and asymptomatic febrile. A characteristic of the disease is its two-wave course. The first wave of fever is usually short, from 3 to 7 days. The second wave follows one to two weeks later and lasts 9 to 12 days. It is invariably more severe than the first and is characterized by pronounced symptoms of meningitis or meningoencephalitis. Analysis of the spinal fluid is the principal method of diagnosis. Specific therapy includes the administration of immune gamma globulin (3 to 6 ml) intramuscularly 2 or 3 days in succession. The use of repellents, wearing of proper clothing, and refraining from drinking goat's or cows' milk when in tick territory are the most effective prophylactic measures.

1/1

- 39 -

Pathology

USSR

UDC 616.61-002.151-036.8-07:616.61-073.916

CHUKAVINA, A. I., and OSINTSEVA, V. S., Chair of Infectious Diseases, Izhevsk
~~Medical Institute~~

"Results of Investigation by Radioisotope Renography of Patients During Con-
valescence From Hemorrhagic Fever With a Renal Syndrome"

Moscow, Klinicheskaya Meditsina, Vol 49, No 4, Apr 71, pp 76-78

Abstract: The functional state of the kidneys of 78 patients during remote
periods of convalescence from hemorrhagic fever with a renal syndrome was
investigated by radioisotope renography, using I¹³¹-hyppuran. It was
established that return of the functional state of the kidneys to normal
generally took place within 3-6 months after onset of the disease and that it
required up to one year in some cases.

1/1

C
USSR

UDC 616.988.25-022:395.42-07:616.36-008-072.7

CHUKAVINA, A. I., Chair of Infectious Diseases, Izhevsk Medical Institute

"Liver Function in Tickborne Encephalitis with a Two-Wave Course"

Moscow, Klinicheskaya Meditsina, No 2, 1970, pp 90-93

Abstract: Liver disturbances were observed in a group of patients suffering from tickborne encephalitis with a two-wave course: the degree of disruption varied with the stage and severity of the disease. The shifts, which included a lowering of the antitoxic and absorption-excretion functions, and impairment of carbohydrate, protein, and trace element (copper, iron, aluminum) metabolism, were most pronounced during the second wave of fever. Functions returned to normal during the recovery period.

1/1

Acc. Nr: **AP0045595**

Ref. Code:
UR 0497

PRIMARY SOURCE: *Klinicheskaya Meditsina*, 1970, Vol 48,
Nr **2**, pp **90-93**

THE FUNCTIONAL STATE OF THE LIVER IN TICK-BORNE
ENCEPHALITIS WITH A TWO-WAVE COURSE

A. I. Chukavina

Summary

The author conducted a complex investigation of the liver functions in tick-borne encephalitis with a two-wave course. There were found marked disturbances of all the liver functions depending on the stage and severity of the disease. The most marked changes in the liver functions were noted in the period of the second febrile wave. Restoration of disturbed indices of the functional state of the liver occurred at late periods of convalescence.

//

REEL/FRAME
19780572

DI

6

USSR

UDC 621.31(47+57)

CHUKAYEV, Z. P.

"Development of Ukrainian SSR Electric Power Engineering"

Organiz. i planir. otrasley nar. kh-va. Mezhved. nauch. sb. (Organization and Planning of Branches of the National Economy. International Scientific Collection), 1971, vyp. 22, pp 32-37 (from RZh-Elektrotehnika i energetika, No 7, Jul 71, Abstract No 7E4)

Translation: In the integrated power system of the Ukrainian SSR in 1970, there were 8 rayon administrations, the installed power of the electric power plants reached 28.3 million kilowatts (24.3 in 1969), including power units with a power of 15.2 million kilowatts, output 140.2 Twatts-hr (128), including power units of 77.6 Twatts-hr or 56.5%, specific consumption of provisional fuel 377.5 g/kilowatt-hour (in 1965, 422.1), coefficient of centralization of generation of electric power 98.5% (95.5% in 1965). In 1964-1968, the Ukrainian SSR Ministry of Power Engineering accepted 224,000 km of 0.4-22 kilowatt overhead electric power networks from the kolkhozes, sovkhoses and other departments (42% of all the networks of the Ministry of Power Engineering). In 1969 the Western Ukrainian system transmitted 3.35 Twatts-hr to the CEMA countries; four of the thermoelectric power plants of the Ukrainian SSR had an installed
1/2

USSR

CHUKAYEV, Z. P., Organiz. i planir. otrasley nar. kh-va. Mezhved. nauch. sb., 1971, vyp. 22, pp 32-37

capacity of 2.3-2.4 million kilowatts; the 300 megawatt unit of the Tripol'skaya Thermoelectric Power Plant and the first 800 megawatt unit in a 2-shaft version in the USSR were put into operation. The 150 and 300 megawatt units did not achieve the designed indexes. In 1969, the utilization time of the units -- 5,520 hours/year -- was 11.7% below the planned time, and the calorific value of the coal was below the designed value (by 9% at the Pridneprovsk Thermoelectric Power Plant), and it is continuing to drop; as a result of equipment defects -- plant and after repairs -- there were 490 forced shutdowns with a total idle time of 25,100 unit-hours; at night and on holidays, the units were unloaded intolerably; thus, the Pridneprovsk Thermoelectric Power Plant operated at a load below 50% of the installed capacity. It is urgently necessary to construct a pumped-storage electric power plant and gas turbine peak electric power plants in the Ukrainian SSR. Economic indexes with respect to the fixed capital are presented.

2/2

- 113 -

USSR

UDC 620.193.01

TOMASHOV, N. D., CHUKALOVSKAYA, T. V., CHERNOVA, G. P., P LAVNIK, G. M.,
NAZAROVA, R. I., ZAKHAROV, A. P., and SHESHENINA, Z. YE., Academy of Sciences
USSR, Institute of Physical Chemistry

"Structural Study of Surface Layer on Ti-Pd Alloys"

Moscow, Zashchita Metallov, Vol 8, No 3, May-Jun 72, pp 291-294

Abstract: The article describes results of an electron microscopic, electron diffraction, and X-ray study of the surface layer forming on Ti-Pd alloy (Ti-0.2 percent Pd and Ti-1 percent Pd) during corrosion in 40 percent H_2SO_4 and 20 percent HCl at 100° . The electron microscopic study of the surface of Ti-Pd alloys after their corrosion confirms the supposition as to the accumulation of palladium on the surface in the form of very finely dispersed crystalline formations. After treatment of the surface with hot concentrated HNO_3 , which dissolves Pd, the electron microphotographs show no particles. In the case of Ti-1 percent Pd palladium mainly forms very fine particles on the surface. The Pd accumulations on Ti-0.2 percent Pd alloy reveal a tendency towards the branched growth of primary crystallization centers.

1/3

USSR

TOMASHOV, N. D., et al., Zashchita Metallov, Vol 8, No 3, May-Jun 72, pp 291-294

The results of the electron diffraction study of the surface of Ti-1 percent Pd alloy show that after corrosion in 20 percent HCl at 100° there are strong lines characteristic of Pd and very weak lines characteristic of TiO₂ and TiH₂. After treatment of the alloy in HNO₃ the lines characteristic of Pd disappear, and only TiH₂ and TiO₂ are found on the surface. The relative intensity of the reflections characteristic of Pd increases with an increase in the corrosion time, while it decreases for TiH₂ and TiO₂. After corrosion in 40 percent H₂SO₄ at 100° reflections characteristic of Pd, TiH₂, and TiO₂ are observed. However, the intensity of the Pd-characteristic lines is considerably weaker than after corrosion in 20 percent HCl at 100°, and they are of a diffuse character, while the intensity of the reflections characteristic of TiH₂ and TiO₂ is stronger.

X-ray analysis of the powdered surface layer that forms on Ti-1 percent Pd alloy shows that after corrosion in 20 percent HCl at 100° the alloy

2/3

USSR

TOMASHOV, N. D., et al., Zashchita Metallov, Vol 8, No 3, May-Jun 72, pp 291-294

preferentially contains metallic palladium. After corrosion of the alloy in 40 percent H_2SO_4 at 100° , along with the strongest Pd lines, considerably weaker lines characteristic of Ti_2N are observed.

3/3

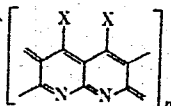
- 17 -

Acc. Nr.

AP0048838

Abstracting Service: 5-76
CHEMICAL ABST.Ref. Code
UR0459

91100h Polymer-analogous reactions of poly(α -chloroacrylonitrile). Chukhadzhyan, G. A.; Kalaidzhyan, A. E.; Petrovyan, V. A. *Vses. Nauch. Issled. Inst. Polim. Prod. USSR. Vysokomol. Soedin., Ser. A* 1970, 12(1), 171-6 (Russ). The dehydrochlorination of $[-CH_2C(CN)Cl-]_n$ (I) (K. Kubushiro, *et al.*, 1964) in $HCONMe_2$ soln., with $LiCl$, NEt_3 , or pyridine at $\sim 60^\circ$ gave $[-CH:C(CN)-]_n$ (II) which is sol. in $HCONMe_2$ and at $150-250^\circ$ cyclizes to III, which is a semiconductor (sp. vol. resis-



(III, X = H)

(VI, X = Cl)

4

tivity 8×10^9), not sol. in $HCONMe_2$, and stable $\leq 600^\circ$. III was pyrolyzed at $>600^\circ$ to a graphite-like stable substance. Heating I gave III directly, but $[CH_2C(CONH_2)Cl]_n$ on heating lost NH_3 and partly decompd. The reaction of I with H_2S gave $[-CH_2C(CSNH_2)Cl-]_n$, which on dehydrochlorination gave $[-CH:C(CSNH_2)-]_n$. The chlorination of II in $HCONMe_2$ gave $[-CHClC(CN)Cl-]_n$ (IV), which at room temp. lost HCl , forming $[-CCl:C(CN)-]_n$ (V). Thermal dehydrochlorination of IV or cyclization of V gave VI which is a thermally stable semiconductor. Chlorination of V in $HCONMe_2$ gave $[-CCl_2C(CN)Cl-]_n$.

CPJR

REEL/FRA
19800605

LD

7

1/2 035 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--POWER PLANT USE OF SULFUR CONTAINING PETROLEUM RESIDUES -U-

AUTHOR--(05)-KOLODIYEVA, YE.V., KUROCHKIN, A.I., ZHAROVA, M.N.,
KASHURICHEV, A.P., CHUKHANDV, Z.F.

~~COUNTRY OF INFO--USSR~~

SOURCE--IZV. AKAD. NAUK SSSR, ENERG. TRANSP. 1970, (1), 85-93

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PROPULSION AND FUELS, EARTH SCIENCES AND
OCEANOGRAPHY

TOPIC TAGS--PYROLYSIS, PETROLEUM DEPOSIT, GEOGRAPHIC LOCATION, CHEMICAL
COMPOSITION, ECONOMICS, FUEL CONSUMPTION, STEAM BOILER, BENZENE,
TOLUENE, NAPHTHALENE, ETHYLENE, COKE, SULFUR, POWER PLANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1996/1544

STEP NO--UR/0281/70/000/001/0085/0093

CIRC ACCESSION NO--AP0118527

UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118527

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POWER PLANT PYROLYSIS OF S CONTG. MAZUT (PETROLEUM RESIDUES) FROM ROMANSHKINO AND ARLANSK CRUDE OILS AT RATES OF 1.3-4.7 G-SEC YIELDED ACCORDING TO CALCNS. BASED ON A SINGLE PYROLYSIS CYCLE 57-78 AND 55-78PERCENT GAS AND 31-40 AND 27-38PERCENT LIQ. PRODUCTS, OF WHICH 7-11 AND 9-12PERCENT B. SMALLER THAN OR EQUAL TO 230DEGREES WERE RECOVERED BEFORE RECYCLING. OPTIMAL CONDITIONS FOR MAX. C SUB2 H SUB4 YIELDS (22.8 AND 17.5PERCENT) WERE 0.02 AND 0.08 SEC AT 945 AND 930DEGREES WITH STEAM, MAZUT RATIOS B OF 0.66 AND 0.49 KG-KG, RESP. FOR ARLAN MAZUT-C SUB6 H SUB6, PHME, ME SUB2 C SUB6 H SUB4 PLUS PHET, AND NAPHTHALENE, YIELDS WERE MAX. (6.0, 1.6, 0.2, AND 1.4PERCENT, RESP.) AT AN C SUB2 H SUB4 YIELD OF 13.8PERCENT WHEN THE CONDITIONS WERE 0.24 SEC AT 960DEGREES WITH B EQUALS 0.51, WHEREAS THESE YIELDS WERE 3.5, 2.1, 0.5, AND 0.5PERCENT AT AN CL SUB2 H SUB4 YIELD OF 17.5PERCENT WHEN THE CONDITIONS WERE 0.07-0.09 SEC AT 920-50DEGREES WITH B EQUALS 0.5 AND THE FRACTION OF THE ORIGINAL S LEFT IN THE COKE WAS SIMILAR TO 30PERCENT. THIS FRACTION WAS MIN. (SIMILAR TO 11 ANS 25PERCENT) AND C SUB2 H SUB4 YIELDS WERE HIGH (27.6 AND 17.6PERCENT) WHEN THE RESP. MAZUTS WERE PYROLYZED FOR 0.03 AND 0.06 SEC AT 915 AND 945DEGREES WITH B EQUALS 0.75 AND 1.0, BUT AROMATIC HYDROCARBON YIELDS WERE REDUCED BY SIMILAR TO 33PERCENT AND POWER EFFICIENCY BY SIMILAR TO 3.5-4.0PERCENT. IN COMPARISON WITH SEP. PRODUCTION OF POWER AND PETROLEUM PRODUCTS, POWER PLANT PYROLYSIS UNDER OPTIMAL CONDITIONS REDUCED BOILER FUEL CONSUMPTION BY SIMILAR TO 20PERCENT AND POWER COSTS BY SIMILAR TO 50PERCENT.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--SELECTION OF THE DESIGN AND OPERATING PRACTICE FOR OXYGEN LANCES
-U-
AUTHOR--(05)-GLINKOV, M.A., DEMIN, G.I., PERMINOV, E.M., CHUKHANOV, Z.F.,
KHMELEVSKAYA, E.D. /
COUNTRY OF INFO--USSR
SOURCE--STAL' 1970, 30-(2), 119-23
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--OXYGEN, OPEN HEARTH FURNACE, NOZZLE, ABSORPTION COEFFICIENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/0214 STEP NO--UR/0133/70/030/002/0119/0123
CIRC ACCESSION NO--AP0115918
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0115918

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RATE OF CHEM. AND HEAT ABSORPTION AS A FUNCTION OF THE DEGREE OF LANCE INCLINATION TO OPEN HEARTH BATH WAS DETD. ON MODELS, IN WHICH ABSORPTION OF NH SUB3 IN WATER FROM ITS MIXT. WITH AIR WAS MEASURED AND THAT OF HEAT SUPPLIED BY HOT AIR TO AN GIL BATH WAS EVALUATED. THE ABSORPTION COEFF. FOR A SPECIFIC RANGE OF OPTIMUM GAS CONSUMPTION, WHICH INCREASES WITH A LARGE NOZZLE DIAM., REACHES ITS MAX. VALUE WITH VERTICAL NOZZLES. NO LOWERING OF THE ABSORPTION COEFF. AFTER REACHING ITS OPTIMUM VALUE WAS NOTED FOR NOZZLES INCLINED 30-75DEGREES TO THE VERTICAL. GAS CONSUMPTION AND NOZZLE DIAM. ARE ASSOCD. BY THE ARCHIMEDES CRITERION AR (AR EQUALS W PRIME² GAMMA G-GD GAMMA L). THE MAX. ABSORPTION IS OBTAINED WITH AR 100, AND ABSORPTION COEFF. N CAN BE GIVEN WITHIN 5PERCENT AS N EQUALS 0.96-(AR PLUS 4.55). FOR A GROUP OF NOZZLES SUFFICIENTLY DISTANT (SIMILAR TO 10 DIAM. MIN.) IT IS ABOUT THE SAME FOR A GROUP OR INDIVIDUAL NOZZLE THE ANGLE OF NOZZLE INCLINATION TO THE VERTICAL AFFECTS BOTH THE RATE OF ABSORPTION AND THE DEGREE OF STIRRING, THE OPTIMUM FOR THE PURPOSE BEING 55DEGREES FOR CLOSELY PLACED NOZZLES AND 45DEGREES FOR MORE DISTANT ONES. FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

CHUKHAR'KO, Z.

Agriculture

SOI JPRS 53521
Ac Plus 71

AN 112
X
388883

Dez 1971

PLANNING REORGANIZATION RECOMMENDED FOR PROGRESSIVE SYSTEM

Article by Leonid V. Zhurav, Director of the Institute of Economic Sciences, Management Structures, Krasny Zvezda St., Moscow, U.S.S.R. Pravda, Moscow, No 7, 1971, pp 12-13.

The Director of the 24th CPSU Congress posed as a most important task of the new five-year plan the further improvement of the structure of national economic management. Much has been achieved in industry and in the work of the higher and middle links of branch economic management, the development of large coordinating organizations and companies, with due regard to the specific features of various branches.

All enterprises, plus oil and gas, and profitable (USSR) state plants have been divided, in the system of the Ministry of Procurement conditions of planning and economic incentives. This has without exception produced positive results. However, obtaining a rise in the effectiveness of social production in the system of the Ministry of Procurement does not mean completely excluding entirely to transferring enterprises and administrations to the new conditions of planning and economic incentives. It is also essential to the development and introduction of measures to ensure the further improvement and correction functioning of the enterprise under the new operational conditions.

One such measure is to improve the management of the enterprise's enterprise, with a view to ensuring adaptability and management staff and dependability and to raising the efficiency and effectiveness of management.

In some industrial branches (nonferrous metallurgy, petroleum, and others), much work has been done in recent years: Executive management

USSR

UDC 669.721.5'884.018.8:620.193

GLAGOLEVA, A. M., CHUKHIN, B. D.

"Effect of Some Alloying Additives on the Corrosion Resistance of Mg-Li-System Alloys"

Metalloved. splavov legkikh met. -- V sb. (Physical Metallurgy of Alloys of Light Metals -- collection of works), Moscow, Nauka Press, 1970, pp 195-198 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 41756)

Translation: The corrosion resistance of binary, ternary, and higher complex-alloyed Mg-Li alloys with 5-6 and 10-14% Li and Al, Zn, Cd, Ce, Sn, Mn, and Si additives was investigated. The corrosion rate was estimated by the amount of H_2 released in the hydrogen corrosion meter. It was demonstrated that the corrosion resistance of Mg-Li-alloys depends significantly on the chemical composition and, above all, on the Li content. The proposition of the possibility of creating Mg-Li-alloys with corrosion resistance on the level of series Mg-alloys is stated. There are 4 illustrations and an 8-entry bibliography.

1/1

USSR

UDC 669.721.017:620.193

GLAGOLEVA, A. M., and CHUKHIN, B. D.

"The Effect of Some Alloying Additions on the Corrosion Resistance of Alloys of the Mg-Li System"

Metallovedeniye Splavov Legkikh Metallov-Sbornik, Moscow, "Nauka", 1970, pp 195-199, resume

Translation: Results are presented of corrosion resistance investigations of binary, ternary, and more complexly alloyed magnesium-lithium alloys with 5%-6% and 10%-14% Li and additions of Al, Zn, Cd, Ce, Sn, Mn, and Si. The corrosion rate was estimated by the quantity of escaped hydrogen in the hydrogen corrosionmeter. It is demonstrated that the corrosion resistance of magnesium-lithium alloys depends substantially on the chemical composition, and primarily on the lithium content. The hypothesis is expressed on the possibility of the creation of magnesium-lithium alloys with a corrosion resistance on the level of mass production magnesium alloys. Four figures, eight bibliographic references.

1/1

USSR

RADZIVONCHIK, V. F., CHUKHLEV, A. N.

"Effect of Deformation Rate at Various Temperatures on the Structure and Hardness of Armco-Iron, Nickel and 1Kh18N9T Steel"

V sb. Vysokoskorostn. deformatsiya (High-Speed Deformation -- Collection of Works), Moscow, "Nauka", 1971, pp 112-114 (from RZh-Mekhanika, No 3, Mar 72, Abstract No 3V1471)

Translation: Metallographic and mechanical studies of nickel, armco-iron and 1Kh18N9T steel deformed at rates from $2 \cdot 10^{-5}$ to 200 m/sec in the subrecrystallization temperature range are described. An increase in deformation rate leads to a change in the plastic deformation mechanism of the metals and alloys. Recrystallization occurs fully upon deformation in the recrystallized temperature region when the deformation rate does not exceed $3 \cdot 10^{-2} \text{ sec}^{-1}$. Authors abstract.

1/1

CHUKHLOVIN, B. A.

SOJPRS 55100

4 FEB 72

UDC 613.693:616.981.25

DEVELOPMENT OF STAPHYLOCOCCAL INFECTION IN HUMAN SUBJECTS UNDER THE INFLUENCE OF SOME SPACEFLIGHT FACTORS

41) (Space Medicine)

Article by B. A. Chukhlovin, P. B. Ostroumov and S. P. Ivanova; Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 5, No 6, 1971, submitted for publication 27 June 1969, pp 61-657

Abstract: Healthy male test subjects exposed to extended bedrest, partial or complete isolation and inadequate personal hygiene were studied for the size of microbial foci in the nasal mucosa and pathogenicity of nasopharyngeal staphylococci. Most test subjects exhibited an increase in size of staphylococcal foci and an increased presence of staphylococci producing coagulase, hyaluronidase and lecithinase. They also exhibited an increased level of antibodies to staphylococcal enzymes in the blood. The carrying of a main phagocyte was usually established in isolated groups of subjects. The possibility of mutual infection of human subjects by pathogenic staphylococci under the influence of certain spaceflight factors was demonstrated.

Among the problems involved in the medical support of prolonged space flights is the development of measures for the prophylaxis of autoinfections, especially staphylococcal infections.

It is known from the literature that a state of prolonged hypodynamia, a decrease in natural body resistance (O. G. Alekseyeva and A. P. Volkova; N. I. Kobzar; G. P. Rikhsaylovsky, et al.). In this way the prerequisites can be created for the activation of potentially pathogenic microflora (B. A. Chukhlovin and S. P. Ivanova).

An increase in the size of staphylococcal foci on the mucous membrane of the nose and in the pharynx can serve as an index of an increase in the activity of microorganisms. Their increase to levels exceeding the

CHUKHNO, E. I.

STUDY OF VOLATILE SUBSTANCES RELEASED BY POLYMER CONSTRUCTION MATERIALS

Article by V. B. Yabluchkin, V. A. Shchuravaya, A. V. Feyer, A. I. Gorshunova, Ye. V. Oleinik and M. A. Gulyaeva. *Problemy Vozrozhdeniya i Razvitiya Kosmonavticheskoy Tekhnologii* (Problems in Space Biology and Technology), Moscow, 1971, pp 301-305.

III. Foam and Porous Plastics Based on Polystyrene and Polyurethane

Taking into account the peculiarities of practical use, one can expect polymer construction materials to be affected by different environmental factors, especially temperature. As experience demonstrates, the latter leads to the formation and release of great quantities of volatile substances (V. B. Yabluchkin, 1966). The objective of this study was an investigation of a complex of volatile substances released by some foam and porous plastics under conditions simulating the parameters of the surrounding medium in the course of their use.

Experimental Part

In our study we selected a group of nine samples of foam and porous plastics on the basis of foam polystyrene and foam-porous polyurethane, including: foam plastic on the basis of emulsion and beaded polystyrenes P-1, P-4 and P-5; hard foam plastics, polystyrene elastic incompressible porous plastic, porous, broken with thin plastic by means of glue based on solutions of silicone rubbers, porolon and articles made from it (porolon matting).

The method for formulating and conducting the analytical investigation of the volatile substances released by polymer construction materials, including chemical, spectrophotometric and gas chromatographic analysis, did not differ from that described in communication I.

SPRS #56, 499
14 JULY 72

CHUKHNO, E. I.

SPRS 57, 499
14 July 72

113

INVESTIGATION OF VOLATILE SUBSTANCES REMAINED IN POLYMER
CONSTRUCTION MATERIALS

Author: V. D. Babochkin, G. M. Popov, A. I. Gerasimov, V. A. Shchegoleva, Ye. V. Kolesnik and E. I. Chukhno. Institute of Chemical Problems in Space Biology and Medicine, Moscow, 1971, pp. 200-299.

I. Block, Sheet and Granulated Plastics

During recent years there has been a considerable broadening of the field of applicability of plastics as construction materials (E. Behr, 1967). Thermoplastics on the basis of poly-carbonates, polyamides and copolymers of the ABC type (Ginsberg, 1969) have shown the greatest possibilities of use in this direction. The content of volatile substances in polymers exerts a substantial effect on their physicochemical properties and toxicity (G. S. Vyatkovskaya, V. V. Lapshin, 1964; V. S. Babochkin, 1969). Accordingly, the purpose of this study was an investigation of the combination of a complex of volatile substances released by some block, sheet and granulated plastics under conditions simulating the external medium in the process of using polymer construction materials.

Experimental Part

We studied a group of block, sheet and granulated construction materials, including 10 samples on the basis of phenol-formaldehyde resins, polycarbonate (dillon), polyamide, polymethyl methacrylate and brand-name styrene-acrylonitrile copolymer (ABC resin).

All the samples were investigated at normal (20-30°C) temperature and with an exposure of 10 days. In addition, most of the materials, other than pressed powder and material on the basis of ABC copolymer, was investigated at increased

CHUKHNO, E. I.

SPRS 56,499
14 JULY 72

33

According to data published by V. Ya. Zhundrovskaya, et al. (1969), during the first two or three months after the fabrication of polymers there is a marked decrease in the

emission process. For example, A. R. Borov (1967, 1969) mentions that the dependence of gas emanation of polymers on the time of their use usually has an exponential nature. He proposed a formula for computing the change in concentration of formaldehyde in a kindergarten room during a period of time from nine to nineteen months after fabrication of the materials.

The literature contains data indicating that synthetic materials are a source of prolonged (up to three-five years) contamination of the atmosphere by harmful impurities (H. I. Yekimova, et al., 1969; G. N. Borzina, 1967; Zhundrovskaya, et al., 1969; L. M. Pichuk, et al., 1969). In addition, studies have been made pertaining to the dynamics of the gas emanation process.

In this study we investigated the change in the qualitative and quantitative composition of gaseous products escaping into the surrounding medium from polymers during their prolonged retention under natural conditions.

The polymers used for outfitting the cabin of a spaceship can release into the surrounding atmosphere different substances which are toxic to man. This gives rise to a necessity for studying the qualitative and quantitative composition of the volatile substances released by polymers and for predicting their gas emanations over long periods of time.

Article by A. I. Gorchunova and E. I. Chukhno; Moscow, Akademiya Voprosy Kozmicheskoy i Planetarnoy Fiziki (Current Problems in Space Physics and Astrofysics), Moscow, 1971, pp 89-92.

STUDY OF THE GAS EMANATION OF A NUMBER OF POLYMERS DURING THEIR PROLONGED STORAGE

CHUKHNO, E.I.

STUDY ON VOLATILE SUBSTANCES RELEASED BY POLYMERS BASED ON
 POLYMERIZATION OF VINYL MONOMERS

Article by Yu. V. Tolstina, V. S. Yablochkin, V. A. Zhurav-
 skaya, A. I. Gerasimova and G. I. Gerasimov, Moscow, Akademiya
 Nauk SSSR, Zhurnal Prikladnoi Khimii, 1971, 44(12), p. 2400-2404,
 in Zhurnal Prikladnoi Khimii, 1971, 44(12), p. 2400-2404, 1697

Abstract based on polyethylene derivatives containing
 halogens are used extensively in the national economy. Their
 use in outfitting living quarters and factory rooms is accom-
 panied by the possibility of atmospheric contamination by
 volatile products which are toxic to man.

The literature contains limited information on the san-
 itary and chemical characteristics of these groups of poly-
 mers. In studies published during recent years various authors
 mention the possibility that materials with a polyvinyl chlor-
 ide base can release such toxic compounds as carbon monoxide,
 dibutyl phthalate, ammonia, hydrogen chloride, chloroaceton
 compounds, fatty acids and aldehydes (V. G. Dvorkin, et al.,
 1966; V. D. Yablochkin, 1967; V. S. Yablochkin, et al.,
 Dvozhin, 1969). Under these very same conditions materials
 based on polytetrafluoroethylene release into the atmosphere
 only insignificant quantities of carbon monoxide and hydrogen
 ions (V. D. Yablochkin, 1967).

Due to the attention of polymers based on polyethy-
 lene derivatives containing halogens it seemed desirable to
 continue investigation of the gas release of samples of a num-
 ber of the polymer construction materials most frequently used
 in industry which are based on polyvinyl chloride and polytetra-
 fluoroethylene.

In the sanitary-chemical investigation we selected a
 group of six materials, three samples each from the polyvinyl

SPRS 516,499
 14 JULY 72

1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ADSORPTION AND CATALYTIC PROPERTIES OF HEMIN ON CARBON BLACK AND
PHOSPHOLIPID SURFACE -U-
AUTHOR--(03)--POLTORAK, O.M., CHUKHRAY, YE.S., VESELOVA, M.N.
COUNTRY OF INFO--USSR
SOURCE--VESTN. MOSK. UNIV., KHIM. 1970. 11(1), 14-17
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PHOSPHOLIPID, CARBON BLACK, ALUMINUM OXIDE, CATALYST ACTIVITY,
IRON COMPOUND, ADSORPTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/0453 STEP NO--UR/0189/70/011/001/0014/0017
CIRC ACCESSION NO--AP0128023
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0128023

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ABSORPTION AND CHANGE OF HEMIN CATALYTIC ACTIVITY ON CARBON BLACK AND CARBON BLACK,AL SUB2 O SUB3 SURFACES COVERED PRELIMINARY BY LECITHIN MONOLAYER WERE STUDIED. COORDINATE BINDING OF 2 FE ATOMS RESULTED IN DESTRUCTION OF HEMIN CATALYTIC ACTIVITY. PROTECTION OF THE HEME GROUP BY NONPOLAR RESIDUES, NOT TAKING PART IN COORDINATE BINDING WITH FE ATOMS CAUSED ACTIVATION OF HEMIN.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CATALYTIC PROPERTIES OF ADSORBED SUCCINATE DEHYDROGENASE -U-
AUTHOR--(02)-CHUKHRAY, YE.S., POLTORAK, O.M.
COUNTRY OF INFO--USSR
SOURCE--VESTN. MOSK. UNIV., KHIM. 1970, 11(1), 10-13
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--SUCCINATE DEHYDROGENASE, HEART MUSCLE, CATALYSIS, ENZYME
ACTIVITY, SPECTROPHOTOMETRY, PHOSPHOLIPID, SILICA GEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0250 STEP NO--UR/0189/70/011/001/0010/0013
CIRC ACCESSION NO--AP0120940
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0120940

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PURIFIED PREPN. ISOLATED FROM SWINE HEART MUSCLE WAS USED TO STUDY CATALYTIC PROPERTIES OF ADSORBED SUCCINATE DEHYDROGENASE. THE ACTIVITY WAS DETD. SPECTROPHOTOMETRICALLY AT 600 M MU IN THE PRESENCE OF 2,6,DICHLOROINDOPHENOL. AS ADSORBENTS PHOSPHOLIPID MONOLAYERS OBTAINED BY ADSORPTION OF CEPHALIN AND LECITHIN ON SILICA GEL AND CARBON BLACK WERE USED. THE PH OPTIMUM FOR THE ACTIVITY OF THE ENZYME ADSORBED ON DIFFERENT ADSORBENTS WAS EXAMD.

UNCLASSIFIED

USSR

UDC 569.112.227.3

KOROTUSHENKO, G. V., GRIGORKIN, V. I., CHUKHRIN, L. A., MILYAKOV, A. P.,
KUZ'MINA, T. M., KRIVONOSOVA, L. F., Murmansk Marine Engineering School,
Lipetskiy Affiliate of Moscow Institute of Steels and Alloys

"Cavitation-Corrosion Resistance of Chrome-Nickel-Tungsten Austenitic Steel"

Kiev, Fiziko-khimicheskaya Mekhanika Materialov, Vol 8, No 4, 1972, pp 92-93.

Abstract: The author s studied the cavitation-corrosion resistance of type 30Kh14N5V austenitic steels made in a vacuum furnace. The tungsten content was varied between 0.5 and 5%. The tendency of the austenite to form deformation martensite with 50% compression and with cavitation was also studied. The studies were performed in a 3% aqueous NaCl solution. The greater the tendency of the austenite toward the formation of both "volumetric" and "surface" martensite, the higher the cavitation-corrosion resistance. The maximum cavitation-corrosion resistance corresponds to the optimal content of tungsten in the steel, approximately 3%. Further increases to 5% cause the resistance and quantity of "surface" and "volumetric" martensite to decrease significantly. The reason for this maximum on the deformation martensite vs. alloy admixture curve has not been established. The steel with the optimal composition for corrosion-cavitation resistance has com-
1/2

USSR

UDC 569.112.227.3

KOROTUSHENKO, G. V., GRIGORKIN, V. I., et. al., Kiev, Fiziko-khimicheskaya
Mekhanika Materialov, Vol 8, No 4, 1972, pp 92-93.

paratively low corrosion rate in sea water. The steel with 3% tungsten
therefore has the maximum cavitation-corrosion resistance, superior to that
of Kh18Ni9Ti steel by more than an order of magnitude.

2/2

- 101 -

1/2 008 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--REACTION OF INDOLE WITH ALPHA KETO ALDEHYDES -U-
AUTHOR--(02)-ZHUNGIYETU, G.I., CHUKHRIY, F.N.
COUNTRY OF INFO--USSR
SOURCE--ZH. VSES. KHIM. OBSHCHEST. 1970, 15(3), 353-4
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--INDOLE DERIVATIVE, KETONE, ALDEHYDE, ORGANIC SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605012/C05 STEP NO--UR/0063/70/015/003/0353/0354
CIRC ACCESSION NO--AP0140266
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140266

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REFLUXING 4.68 G INDOLE WITH 6.08 G PHENYLGLYOXAL HYDRATE 1 HR IN C SUB6 H SUB6 GAVE 59PERCENT 3 INDOLYL(BENZOYL)CARBINOL, M. 170-2DEGREES; WITH 5 FOLD EXCESS OF PHENYLGLYOXAL IN ACOH OVERNIGHT, THE REACTION GAVE 77PERCENT DI(3,INDLYL)BENZOYLMETHANE, M. 210DEGREES. SIMILARLY PREPD. SHOWN ON MICROFICHE. FACILITY: INST. KHIM., KISHINEV, USSR.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--REACTION OF INDOLE WITH ALPHA,DIKETONES -U-
AUTHOR-(02)-ZHUNGIYETU, G.I., CHUKHRIY, F.N.
COUNTRY OF INFO--USSR
SOURCE--ZH. VSES. KHIM. ODSHCHEST. 1970, 15(2), 228
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--INDOLE, KETONE, BENZENE DERIVATIVE, ORGANIC NITRILE COMPOUND,
CHEMICAL REACTION MECHANISM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1162 STEP NO--UR/0063/70/015/002/0228/0228
CIRC ACCESSION NU--AP0128584
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0128584
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REFLUXING 0.585 G INDOLE AND 0.215
G AC SUB2 IN ACOH 20 MIN GAVE ON COOLING 68PERCENT
2,2,DI(3,INDOLYL),3,BUTANONE, M. 197DEGREES. BENZIL SIMILARLY GAVE
30PERCENT DI(3,INDOLYL)PHENYLBENZOYLMETHANE, M. 316DEGREES, WHILE
CYCLOHEXANE,1,2,DIONE GAVE 35PERCENT 2,2,DI(3,INDOLYL)CYCLOHEXANONE, M.
186DEGREES. INDOLE AND BZCN IN ACOH GAVE ALMOST 100PERCENT
3,BENZOYLINDOLE, M. 238DEGREES, AFTER SEVERAL DAYS AT ROOM TEMP. OR
AFTER BRIEF REFLUXING IN C SUB6 H SUB6. A REACTION SCHEME WAS PROPOSED.
FACILITY: INST. KHIM., KISHINEV, USSR.

UNCLASSIFIED

USSR

Power, Engine, Turbine, Pump

UDC 621.436.13-723

PILYUGIN, A. A., MIRYUSHCHENKO, A. A., and CHUKHRIYENKO, S. I.

"Diesel Engine Cylinder Lubricator"

USSR Authors' Certificate No 362970, Cl. F 16n 23/00, filed 15 Oct 70, published 20 Dec 72 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 3, 1973, p 76)

Abstract: The device contains a case which is mounted in the cylinder sleeve with a cavity for feeding oil to the sleeve duct and a check valve placed in this cavity. The unique feature of the device is that, to make the feed more even and the oil usage more efficient, the valve is situated at the cavity exit on the side of the sleeve and has a spring-actuated shank in the cavity and a rod in the duct. A second version of the device has a damper mounted in the cavity. The device is illustrated.

1/1

1/2 611 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--ANALOGS OF FLINT CLAYS IN SOVIET LITERATURE -U-
AUTHOR--~~CHUKHRCV, E.V.~~ C
COUNTRY OF INFO--USSR, UNITED STATES
SOURCE--CLAYS CLAY MINER, 1970, 18(1), 1-5
DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--CLAY, GEOLOGIC FORMATION, POROSITY, KAOLINITE

CENTRAL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605013/C03 STEP NO--UK/0000/70/018/C01/0001/0005
CIRC ACCESSION NO--AP0140367
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0140367

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TERM "FLINT CLAY" USED IN THE U.S.A. AND SEVERAL OTHER COUNTRIES, CORRESPONDS VERY CLOSELY TO THE TERM "TOASTED BREAD (SUKHAR) CLAY." IN BOTH U.S.A. AND U.S.S.R., THE TYPICAL OCCURRENCES OF "TOASTED CLAYS" ARE CONFINED TO DEPOSITS OF THE LOWER CARBONIFEROUS. IN THEIR PROPERTIES AND OCCURENCE THE WELL STUDIED TOASTED CLAYS OF THE BUKOVICHY DEPOSIT (NEVGOROD PROVINCE) ARE HIGHLY SIMILAR TO THE FLINT CLAYS OF MISSOURI, DIFFERING SIGNIFICANTLY ONLY IN HAVING LOWER BULK SP. GR. AND HIGHER POROSITY THAN DO MISSOURI FLINT CLAYS. VARIETIES WITH EXCESS FREE ALUMINA (DIASPORE, BOEHMITE) ARE OBSG. BOTH AMONG "TOASTED" AND FLINT CLAYS. THE AUTHOR SUGGESTS THE TERM "TOASTED COMPLEX" (SUKHARNII KOMPLEKS) WHICH CORRESPONDS TO W. D. KELLEP'S TERM "FLINT CLAY FACIES." THE CLAYS OF THE "TOASTED COMPLEX" ARE SEDIMENTS OF ANCIENT SWAMPS AND LAKES WHICH CONTAINED RICH VEGETATION. THEIR SOURCE MATERIAL WAS FINELY DISPERSED SILICATE PARTICLES TRANSPORTED FROM DRY LAND. THE STRUCTURE AND PROPERTIES OF TOASTED CLAYS ARE EXPLAINED BY THE PPTN. OF KAOLINITE AS COLLOIDAL CLUMPS IN WHICH CRYSTN. OCCURRED WITH FORMATION OF INTIMATE INTERGROWTHS AND VARIOUSLY ORIENTED SEGREGATIONS. FACILITY: ACAD. SCI., IGEN, MOSCOW, USSR.

UNCLASSIFIED

Magnesium

USSR

UDC: 669.721.41

KECHIN, V. A., VYATKIN, I. P., CHUKHROV, M. V., SHPAKOV, V. I.

"Relationship Between Quality of Magnesium and its Degree of Degassing During Refining"

Liteyn. Proiz-vo, Metalloved. i Obrabotka Met. Davleniyem [Foundry Production, Metal Science and Pressure Working of Metals -- Collection of Works], No 6, Krasnoyarsk, 1972, pp 46-48 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G205, by the authors).

Translation: The influence of the degree of oxidation of Mg on the effect of its degassing during refining is demonstrated. The degassing effect of Mg raw material is twice that of bar remelt. It is recommended that raw Mg be used as the raw material for the manufacture of Mg-based working alloys. 1 table, 5 biblio. refs.

1/1

USSR

UDC 669.721.4

2

KECHIN, V. A., VYATKIN, I. P., and CHUKHROV, M. V.

"Degassing Primary Magnesium by Different Refining Methods"

Moscow, Tsvetnyye Metally, No 5, May 73, pp 52-53

Abstract: This work was devoted to studying the change of gas content (hydrogen) in the refining of magnesium by settling and by treating with VI-2 flux and a titanium-containing flux. The raw magnesium was heated to 700, 740, and 780°C and saturated with hydrogen. Results showed that the amount of hydrogen remaining after refining was least for the titanium-containing flux process while the settling process left the most hydrogen. 1 figure, 2 bibliographic references.

1/1

USSR

UDC 669.721.4

KECHIN, V. A., VYATKIN, I. P., and CHUKHROV, M. V.

"Degassing Primary Magnesium by Different Refining Methods"

Moscow, Tsvetnyye Metally, No 5, May 73, pp 52-53

Abstract: This work was devoted to studying the change of gas content (hydrogen) in the refining of magnesium by settling and be treating with VI-2 flux and a titanium-containing flux. The raw magnesium was heated to 700, 740, and 780°C and saturated with hydrogen. Results showed that the amount of hydrogen remaining after refining was least for the titanium-containing flux process while the settling process left the most hydrogen. 1 figure, 2 bibliographic references.

1/1

Magnesium

USSR

UDC 669-17

CHUKHROV, M. V.

Modifitsirovaniye magniyevykh splavov (Modification of Magnesium Alloys),
Moscow, Metallurgiya, 1972, 176 pp

Translation of Annotation: The theoretical bases are given for metallurgical and physical methods of reducing the structure of various types of magnesium alloys. Technological processes are described for the modification of production processes on the mechanical and technological properties of magnesium alloys is shown.

The book is intended for technical engineering workers in foundry plants of metallurgical and machine works, for workers in scientific research institutes, and also for teachers and students at higher and middle learning institutions in metallurgical and machine-building specialties. 89 figures, 36 tables, 144 bibliographic citations.

Table of Contents:

Foreward	Page 4
Chapter I. Modification and Its Role in Technology of Producing Magnesium Alloys	5
1. Classification of Production Magnesium Alloys and Methods of Modifying Them	5

1/3