

KOVAL'SKAYA, K.V.

Searching for a resistant refractory for lining the slag  
zone of electric furnaces at the Belovo Zinc Plant. Sbor.  
nauch. trud. Gintsvetmeta no.23:194-200 '65.

(MIRA 18:12)

NIKHAMKINA, B.G. [Nikhamkina, B.H.], dots.; GOLOVKO, N.P. [Holovko, N.P.],  
student; LEVCHENKO, R.Ye. [Levchenko, R.IE.], student; KOVAL'SKAYA,  
L.I. [Koval's'ka, I.I.], studentka; PRIZ, N.S. [Pryz, N.S.],  
student; SUKOVA, R.I., studentka.

Condensation of phenol,  $\alpha$ -naphthol, and  $\beta$ -naphthol with formalde-  
hyde. Nauk. zap. ChDPI 11:345-348 '57. (MIRA 11:5)  
(Phenol condensation products) (Formaldehyde)

*KOVAL'SKAYA, L.P.*

FRUMKIN, M.L.; KOVAL'SKAYA, L.P.

Discussion of methods for the preparation of potatoes for dehydration.  
Kons.1 ov.prom. 12 no.9:26-31 S '57. (MLRA 10:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut konservnoy i  
ovoshchesushil'noy promyshlennosti.  
(Potato--Drying)

KOVAL'SKAYA, L.P.

FRUMKIN, M.L.; KOVAL'SKAYA, L.P.

Reduction of sugar content of potatoes for dehydration. Kons. i ov.  
prom. 13 no.3:6-10 Mr '58. (MIRA 11:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut konservnoy i  
ovoshchesushil'noy promyshlennosti.  
(Potatoes--Drying)

FRUMKIN, M.L.; KOVAL'SKAYA, L.P.

Nonfermentative darkening of dried vegetables and potatoes  
during storage. Kons. i ov. prom. 13 no.8:20-23 Ag '58.  
(MIRA 11:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut konservnoy i  
ovooshchesushil'noy promyshlennosti.  
(Vegetables, Dried--Storage) (Potatoes--Storage)

KOVAL'SKAYA, L. P.: Master Tech Sci (diss) -- "The role of potato sugars in drying and subsequent keeping of potatoes". Moscow, 1959. 16 pp (Min Higher Educ USSR, Moscow Tech Inst of the Food Industry), 150 copies (KL, No 18, 1959, 124)

FRUMKIN, M.L., starshiy nauchnyy sotrudnik; KOVAL'SKAYA, L.P., starshiy  
nauchnyy sotrudnik; YERIKHINA, N.V., mladshiy nauchnyy sotrudnik

Steam-heating method of preparing potatoes for drying. Trudy  
VNIKOP no.9:53-67 '59. (MIRA 14:1)

(Potatoes--Drying)

FRUMKIN, M.L., starshiy nauchnyy sotrudnik; KOVAL'SKAYA, L.P., starshiy  
nauchnyy sotrudnik

Storage of dehydrated vegetables and potatoes. Trudy VNIKOP no.9:  
99-118 '59. (MIRA 14:1)

(Vegetables, Dried--Storage)



FRUMKIN, M.L.; KOVAL'SKAYA, L.P.

Role of sugars in the processes responsible for the  
darkening of potatoes in drying. Kons.i ov.prom. 14 no.12:  
13-16 D '59. (MIRA 13:3)

1. Tsentral'nyy nauchno-issledovatel'skiy institut konservnoy  
i ovoshchesushil'noy promyshlennosti.  
(Potatoes--Drying)

ROGACHEV, V.I.; FRUMKIN, M.L.; KOVAL'SKAYA, L.P.; DOROFYEVA, Ye.V..

Changes in the coloring matter of beets sterilized by  
ionized radiations and heat. Kons.i ov.prom. 15 no.2:  
13-16 F '60. (MIRA 13:5)

1. Tsentral'nyy nauchno-issledovatel'skiy institut konservnoy i  
ovoshchesushil'noy promyshlennosti.  
(Beets--Sterilization) (Coloring matter)

ROGACHEV, V.I.; FRUMKIN, M.L.; KOVAL'SKAYA, L.P.; YEGOROVA, K.V.; DOROFYEVA,  
Ye.V.

Certain factors causing the darkening of the tuber tissues of potatoes  
sterilized by ionizing radiation. Kons.i ov.prom. 15 no.8:11-15 Ag  
'60. (MIRA 13:8)

1. Tsentral'nyy nauchno-issledovatel'skiy institut konservnoy i ovoshoche-  
sushil'noy promyshlennosti. (Potatoes) (Radiation sterilization)

ROGACHEV, V.I.; FRUMKIN, M.L.; KOVAL'SKAYA, L.P.; YEGOROVA, K.V.

Transformations of coloring matter in green peas during  
sterilization by heat and gamma rays. Kons.i ov.prom. 15  
no.9:19-24 S '60. (MIRA 13:9)

1. Tsentral'nyy nauchno-issledovatel'skiy institut konservnoy  
i ovoshchesushil'noy promyshlennosti.  
(Peas--Sterilization) (Coloring matter)

FRUMKIN, M.L.; KOVAL'SKAYA, L.P.; DOROFYEVA, Ye.V.

Transformations of fruit and berry anthocyanins in the course  
of sterilization by heat and  $\gamma$ -rays. Kons. i ov.prom. 16 no.5:  
8-12 My '61. (MIRA 14:5)

1. Tsentral'nyy nauchno-issledovatel'skiy institut konservnoy  
i ovoshchesushil'noy promyshlennosti. (Anthocyanins)  
(Fruit—Sterilization)

KOVAL'SKAYA, L.P.; BUSHKANETS, T.S.; DOROFYEVA, Ye.V.; YEGOROVA, K.V.

Pasteurization of sauerkraut with gamma rays. Kons. i ov. prom.  
16 no.6:9-12 Ja '61. (MIRA 14:8)

1. Tsentral'nyy nauchno-issledovatel'skiy institut konservnoy  
i ovoshchesushil'noy promyshlennosti.

~~Sauerkraut~~ (Sauerkraut—Pasteurization)  
(Gamma rays—Industrial application)

FRUMKIN, M.L.; KOVAL'SKAYA, L.P.; YEGOROVA, K.V.; DOROFEYeva, Ye.V.

Effect of the ionizing radiation on the amount and quality of  
grape juice. Kons. i ov. prom. 16 no.7:16-20 J1 '61.

(MIRA 14:8)

1. Tsentral'nyy nauchno-issledovatel'skiy institut konservnoy  
i ovoshchesushil'noy promyshlennosti.

(Grape juice) (Gamma rays--Industrial application)

FRUMKIN, M.L.; KOVAL'SKAYA, L.P.; YEGOROVA, X.V.; POVALYAYEVA, I.P.

Duration of clarification and the quality of grape juice treated with X-rays. Kons. i ov. prom. 16 no.9:8-13 S '61. (MIRA 14:8)

1. Tsentral'nyy nauchno-issledovatel'skiy institut konservnoy i ovoshchesushil'noy promyshlennosti.

(Grape juice) (Gamma rays--Industrial application)



KOVAL'SKAYA, L.P.; BUSHKANETS, T.S.; DOROFYEVA, Ye.V.

Effect of gamma rays on the storage time of strawberries. Kons.  
i ov. prom. 16 no.11:28-31 N '61. (MIRA 14:11)

1. Tsentral'nyy nauchno-issledovatel'skiy institut konservnoy i  
ovoshchesushil'noy promyshlennosti.  
(Strawberries--Storage)  
(Gamma rays--Industrial application)

KOVAL'SKAYA, L.P.; KOROFEYEVA, Ye.V.; PETRASH, I.P.

Effect of the  $\gamma$  rays on the rate of ripening and on the commercial quality of tomatoes. Kon.i ov.prom. 17 no.11:20-23 N '62.

(MIRA 15:11)

1. Tsentral'nyy nauchno-issledovatel'skiy institut konservnoy i ovshchesushil'noy promyshlennosti.  
(Tomatoes) (Gamma rays)

KOVAL'SKAYA, L.P.

Factors affecting the storage time and quality of fresh fruit,  
berries, and vegetables treated with gamma rays. Kons. i ov.  
prom. 18 no.10:22-26 0 '63. (MIRA I6:11)

1. Tsentral'nyy nauchno-issledovatel'skiy institut konservnoy i  
ovoshchesushitel'noy promyshlennosti.

KOVAL'SKAYA, L. P. ; VASIL'YEVA, K.V.

Effect of gamma on the synthesis of carotenoids in tomatoes.  
Kons. i ev. prom. no.7:29-32 JI '63. (MIRA 16:9)

1. Tsentral'nyy nauchno-issledovatel'skiy institut konserv-  
noy i oveshchesushil'noy promyshlennosti.

KOVAL'SKAYA, L.P.; SILAYEVA, S.V.

Preliminary testing in the study of the effect of ionizing radiation on the keeping time of fresh tangerines. Kons. i ov.prom. 18 no.9:26-30 S '63. (MIRA 16:9)

1. Tsentral'nyy nauchno-issledovatel'skiy institut konservnoy i ovoshchesushil'noy promyshlennosti.  
(Tangerines) (Radiation sterilization)

KOVAL'SKAYA, L.P.; VASIL'YEVA, K.V.; ZAKHAROVA, N.V.; PETRASH, I.P.

Effect of ionizing radiation on the afterharvest ripening  
of fresh fruit, berries and vegetables. Kons. i ov. prom.  
18 no.12:21-25 D '63. (MIRA 17:1)

1. Tsentral'nyy nauchno-issledovatel'skiy institut konservnoy  
i ovoshchesushil'noy promyshlennosti.

*a* L 9832-66 EWI(m) DIAAP  
ACC NR: AP5025462 SOURCE CODE: UR/0330/65/000/C09/0033/0037  
AUTHOR: Koval'skaya, L. P. (Candidate of technical sciences); Silayeva, S. V. (Junior research associate); Zakharova, N. V. (Junior research associate); Titarenko, M. I. (Senior research associate)  
ORG: VNIIEOP  
ORG: All-Union Scientific Research Institute of the Canning and Vegetable Dehydration Industry (Vsesoyuznyy nauchno-issledovatel'skiy institut konservnoy i ovoshchesushil'noy promyshlennosti)  
TITLE: Preservation of fruit and vegetables by ionizing radiation and sorbic acid  
SOURCE: Konservnaya i ovoshchesushil'naya promyshlennost', no. 9, 1965, 33-37  
TOPIC TAGS: food technology, irradiation  
ABSTRACT: Experiments show that irradiation of fruit preserves containing 0.015, 0.025, and 0.05% sorbic acid (I) does not result in complete sterilization, unless the doses are as high as 1.5, 1.2, and 1.0 million rads, respectively. Ionizing  
1/2 UDC: 664.539.101

L 9832-66

ACC NR: AF5025462

radiation decomposes (I) and thus destroys its preserving action. The lower the initial concentration of (I) in the syrup, the higher the degree of decomposition. The dosage acceptable from the standpoint of color and flavor is 0.4-0.6 million rads. This dosage is sufficient to preserve stewed fruit for long periods only if accompanied by an addition of 0.025% (I) and by heating for 10 min. at 50 C. Since (I) is more active in acid media, sterilization of pickled fruit occurs easier; 0.025% of (I) arrests entirely the growth of yeast, without the use of heat, and 0.4 million rads destroys the activity of bacterial cells. Owing to the presence of lactobacillus, tomatoes should be preserved with hot syrup and irradiated with 0.4-0.6 million rads, independently of the amount of (I) added. Cucumbers need hot syrup, 0.05 or 0.025% of (I) and 0.4-0.6 million rads, respectively. Orig art. has: 6 tables.

SUB CODE: 06/ SUBM DATE: none NR REF SOV: 000/ OTHER: 000



ACC NR: AP6025690

(A)

SOURCE CODE: UR/0330/66/000/005/0033/0038

AUTHOR: Koval'skaya, L. P. (Candidate of technical sciences); Silayeva, S. V. (Junior research associate)

ORG: All Union Scientific Research Institute of the Canning and Vegetable Drying Industry (Vsesoyuznyy nauchno-issledovatel'skiy institut konservnoy i ovshchesushil'noy promyshlennosti)

TITLE: Nature of microbiological decay of fresh fruits and vegetables treated with ionizing radiation

SOURCE: Konservnaya i ovshchesushil'naya promyshlennost', no. 5, 1966, 33-38

TOPIC TAGS: food preservation, ionizing irradiation, horticulture, microorganism contamination

ABSTRACT: Fresh strawberries, raspberries, apricots, peaches and plums irradiated with  $2 \times 10^3$  to  $3 \times 10^3$  rad doses were studied in stores and storage centers to determine the factors responsible for microbiological decay. Microorganism growth of irradiated and nonirradiated fruits was evaluated on the basis of yeast and mold counts taken for periods up to 20 days. Findings show that the decay rate of irradiated fruits is determined first of all by the restoration of spontaneous microflora. However, it is incorrect to maintain that irradiation inhibits all the

Card 1/2

UDC: 664.8.039.64

ACC NR: AF6025690

microflora to the same degree or that the nature of the decay which appears somewhat later is always the same as in nonirradiated fruit. The qualitative composition of the microflora is important, and even more important is the radioresistance of each of the species. The role of secondary infection is insignificant when fruit is stored under normal sanitary conditions. But, with a high level of air contamination, decay may occur earlier. The latter generally takes place with a prolonged storage period during which mold fungi have sufficient time to penetrate and develop in fruit tissue. Orig. art. has: 4 figures.

SUB CODE: 06/ SUBM DATE: none

Card 2/2

KOVAL'SKAYA, M. P.

USSR/Chemistry - Thermal Analysis

Nov/Dec 51

"Method for the Thermal Analysis of Systems Containing a Volatile Component,"  
B. A. Nikitin, M. P. Koval'skaya, M. F. Pushlenkov, Radium Inst imeni V. G. Khlopin,  
Acad Sci USSR

"Iz Ak Nauk SSSR, Otdel Khim Nauk" No 6, pp 661-666

In establishing the mp diagram for systems contg a volatile component, one must det the quantity of the latter remaining in the gas phase. To enter correction for this quantity, one must det deagrams of temp - pressure in gas phase in the presence of phases having all 3 phys states. Solidus curves must be used for establishing compn. New method for detg these curves was developed (centrifuging of sealed tubes at const temp near eutectic point; presence or absence of liquid in melting or freezing mixt is observed). The compd formed in system  $H_2S$  - phenol was found to be  $H_2S \cdot 3C_6H_5OH$  rather than  $H_2S \cdot 2C_6H_5OH$ , as assumed by foreign workers.

PA 19711

KOVAL'SKAYA, M.P.  
CA

2

Components of inert gases and laser manage with phaseol.  
 B. A. Kibelin and M. P. Koval'skaya (V. O. Kibopin Ka-  
 detskiy Inst., Moscow). *Teoriya i Eksper. Khim.* 5:3, 5, 8, 1964.  
 Kaban, *ibid.*, 1962, 24-30. Isomorphous substitution of SO<sub>2</sub>  
 by Ba in its mod. compd. with PbOH was demonstrated by  
 detour of the anal. of Ba taken up either in the crystal, of  
 the compd. of PbOH with gaseous SO<sub>2</sub> contg. a known amt.  
 of Ba, or with Ba admitted after the crystn. of the compd.  
 At equal, the distribution according to Kibelin's law of iso-  
 morphous crystn. should be  $f_1/f_2 = D_2/f_2$ , where  $f_1 = %$   
 $Kn$ ,  $f_2 = % SO_2$ , and the subscript  $f$  and  $F$  refers to the  
 cryst. and the gaseous phase, resp. The const.  $D = 0.20$   
 and  $0.26$  at  $0^\circ$  and at  $15^\circ$  resp.,  $\pm 10\%$ . Redtn. of the  
 SO<sub>2</sub>-PbOH melting diagram showed two eutectics, at 31.5.  
 (13 mol. % SO<sub>2</sub>) and  $-76^\circ$  (98.8 mol. % SO<sub>2</sub>) and a max.  
 at  $34.2^\circ$ , 25 mol. % SO<sub>2</sub>, i.e. corresponding to the compd.  
 SO<sub>2</sub>-3PbOH. This formula supersedes different formula-  
 tions previously reported, and was further corroborated by  
 chem. analysis. This compd. is analogous to the uncom-  
 tested compd. H<sub>2</sub>S-3PbOH. With less assurance, the  
 compd. with HCl m. congruently at  $35.9^\circ$ , also appears to  
 be close to the congr. HCl-3PbOH. The fact of isomor-  
 phous substn. of SO<sub>2</sub> by Ba leads, therefore, to the  
 formula Ba-3PbOH for the mod. compd. Dissem. pres-  
 sure (exam. H<sub>2</sub>) of mod. compd. of PbOH with the gases  
 listed below, at  $-20$ ,  $-20$ ,  $-10$ ,  $0$ ,  $5$ ,  $15$ ,  $20$ ,  $25^\circ$  are:  
 compd. with CO<sub>2</sub>, 240, 457, 770, 1240,  $\dots$ , Xc,  
 115, 165, 239, 631,  $\dots$ , HCl, 109, 187, 319, 650,  
 HBr, 29, 90, 91, 100,  $\dots$ , 302, 478, 631; SO<sub>2</sub>,  $\dots$ , 72,  
 100, 179, 288, 332. The m. temps. are, resp.  $45.4^\circ$ ,  $\dots$ ,  
 $35.9$ ,  $47.4^\circ$ ,  $\dots$ ,  $34.2^\circ$ , and the temp.  $f$ , at which the dissem.  
 pressure is 1 atm., is  $-10.3$ ,  $+4.0$ ,  $5.8$ ,  $25.3$ ,  $28.6$ ,  $39.0^\circ$ .  
 By the Clausius-Clapeyron formula the heats of formation  
 of the mod. compd. at 4 atm. (in the same order) 7.32, 7.23,  
 7.28, 8.46, 8.50, 9.00 kcal/mole; these heats are very close  
 to the heats of formation of hydrates, deriv. by the Foreland  
 (4 atm. above 7, 894(1973)) despite the difference of the co-  
 ordination nos. (3 and 6). The distribution const.  $D$  be-  
 tween Ba and H<sub>2</sub> in the mod. compd. with PbOH, at  $15^\circ$ ,  
 is 1.24. Consequently, Ba forms with PbOH a mod. compd.,  
 less stable than SO<sub>2</sub>, but more stable than H<sub>2</sub>S. N. Thoen

*KOVAL'SKAYA, M.P.*

VDOVENKO, V.M.; KOVAL'SKAYA, M.P.; KOVALEVA, T.V.

Uranyl nitrate complexes with diethyl ether. Zhur.georg.khim. 2  
no.7:1677-1681 J1 '57. (MIRA 10:11)  
(Uranyl nitrate) (Ethyl ether) (Electrolytes)

VDOVENKO, V.M.; KOVAL'SKAYA, M.P.; GERBANEVSKAYA, M.M.

Determining the solubility of the uranyl nitrate in diethyl  
ether. Report No.1. Trudy Radiev.inst,AN SSSR. 8:8-16 '58.  
(MIRA 12:2)

(Uranyl nitrate)

(Ethyl ether)

KOVAL'SKAYA, M. P.

0

PHASE I BOOK EXPLANATION

NOV/5084

International Conference on the Peaceful Uses of Atomic Energy. 2d, Geneva, 1958.

Doklady sovetskikh uchenykh. [Soviet scientific reports.] Khimicheskaya radioaktivnost' i radiatsionnaya prevrashcheniya (Reports of Soviet Scientists. V. 4): Chemistry of Radioactive Elements and Radiation Transformations. Moscow, Atomizdat, 1959. 323 p. 9,000 copies printed. (Series: Izdat Trudy)

Ed. (This page): A. P. Vinogradov, Akademicheskii Ed.: V. I. Labanov; Tech. Ed.: Ya. I. Misel.

FOURTH: This collection of articles is intended for scientists and engineers interested in the applications of radioactive materials in science and industry.

CONTENTS: This book contains 26 separate studies concerning various aspects of the chemistry of certain radioactive elements and the processes of radiation effect on matter. These reports discuss present-day methods of processing irradiated nuclear fuel, research in the chemistry of uranium, thorium, plutonium, plutonium, and americium, problems related to the sorption and bury-

Card 1/9

ing of radioactive waste, the radiolysis of aqueous solutions and of organic compounds, the mechanism of polymer chain grafting, and the effect of radiation on natural and synthetic rubbers. V. E. Prusakov edited the present volume. Most of the reports are accompanied by references. Contributions and individual investigations are mentioned in annotations to the Table of Contents.

TABLE OF CONTENTS:

Vinogradov, A. P. Meteorites and the Earth's Crust (The Geochemistry of Meteorites) (Report No. 292)	5
Serebrenko, V. B., G. G. Poritskiy, and A. S. Solovkin. Some Special Problems in the Reprocessing of Irradiated Heat-Producing Elements of the First Atomic Electric Power Plant of the USSR (Report No. 2182)	23
[The following personalities are mentioned as having taken part in this investigation: E. M. Iodkov, E. P. Lunichkina, Ye. V. Ushakov, Z. N. Davethova, and V. V. Chubakov.]	
Vlorenko, V. M., and M. P. Koval'skaya. Separation of Uranium and Plutonium From Fission Products by Extraction with a Mixture of Dibutyl Ether and Carbon Tetrachloride (Report No. 2216)	34

Card 2/9

23869

BR

S/186/61/003/001/001/020  
A051/A129

11 2200  
AUTHORS: Wdovenko, V.M., Koval'skaya, M.P., Shirvinokiy, Ye/V.

TITLE: Thorium extraction from sulfate solutions using octylamine

PERIODICAL: Radiokhimiya, v 3, no. 1, 1961, 3-6

TEXT: The use of amine-salts as extracting agents is more advantageous than ion-exchanging resins. The purpose of the authors' investigations was to determine the possibility of extracting thorium from acidic sulfate solutions using primary amines, and to investigate the composition of the extracted compound. During the extraction the neutralization of the amine by sulfuric acid takes place according to the equation:  $2RNH_2 + H_2SO_4 \rightarrow (RNH_3)_2SO_4$  and its salt is distributed between the water and organic phases. Table 1 shows the results of experiments on the relationship of this distribution to the concentration of the sulfuric acid in the water phase. It is seen that with an increase in the concentration, there is a certain tendency toward an increase in the solubility of the amine-salt. The effect of concentration of

Card 1/8



23869

9/186/61/003/001/001/020

AO51/A429

Thorium extraction from sulfate solutions...

the sulfuric acid and the nature of the solvent on the extraction of micro-quantities of thorium from aqueous solutions with a primary amine was further investigated and the results are shown in Fig.1. It is noted that the distribution coefficient of UX<sub>1</sub> decreases with an increase in the sulfuric acid concentration, and the nature of this relationship is maintained for all three diluents investigated (chloroform, carbon tetrachloride, benzene). The highest extraction of UX<sub>1</sub> is observed when using chloroform. The extraction of thorium from sulfuric acid solutions is expressed by the following formula:  $Th^{4+}_{aq} + 2SO_4^{2-}_{aq} + n(RNH_3)_2SO_4_{aq} \rightleftharpoons n(RNH_3)_2SO_4 \cdot Th(SO_4)_2$  (3), where n is the number of amine sulfate molecules bound with one molecule of thorium sulfate, thus,

$$K = \frac{[n(RNH_3)_2SO_4 \cdot Th(SO_4)_2]}{[Th^{4+}] \cdot [SO_4^{2-}]^2 \cdot [(RNH_3)_2SO_4]^n} \quad (4).$$

$$\alpha = \frac{[n(RNH_3)_2SO_4 \cdot Th(SO_4)_2]}{[Th^{4+}]} \quad (5), \text{ then}$$

replacing  $\alpha$  in equation (4),

Card 2/8

Thorium extraction from sulfate solutions...

23869  
S/186/61/003/001/001/020  
A051/129

$$K = \alpha \frac{1}{[(\text{RNH}_3)_2\text{SO}_4]^n \text{SO}_4^{2-}]^2} \quad (6),$$

and  $\alpha = K_1 [(\text{RNH}_3)_2\text{SO}_4]^n$ . If the log of equation (6) is taken, then  $\lg \alpha \approx$

$\lg [(\text{RNH}_3)_2\text{SO}_4]^n$ ;  $n \approx \frac{\lg K}{\lg [(\text{RNH}_3)_2\text{SO}_4]}$ . The experimental data on the study

of the effect of the amine concentration on the distribution coefficient of thorium revealed the value of  $n$  graphically (i.e., the number of moles of the amine-salt to 1 mole of thorium) for the case of macro- and microquantities extractions of thorium (Figs.2,3). Table 2 shows the experimental data obtained. From these data it is seen that with a change in the concentration of the amine, the ratio between the thorium and sulfate ion in the organic phase actually remains constant and equal to 1:4. The authors draw the following conclusions: 1) it is shown that octylamine sulfate can hardly be extracted with chloroform; 2) it is established that an increase in the sulfuric acid concentration in the aqueous phase brings about a sharp

Card 3/8

23869

Thorium extraction from sulfate solutions...

S/186/61/003/001/001/020  
A051/A129



drop in the thorium distribution coefficient; 3) the existence of a proportionality between the thorium distribution coefficient and amine concentration in the organic phase is proven; two molecules of amine sulfate pass into the organic phase with one molecule of thorium sulfate; 4) a determination is made of the shape of the extracted complex compound  $(C_8H_{17}NH_3)_4Th(SO_4)_4$ . There are 2 tables, 3 graphs and 8 references: 3 Soviet-bloc, 5 non-Soviet-bloc.

Table 1:

$C_{H_2SO_4}$ (in M)	Content of amine salt in chloroform (in %)
0.11	0.01
0.22	0.01
0.68	0.01
1.20	0.01
1.83	0.02
3.20	0.03
4.45	0.05

Card 4/8

VINOVENKO, V.M.; KOVALENKO, N.F.; ZHIRYOVA, Ye.A.

Extraction of nitric acid and uranyl nitrate with tri-  
n-nonylamino and tri-n-butylamine aqueous solutions.

Radiokhimiya 3 no.4:403-410 1961.

(RUSS 14.7)

(Nitric acid)

(Uranyl nitrate)

(Amines)

s/186/62/004/005/008/009  
E075/E135

AUTHORS: Vdovenko, V.M., Koval'skaya, M.P., and Smirnova, Ye.A.

TITLE: Extraction of hydrofluoric acid and uranium fluoride  
with tri-n-nonylamine solution in benzene

PERIODICAL: Radiokhimiya, v.4, no.5, 1962, 610-611

TEXT: The distribution of HF and UF<sub>6</sub> between aqueous solutions and tri-n-nonylamine (TNA) in benzene was studied. This follows the authors' previous work (Radiokhimiya, v.3, no.4, 1961, 403) on the extraction of mineral acids and U salts with TNA and tri-n-decylamine in benzene. The content of HF in the organic phase decreases markedly with its increasing concentration in the aqueous phase. On extraction of HF from 16-24 M solutions the organic phase contains 4 moles of the acid per mole of the amine. The transfer of water to the organic phase together with HF indicates that the amine salt is hydrated. The distribution coefficient of U(VI) decreases with a negligible increase of the acid concentration in the aqueous phase. On extraction from 10 M acid with 0.3 M amine the distribution coefficient decreases with the increasing concentration of U(VI) in the original solution,  
Card 1/2

KLYACHKO, I.R.; VINOGRADOVA, A.D.; KOVAL'SKAYA, M. Ye.

Determining iron and manganese content in photographic developers.  
Zhur. nauch. i prikl. fot. i kin. 6 no.1:61-62 Ja-<sup>F</sup>'61.  
(MIRA 14:3)

1. Moskovskiy poligraficheskiy institut.  
(Photography—Developing and developers)

VINOGRADOVA, A.D.; KOVAL'SKAYA, M.Ye.; SHEBERSTOV, V.I.

Determining copper content of photographic gelatins. Zhur.  
nauch.i prikl. fot.i kin 6 no.6:450-452 N-D '61. (MIRA 15:1)

1. Moskovskiy poligraficheskiy institut.  
(Photographic emulsions--Testing)

KLYZCHKO, I.R., prof.; BELOZERSKIY, I.V., dotsent; VINOGRADOVA, A.D., kand.-  
khim.nauk; KOVAL'SKAYA, M.Ye.; Primali uchastiye: MOISEYENKO,  
T.N.; VERZHBITSKAYA, M.Ye.

Using a semimicromethod to study zinc, nickel, iron, and copper  
impurities in type metal. Nauch. trudy MPI no.7/8:207-225 '58.  
(MIRA 14:12)

(Type and type founding) (Chemistry, Analytic--Qualitative)



KOVAL'SKAYA, N.

BARANSKIY, N.; BLIZNYAK, Ye.; BUKHGOL'TS, O.; VOSKRESENSKIY, S.; IVANOV, K.;  
KOVALEV, S.; KOVAL'SKAYA, N.; MAKUNINA, A.; MARKOV, K.; PETROVSKIY, I.;  
PROZOROV, Ye.; RAKITNIKOVA, A.; SAUSHKIN, Yu.; SOLOVTSEVA, T.; STEPANOV,  
P.; SHAPOSHNIKOV, A.; KHRUSHCHEV, A.

Nikolai Nikolaevich Kolosovskii. [Obituary] Vest.Mosk.un.9 no.12:139-141  
D '54. (MIRA 8:3)

(Kolosovskii, Nikolai Nikolaevich, 1891-1954)

KOVAL'SKAYA, Natal'ya Yakovlevna.

321M/5  
621.8  
.K8

Baku; ekonomiko-geograficheskiy ocherk (Baku; economic-geographic outline,  
by) N. Ya. Koval'skaya i A. M. Gadzhi-zade. Mskva, Geografiz, 1955.  
76 p. illus., maps.  
Bibliographical footnotes.

KOVAL'SKAYA, Natal'ya Yakovlevna; SAUSHKINA, Yu.G., prof., red.;  
LYUBIMOV, I.M., red.; KOZLOVA, T.A., tekhn. red.

[Methodology for economic geography research] Metodika ekonomiko-  
geograficheskikh issledovani; uchebnoe posobie dlia geografi-  
cheskikh fakul'tetov universitetov. Moskva, Izd-vo Mosk. univ.,  
1963. 233 p. (MIRA 16:4)  
(Geography, Economic--Methodology)

KOVAL'SKAYA, N.Ya.; MAKUNINA, A.A.

On Z.P. Igumnova's 60th birthday. Vest. Mosk. un. Ser. 5: Geog. 18  
no.3:73 My-Je '63. (MIRA 16:6)  
(Igumnova, Zoia Petrovna, 1903-)

KOVAL'SKAYA, N.Ya.; MAKUNINA, A.A.; NIKOLAYEVSKAYA, Ye.M.

Diploma project themes in the Geographical Faculty of Moscow  
University. Vest. Mosk. un. Ser. 5: Geog. 19 no.3:63-69  
My-Je '64. (MIRA 17:6)

1. Kafedra ekonomicheskoy geografii SSSR, kafedra fizicheskoy  
geografii SSSR i kafedra kartografii Moskovskogo universiteta.

SAUSHKIN, Yu.G.; KOVALEV, S.A.; KOVAL'SKAYA, N.Ya.; KORCVITSYN, V.P.;  
LAPPO, G.M.

Vadim Viacheslavovich Pokshishevskii, 1905.. ; on his 60th  
birthday. Vest.Mosk.un.Ser.5: Geog. 20 no.4:86-87 J1-Ag '65.  
(MIRA 18:12)

KOVAL'SKAYA, O.T.; LAVRUKHIN, A.M.; NIKOL'SKIY, N.K.; RYABOV, B.M.;  
TIKHODEYEV, N.N.

Comparison of corona losses in a.c. and d.c. electric power  
transmission lines with equal bundled conductors. Izv. NIIPT  
no.6:155-163 '60. (MIRA 14:7)

(Electric power distribution)

(Corona (Electricity))

KOVAL'SKAYA, O.T.; LAVRUKHIN, A.M.; NIKOL'SKIY, N.K.; RYABOV, B.M.

Study of corona losses on an experimental span of a d.c. power  
transmission line. Izv. NIIFT no.5:127-135 '60. (MIRA 14:1)  
(Corona (Electricity)) (Electric lines--Overhead)



KOVAL'SKAYA, S.N.

PHASE I BOOK EXPLOITATION SOV/4893  
Vsesoyuznoye soveshchaniye po fizike, fiziko-khimiicheskim svoystvam ferritov i fizicheskim osnovam ikh primeneniya. 3d, Minsk, 1959  
Ferrity; fizicheskiye i fiziko-khimiicheskiye svoystva. Doklady (Ferrites; Physical and Physico-Chemical Properties. Reports) Minsk, Izd-vo AN BSSR, 1960. 655 p. Strata slip inserted. 4,000 copies printed.

Sponsoring Agencies: Nauchnyy sovet po magnetizmu AN SSSR. Otdel fiziki tverdogo tela i poluprovodnikov AN BSSR.

Editorial Board: Resp. Ed.: M. M. Sirota, Academician of the Academy of Sciences BSSR; K. P. Belov, Professor; Ye. I. Kondorskiy, Professor; K. M. Polyakov, Professor; R. V. Telcshin, Professor; O. A. Sidorov, Professor; M. N. Shol'ts, Candidate of Physical and Mathematical Sciences; E. M. Smolyarenko; and L. A. Baskitrov, Ed. of Publishing House; S. Kholyavskiy, Tech. Ed.; I. Volobhanovich.

PURPOSE: This book is intended for physicists, physical chemists, radio electronics engineers, and technical personnel engaged in the production and use of ferrimagnetic materials. It can also be used by students in advanced courses in radio electronics, physics, and physical chemistry.

COVERING: The book contains reports presented at the Third All-Union Conference on Ferrites held in Minsk, Belorussian SSR. The reports deal with magnetic transforms, Belorussian SSR. galvanomagnetic properties of ferrites, studies, electrical and of ferrite single crystals, problems in the theory, the growth cochemical analysis of ferrites, studies of ferrites and physical-rectangular hysteresis loops and multicomponent ferrites exhibiting spontaneous magnetization, problems in magnetism attraction, highly coercive ferrites, magnetic spectroscopy ferromagnetic resonance, magneto-optics, physical principles of ferrite components in electrical circuits, anisotropy of electrical and magnetic properties, The Committee on Magnetism, AN BSSR (S. V. Vainskiy, Chairman) organized the conference. References accompany individual articles.

Ferrites (Cont.)

Kondorskiy, Ye. I., and V. I. Shakhov. Magnetic Spectra of Ferrites of the Systems $M_2-xM_1-xFe_2O_4$ and $M_2-xM_1-xFe_2O_4$	458
Smol'kov, N. A., Tai To-sheng, and Yu. P. Sisanov. Temperature Dependence of Some High-Frequency Properties of Ferrite Garnets of Itrium and Gadolinium	466
Posenko, L. A. The Effect of Mechanical Stresses on the Character of Radiofrequency Magnetic Spectra of Ferrimagnetic Semiconductors	474
Posenko, L. A. Magnetic Spectra of Manganese-Zinc Ferrites of High Permeability	483
Smol'kov, N. A., Yu. P. Sisanov, and S. N. Koval'skaya. Properties of Solid Solutions of $(M_2-xM_1-x)Fe_2O_4$	490
Smol'kov, N. A., and S. A. Matrakanyan. Some Properties of Magnesium-Nickel-Manganese Aluminate Ferrites	496
Card 14/18	

USSR 4/18

USSR / General and Specialized Zoology - Insects. P

Abs Jour : Ref Zhur - Biologiya, No 5, 1959, No. 20812

Author : Koval'skaya, T.

Inst : AS USSR

Title

: Influence of the Physiological Condition of the Colorado Beetle Entering Hibernation on the Course of the Diapause and Mortality During the Time of Hibernation

Orig Pub : V sb.: Koloradsk. zhuk i mery bor'by s nim. s.M., AN SSSR, 1958, 66-73

Abstract : The beetles were fed once or twice a day with the top leaves of certain varieties of potato, then they were assembled into groups of different sex and of insects with the same periods of feeding and activity. The latter period varied between 10 and 100 days, and the

Card 1/3

KOVAL'SKAYA, T.A.

Concentration of coal in heavy media in foreign countries. Koks i  
khim. no.9:60-64 '58. (MIRA 11:10)

1. Ukrainskiy uglekhimicheskiy institut.  
(Separators (Machines)) (Coal preparation)

21

Investigation of the floatability of small-size fractions of long-flame coal. T. S. Koval'skaya. *Izol* 26, No. 6, 30-1 (1951).—Flotation was tested on a no. of samples of Liskhansk coal. The final fractions of this coal are contaminated with clayey substances which on softening coated the coal particles and hampered their flotation. Using CaCl<sub>2</sub> as a depressor improved the concentrate. Starting with the 6-0 mm. fraction, screening out the 1-0 mm. fraction, then grinding the oversize to 1-0 mm. and floating it improved the concentrate considerably. Under these conditions the concentrate amounted to 70.18% of head and contained 7.82% of ash (the ash content of the head was 19.82%). The tailings amounted to 15.20% with an ash content of 70.72%. M. Hosh

KOVAL'SKAYA, T. S.

VOZHNYI, G. P., referent.; ~~KOVAL'SKAYA, T. S.~~ referent.

Methods for dehydrating fines (from "Glückauf," no. 17/18, 1955).  
Koks i khim. no. 3:55-57 '57. (MIRA 10:5)  
(Coal preparation) (Centrifuges)

Koval'skaya, V. N.

130-9-14/21

**AUTHORS:** Radchenko, R.P. and Koval'skaya, V.N.

**TITLE:** Tool for Punching Holes in Rail Chairs of New Section.  
(Instrument dlya proshivki pazov v novom profile rel'sovykh podkladok)

**PERIODICAL:** Metallurg, 1957, Nr 9, pp.28-30 (USSR)

**ABSTRACT:** In connection with the use of reinforced-concrete sleepers it has become necessary to punch holes of complicated shape in 2.6 mm thick rail chairs. Type Y10-steel punches had to be refaced after 80-100 holes and after refacing a further 300-600 holes could be punched. Of several substitute steels tested, type 5XHB (0.56% C, 0.64% Mn, 0.48% Si, 0.015% P, 0.005% S, 1.07% Cr, 0.90% W and 1.52% Ni) produced punches capable, after suitable heat treatment, of punching 800 to 1000 holes. Hard facing by arc welding is followed by three-fold tempering. Tests, whose results are tabulated in this article, showed that 700-1000 holes can be expected from the new type of punch before refacing, 15 000-37 410 after the first refacing and a total of 16 000 - 104 510. The introduction of the new punches has increased the production of

Card 1/2

CA KOVAL'SKAYA, Ye. M.

11.0

**The aftereffects of plasmolysis on permeability of plant cell.** Ye. M. Koval'skaya. *Trudy Inst. Fiziol. Rastenii*

*in: K. A. Timiryazev 7, No. 1, 220-31 (1950).* - Onions were plasmolyzed by solns. of K, Na, or Ca nitrates or chlorides, and cotton seeds were treated similarly in sucrose solns. Plasmolysis by chlorides and nitrates causes profound changes in the tissue. On secondary plasmolysis by KCNS soln., after deplasmolysis, there occurs a concave plasmolysis lasting for 0-18 min. indicating a severe loss of protoplasm permeability. This occurs with univalent and bivalent ions (Na, K, Ca). The preplanting seed treatment with hypertonic sugar soln. aids the salt resistance of the growing plant. The effect appears to be caused by alteration of colloidal state within the cells. Cotton seed pretreated with 4% NaCl increases the yield of cotton even on relatively saline soil. G. M. Kosolapoff

KOVAL'SKAYA, Ye. M.: Master Biol Sci (diss) -- "Changes in the salt-stability of plants during ontogeny". Moscow, 1958, published by the Acad Sci USSR.

19 pp (Acad Sci USSR, Inst of Plant Pathology im K. A. Timiryazev), 105 copies (KL, No 13, 1959, 103)



KOVAL'SKAYA, Ya.M.

Changes in the salt resistance of plants during ontogenesis [with  
summary in English]. Fiziol.rast. 5 no.5:434-444 S-0 '58.  
(MIRA 11:11)

1. Institut fiziologii rasteniy imeni K.A. Timiryazova AN SSSR, Moskva.  
(Plants, Effect of salts on)

KOVAL'SKAYA, Z.Ye.; KOZIK, Ye.M.

Ruler for determining gradient winds. Nauch.trudy TashGU no.225  
Fiz. nauki no.22:100-104 '64. (MIRA 18:1)

KOVALSKI, V. V. [Koval'skiy, V.V.]

Appearance and evolution of the biosphere. Analele biol 17  
no. 4:3-27 J1-Ag '63.

2

CA

Kinetics of the oxidation of methane and of ethane by oxygen. A. KOVALEXU, P. SADOVNIKOV AND N. CHIRKOV. *Physik. Z. Sowjetunion* 1, 451-70(1952). The rate of oxidation of  $CH_4$  in a quartz reaction tube increased exponentially with time and finally resulted in ignition of the  $CH_4-O_2$  mixt. It seemed to be predominantly a surface reaction. In  $C_2H_6-O_2$  mixts. held at a given temp. the pressure at first increased exponentially with time, passed through a max. and then decreased provided the initial pressure was above a certain limiting value; if the initial pressure was below this limiting value an explosion resulted when the max. of the initial increase was reached. The pressure increase accompanying the thermal decompn. of pure  $C_2H_6$  was proportional to the square root of the time. Washing out the reaction vessel with a NaCl soln. greatly retarded the initial pressure rise in the oxidation process. Treating the vessel with HF greatly accelerated the initial pressure rise. The surface of the reaction vessel was presumably activated in the course of an oxidation run. P. H. EMMETT

458.554 METALLURGICAL LITERATURE CLASSIFICATION



1ST AND 2ND ORDERS												3RD AND 4TH ORDERS											
PROCESSES AND PROPERTIES INDEX																							
CA																							
The kinetics of the combustion of hydrogen. A. KOYALSKII. <i>Physik. Z. Sowjetunion</i> 1, 595-6(1932).—An induction period of 0.1-0.3 sec preceded the ignition of a H-O mist, admitted to a vessel at 480°.																							
P. H. EMMETT																							
A.S.T.M. METALLURGICAL LITERATURE CLASSIFICATION																							
NATIONAL INDEX																							
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z																							

1ST AND 2ND ORDERS      PROCESSED AND PROPERTIES INDEX      100 AND 4TH ORDERS

27      24

Mechanism of the upper limit. A. KOVASKII AND P. SADOVNIKOV. *J. Phys. Chem.* (U.S.S.R.) 3, 272-3(1932).—See *C. A.* 26, 548f. E. H. RATHMANN

COMMON ELEMENTS

OPEN MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS      100 AND 4TH ORDERS

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

1ST AND 2ND EDITIONS      PROCESSES AND PROPERTIES INDEX

2

*BA*

**The kinetics of the burning of hydrogen. A. Kovalski.**  
*Physik. Z. Sowjetunion* 4, 723-34 (1953) (in German).  
 Pressure change and reaction rate plotted against time, values for the difference of the probability of chain branching and chain breaking divided by the life of active centers, and the pressure of the remaining unburnt gas are recorded for initial pressures of 3.7-8.4 mm. at 485°, 520° and 560°. Theoretical and expl. curves of reaction rate plotted against quantity that has reacted are compared. The max. reaction rate is proportional to the square of the pressure of the gas burned. L. G.

ASS-51A METALLURGICAL LITERATURE CLASSIFICATION

E-2

#	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	



PROCESSES AND PROPERTIES INDEX

INITIATING A HOMOGENEOUS REACTION IN A GAS BY SOLID CATALYSTS. M. I. Bogoyavlenskaya and A. A. Koval'skiy (Inst. Chem. Phys., Acad. Sci. U.S.S.R., Moscow). *J. Phys. Chem. (U.S.S.R.)* 20, 1325-31 (1946) (in Russian). 2

A solid catalyst can accelerate a reaction in the gas phase by emitting into the gas active atoms or radicals that initiate chains; this catalytic effect is analogous to photochem. initiation of reactions. A method is devised to show that a solid can accelerate a gas reaction, although the reaction takes place within the homogeneous gas phase, not on the solid surface. A thermocouple is placed along the axis of the reaction vessel and its readings are compared when the catalyst is (a) spread over the wall of the vessel, and (b) forms a coating on the thermocouple. If the reaction takes place on the catalyst surface, the temp. of the expt. (b) should be higher than in (a); and if the reaction is homogeneous, both readings should be identical. The identity of the two readings was observed for the reaction between CO and SO<sub>2</sub> in the presence of Al<sub>2</sub>O<sub>3</sub> at 170-250 mm. Hg (starting pressure) and 568-574°, the radii of the vessels being 14-19 mm. The reaction between SO<sub>2</sub> and H<sub>2</sub> in the presence of Al<sub>2</sub>O<sub>3</sub> also seems to be homogeneous. The oxidation of SO<sub>2</sub> in the presence of Pt is heterogeneous. The oxidation of H<sub>2</sub> and of NH<sub>3</sub> on Pt seems to be partly heterogeneous. J. J. Bikerman

A.S.B.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

E-2

"APPROVED FOR RELEASE: 06/14/2000      CIA-RDP86-00513R000825620004-4

APPROVED FOR RELEASE: 06/14/2000      CIA-RDP86-00513R000825620004-4"

KOVAL'SKIY, A.A.

Apparatus for examining large sections. Zav.lab.22 no.11:1369-1370  
'56. (MIRA 10:2)

(Metallography) (Optical instruments)

Koval'skiy, A.A.  
USSR/Physics

Card 1/1 Pub. 22 - 12/54

Authors : Gol'danskiy, V. I.; Koval'skiy, A. A.; Pen'kina, V. S.; and Tarumov, E. Z.

Title : Inelastic nuclear cross-sections for 120 and 380 Mev neutrons

Periodical : Dok. AN SSSR 106/2, 219-222, Jan 11, 1956

Abstract : Experiments are described which were conducted to justify the application of the so-called "optical model" for the determination of inelastic nuclear cross sections of high-energy neutrons. These experiments lead to some changes in the parameters of the optical model. Eleven references: 3 USSR, 8 USA (1949-1954). Table; graphs.

Institution : Acad. of Sci., USSR, Institute of Chemical Physics

Presented by: Academician I. Ye. Tamm, July 13, 1955

KOVAL'SKIY, A. A.

26-12-32/49

AUTHOR: None given

TITLE: Anniversary Celebration Meeting of the AN, USSR (Yubileynaya sessiya Akademii nauk SSSR)

PERIODICAL: Priroda, 1957, No 12, pp 107-111 (USSR)

ABSTRACT: On 1 November 1957, the USSR Academy of Sciences held a celebration meeting in the Moskva State University on the occasion of the 40th anniversary of the October Revolution. Academician K.V. Ostrovityanov in his opening speech "Triumph of Lenin's theory of the socialist revolution" pointed out the great success attained by the Soviet Union in the development of socialist economics, culture and scientific research. Academician A.N. Nesmeyanov, President of the AN, USSR told the audience about the achievements of science under the guidance of the Communist party. On the following day a general assembly discussed the foundation of the Siberian branch of the AN, USSR. It was pointed out by Academician M.A. Lavrent'yev that the Soviet government had assigned near Novosibirsk an area of 1,100 ha for the construction of 13 scientific research institutes. The Institute of Mathematics with a computing center which will be equipped with 4 high-speed electronic machines to cover the needs of industry and scientific establish-

Card 1/3

connected with the release of nuclear power. Doctor of Chemical Sciences A.V. Nikolayev was appointed director of this institute. The development of the automation of industrial processes will be handled by a special institute headed by Member-Correspondent of the AN of the Ukrainian SSR, K.B. Karandeyev. Academician M.A. Lavrent'yev was appointed director of the Siberian Institute of Hydrodynamics. An important part is reserved for the Institute of Theoretical and Applied Mechanics with Academician S.A. Khristianovich as director. The In-

Card 2/3

stitute of Biology and Zoophysics will be headed by Member-Correspondent of the AN, USSR, A.A. Trofimuk. The Institute of Cytology and Genetics will handle the problems of chemical and physical influences on heredity and the cytological principles of it. Member-Correspondent of the AN, USSR, N.P. Dubinin was appointed director. The Institute of Experimental Biology and Medicine will be headed by E.N. Meshalkin, Doctor of Medical Sciences. Also an Institute of Economics and Statistics and an Institute of High Tension is projected. Academician M.A. Lavrent'yev, who was elected chairman of the Siberian branch of the Academy of Sciences and vice-president of the AN, USSR, gave a detailed description of the science center in Siberia, which will also comprise an entire settlement for the scientists and their families, with schools, hotels, etc. In the vicinity, an experimental plant will be constructed for the development of modern scientific instruments. Academician P.L. Kapitsa mentioned three facts which in his opinion will ensure the success of the Siberian branch of the AN, USSR. They are: the enthusiasm of the young Soviet scientists, excellent equipment of the research establishments and good living conditions for all scientific workers. There is one Slavic (Russian) reference. Library of Congress

AVAILABLE:

Card 3/3

L 10785-67 ENT(1) RO  
ACC NR: R77003485

(N)

SOURCE CODE: UR/0394/66/004/006/0011/0017

32

AUTHOR: Berdennikova, S. P.; Zhirnova, N. N.; Koval'skiy, A. A.

ORG: Institute of Chemical Kinetics and Combustion, Siberian Department, AN SSSR  
(Institut khimicheskoy kinetiki i goreniya Sibirskogo otdeleniya AN SSSR)

TITLE: Effectiveness of highly dispersed insecticide aerosols

SOURCE: Khimiya v sel'skom khozyaystve, v. 4, no. 6, 1966, 14-17

TOPIC TAGS: aerosol, insecticide, entomology

ABSTRACT: The effectiveness of the use of the MAG high-powered aerosol generator, designed at the Institute of Chemical Kinetics and Combustion, Siberian Department, Academy of Sciences USSR, by S. I. Novikov, for the treatment of forests was evaluated. In a three-year period, 526 thousand hectares of forest were treated to control three species of mass pests: larvae of the pine looper moth, cockchafer, and gypsy moth larvae. The aerosol treatments were carried out in the night hours, preferably at wind velocities from 0.5 to 3 meters per second. Spraying was conducted with 10% DDT in diesel fuel against pine looper moth larvae, 8% DDT + 1.5% of the gamma isomer of HCCH [hexachlorocyclohexane] against the cockchafer, and 10% DDT + 2% of the gamma isomer of HCCH against gypsy moth larvae. The MAG and the highly dispersed insecticide aerosols generated by it were found to be superior to the existing ground machines and aircraft used for mass protection of plants (100-150 hectares are covered in one working hour by aircraft, 1750 hectares with the MAG). The insecticide consumption was reduced by 7 to 9-fold in comparison with other methods. The cost of treatment (together with the cost of the insecticide and solvent) was 17-24 kopecks per hectare. A. I. Komyagin, V. S. Zamyatin, Ye. I. Kirov, V. M. Ponomareva, Ye. I. Moskovchenko, and others participated in the work.

Orig. art. has: 2 tables and 1 figure. [JPRS: 38,970]

SUB CODE: 06, 13 / SUBM DATE: 20Dec65 / ORIG REF: 820 UDC: 632.952:541.182.2/3

Card 1/1

0922 0015

KOVAL'SKIY, A.; GITLINA, N.

Integrated brigades in the Vladivostok harbor. Mor. flot 23  
no.4:6-8 Ap '63. (MIRA 16:5)

1. Nachal'nik otdela truda i zarabotnoy platy Vladivostokskogo  
porta (for Koval'skiy). 2. Starshiy inzh. otdela truda i  
zarabotnoy platy Vladivostokskogo porta (for Gitlina).  
(Vladivostok--Longshoremen)

POZHIDAYEV, Nikolay Nikolayevich, dotsent; PAVLOV, Anatoliy Ivanovich, dotsent; VADIMOVICH, Ivan Ivanovich, dotsent; KOVAL'SKIY, Anatoliy Grigor'yevich, inzh.; ZORUK, Vladimir Luk'yanovich, inzh.; ANOKHIN, Viktor Vasil'yevich, inzh.; SERGIYENKO, I., red.; BONDARENKO, O., red.; GUSAROV, K., tekhn.red.

[Textile materials for the clothing industry] Materialovedenie shveinogo proizvodstva. Pod obshchei red. N.N.Pozhidaeva. Kiev, Gos.izd-vo tekhn.lit-ry USSR, 1959. 411 p. (MIRA 13:2)  
(Clothing industry) (Textile fabrics)



SUKHAREV, M.I., kand.tekhn.nauk; KARASEV, V.K., kand.tekh.nauk; PAVLOV, A.I.;  
kand.tekhn.nauk. dots.; VADIMOVICH, I.I., kand.tekhn.nauk, dots.  
KOVALSKIY, A.G., inzh.; ZORUK, V.L., inzh.

"Fabrics for the clothing industry" by T.A.Modestova, L.N.  
Flerova, B.A.Buzov. Reviewed by M.I.Sukharev and others. Izv.  
vys.ucheb.zav.; tekhn.prom. no.2:111-116 '59.  
(MIRA 12:10)

1. Leningradskiy tekstil'nyy institut im. S.M.Kirova (for  
Sukharev, Karasev). 2. Kiyevskiy tekhnologicheskii institut  
legkoy promyshlennosti (for Pavlov, Vadimovich, Koval'skiy  
Zoruk).

(Textile fabrics) (Clothing industry) (Modestova, T.A.)  
(Flerova, L.N.) (Buzov, B.A.)

KOVAL'SKIY, A.G., inzh.

Testing knit outerwear for abrasion. Izv. vys. ucheb. zav.;  
tekh. leg. prom. no.4:65-71 '63. (MIRA 16:10)

1. Moskovskiy tekstil'nyy institut. Rekomendovana kafedroy  
tekstil'nogo materialovedeniya.

PAVLOV, A.I., kand. tekhn. nauk; KOVAL'SKIY, A.G. [Koval's'kyi, A.H.];  
BOZHKO, I.Ya.

Problem of the felting of knit fabrics. Izh. prom. no.4:54-55  
O-D '65. (MIRA 19:1)

KOVAL'SKIY, A.N.

Conference on the production of curved automobile windshields.  
Stek. 1 ker. 17 no.10:46-48 '60. (MIRA 13:10)  
(Automobiles--Windows and windshields)

MEELYUK, N.S., kand.tekhn.nauk; KOVAL'SKIY, A.P., inzh.

Calculating reinforced concrete bar elements for  
deformations. Stroi. konstr. no.1:61-68 '65.

(MIRA 19:1)

1. Nauchno-issledovatel'skiy institut stroitel'nykh  
konstruktsiy Gosstroya SSSR, Kiyev (for Koval'skiy).

KOVAL'SKIY, A.V.; TRUBACHEV, T.Ye.

Improving production of brake shoes for railroad cars. Zhel. dor.  
transp. 40 no.2:56-60 F '58. (MIRA 11:3)

1. Spetsialist Nauchno-tekhnicheskogo soveta Ministerstva putey  
soobshcheniya (for Koval'skiy). 2. Nachal'nik otdela promyshlennykh  
predpriyatiy Tsentral'nogo proizvodstvennogo upravleniya Ministerstva  
putey soobshcheniya (for Trubachev).  
(Railroads--Brakes)

KOVAL'SKIY, A. Ye.

180781

---

USSR/Metals - Carbides, Hardness Testing Nov 50

"On Microhardness Tests of High-Melting Carbides,"  
A. Ye. Koval'skiy, L. A. Kanova, Combine of Hard  
Alloys

"Zavod Lab" No 11, pp 1362-1365

Describes procedure of expt conducted for examg in-  
fluence of various factors; such as cold hardening  
during polishing, load and rate of loading, location  
of impression on specimen and others, on results of  
microhardness tests of hard carbides.

180781

Study of the ternary carbide system CbC-TiC-WC.  
 A. E. Koval'chik and Ya. S. Umanoch. *J. Phys. Chem.*  
 (U.S.S.R.) 30, 328-33(1946) (in Russian); cf. preceding  
 abstr.—The region of one-phase system within the tri-  
 angle formed by CbC, TiC, and WC is outlined by x-ray  
 investigation of ternary mixts. melted together and then  
 annealed at different temps. At 2500° the boundary of  
 the one-phase region connects the points WC 75, CbC 25,  
 and WC 92, TiC 8 mol. %, and at 1600°, the points WC  
 15, CbC 85, and WC 50, TiC 50. At higher WC contents  
 a second phase appears which is WC contg. up to 1% of  
 CbC and/or TiC. The lattice spacing of the (hypo-  
 theoretical) pure WC must be 4.18-4.23 Å. The nearer is  
 the spacing of another carbide to this value, the greater  
 is the soly. of WC in this carbide. The mineral loparite  
 contains Cb and Ti in the mol. ratio 1:1. The Cb-Ti  
 alloy obtained from it can be transformed into CbC +  
 TiC and used for alloying with WC; this saves about 1/3 of  
 the W.  
 J. J. Silberman

ABB.36A METALLURGICAL LITERATURE CLASSIFICATION

6-177,178,179,180

GROUP #	GROUP 1	GROUP 2	GROUP 3	GROUP 4	GROUP 5	GROUP 6	GROUP 7	GROUP 8	GROUP 9	GROUP 10	GROUP 11	GROUP 12	GROUP 13	GROUP 14	GROUP 15	GROUP 16	GROUP 17	GROUP 18	GROUP 19	GROUP 20



KOVAL'SKIY, A. Ye.

"The micro-hardness of binary high melting carbides"  
pp. 170 of the monograph "Microhardness", Acad. Sci. U.S.S.R.  
1951

"Changing the micro-hardness of zirconium carbides  
in dependence to the carbon content."  
pp. 187 of the monograph "Microhardness", Acad. Sci. U.S.S.R.  
1951

KOVAL'SKIY, A. YE.

USSR/Metallurgy - Hard Alloys, Feb 53  
Titanium Carbide

"Dependence of the Microhardness of Titanium Carbide on Carbon Content," A. Ye. Koval'skiy, T. G. Makarenko

Zhur Tekh Fiz, Vol 23, No 2, pp 265, 266

Determines periods of space lattice, C content and microhardness for several specimens of Ti carbide with various C concentrations. Results are presented in form of diagrams. Max value for lattice

270195

period of Ti carbide was found by authors equal to 4.320A, being in disagreement with result obtained by American investigators Norton and Mowry (J of Metals, No 11, 1949).

270195

AUTHORS: Koval'skiy, A.Ye., Litvintsev, A.I., Vrzheshch, Ye.Ya. 32-12-42/7  
TITLE: AnX-Ray Camera for the Exposure of Polished Sections (Rentgenovskaya kamera dlya s"yemki shlifa).  
PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 12, pp. 1501-1502 (USSR)

ABSTRACT:

The new construction of an X-ray photographic camera suggested by this paper consists in the fact that in this case the film is fixed in a semicycle, whereas the sample is located in the center of the circle. In the same manner as in Debye's camera it is possible to take X-ray pictures at angles of from 0 to 90° (strictly speaking between 16 and 82°). If all lines are intended to be obtained on one film (for example when investigating phase composition), this can be brought about by taking repeated pictures on one and the same film at different angles. The remaining parts of the film surface are, on this occasion, covered by lead strips. The camera is described as follows: On a base plate, which rests upon 3 screws, 2 rests are firmly mounted, which serve as a base and means of fastening an adjustable curved photo film holder. Above it a screen of similar shape is fitted which is provided with an adjustable slit. The sample is fastened on a movable holder in the curvature axis of the

Card 1/2

An X-Ray Camera for the Exposure of Polished Sections

32-12-42/71

film holder. This holder rests upon 2 brackets which are mounted on the base plate. There is 1 figure.

ASSOCIATION: All-Union Scientific Research Institute for Hard Alloys  
(Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh splavov).

AVAILABLE: Library of Congress

Card 2/2 1. X-ray cameras-Operation 2. X-ray cameras-Application

18.6100

67837

SOV/180-59-6-15/31

AUTHORS: Koval'skiy, A.Ye., and Pivovarov, L.Kh. (Moscow)

TITLE: The X-ray Investigation of the Cementing Phase of Tungsten Carbide Cobalt Cermet Alloys

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1959, Nr 6, pp 113-120 (USSR)

ABSTRACT: The allotropic modification, the lattice parameter, the grain size and the quality of the surface of VK (tungsten carbide - cobalt) alloys were investigated. Alloys were made by the normal methods for preparing cermets. Co contents from 3 to 25% and sintering temperatures of 1350 to 1550 °C were used. In almost all the alloys the Co existed as the cubic form. Only in VK-3 (containing 3% Co) after sintering at 1420 °C and slow cooling, and VK-8 (containing 8% Co) after sintering at 1470 °C and slow cooling, was the hexagonal form found. The WC content in the Co solid solution does not depend on the quantity of Co in the charge and is determined by the conditions of sintering. The higher the sintering temperature, the greater the amount of WC in solution. The rate of cooling after sintering also affects the WC content in the Co phase, as shown by the

Card  
1/2

24.7100

77121  
SOV/70-4-6-22/31

AUTHORS: Koval'skiy, A. Ye., Semenovskaya, S. V.

TITLE: Concerning the Molybdenum Monocarbide Structure.  
Brief Communication

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 6, pp 923-924 (USSR)

ABSTRACT: Of the five polymorphous molybdenum monocarbides known in the literature, four are hexagonal but occur in different space groups and have differing unit translations a and c; the fifth is face-centered cubic. The metastable molybdenum monocarbide whose space group is  $C_{6h}^4 = P6_3/mmc$  could not up to now be produced pure. The authors accomplished this by hot pressing of the powdered mixture of 89% Mo + 11% C under 600, 500, and 200 kg/cm<sup>2</sup> pressure at 1,750 + 50°C for 30 min. X-ray diffraction data which are close to those reported by H. Nowotny, et al. (Z. Anorg. Chem., 267, 261-264, 1952), proved that specimens produced under 600 kg/cm<sup>2</sup> pressure consisted exclusively of the desired metastable

Card 1/2

Concerning the Molybdenum Monocarbide  
Structure. Brief Communication

77121  
SOV/70-4-6-22/31

phase. Specimens produced under  $500 \text{ kg/cm}^2$  pressure had the diffraction lines of both the metastable monocarbide and  $\text{Mo}_2\text{C}$ . Specimens produced under  $200 \text{ kg/cm}^2$  pressure consisted largely of  $\text{Mo}_2\text{C}$ .  $\text{C}_{6h}$  phase disappeared in both cold hardened and undeformed specimens after annealing at  $750^\circ \text{C}$  for 90 min; only  $\text{Mo}_2\text{C}$  lines remained. There is 1 table; and 5 references, 3 German, 1 U.S., 1 U.K. The U.S. and U.K. references are: T.A. Wilson, Trans. Amer. Inst. Min. Met. Engineers, 117, 188, 1934; K. Kuo, G. Hägg, Nature, 170, 245-246, 1952.

ASSOCIATION: All-Union Scientific Research Institute of Hard Alloys  
(Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh splavov).

SUBMITTED: June 15, 1959  
Card 2/2

67773

18.9100

SOV/126-8-5-27/29

AUTHORS: Koval'skiy, A.Ye., and Semenovskaya, S.V.

TITLE: On the Additional Weakening of X-ray Interferences in Powder Specimens

PERIODICAL: Fizika metallov i metallovedeniye, Vol 8, 1959, Nr 5, pp 794-796 (USSR)

ABSTRACT: It is commonly known that a correct structural interpretation of interference is impossible without taking into consideration the influence of sub-microstructural factors on the intensity (primary and secondary extinction, tertiary distortions, errors in the superposition of atomic layers). Besides, as shown by Wilchinsky (Ref 1), an additional weakening in intensity is observed in powder specimens which is due to "entanglement" of the reflected rays in coarse-grained non-compact specimens. Such an entanglement, according to Wilchinsky (Ref 1) is constant for all angles of reflection. If calculations are carried out, not for the absolute intensity of any one particular line but for the intensities of several lines, as has been done by Kochanovska (Ref 2) and Iveronova et al (Ref 3), the constant multiplier is excluded and hence the "powder"

Card  
1/4



67773

SOV/126-8-5-27/29

On the Additional Weakening of X-ray Interferences in Powder Specimens

factor of intensity could apparently be ignored. However, in practice this multiplier appears to change with the angle of reflection. This has been found by Mckeehan and Warren (Ref 4) for tungsten powder. The present authors also verified this fact on three tungsten powders: (a) coarse-grained, (b) fine-grained unmilled, and (c) fine-grained milled in alcohol. By hand pressing at various pressures, specimens of various compactness were obtained from each powder. The intensity of four lines of each specimen was measured in a URS-50I apparatus in  $CoK_{\alpha}$  radiation with an iron filter; the speed of rotation of the specimen was 0.5 deg/min, the speed of movement of the potentiometer strip was 600 mm/hour, the slit widths were 2, 1 and 0.5 mm. The results are shown in the table on p 795. The table data show that in the fine-grained unmilled powder the degree of compactness affects the intensity relatively little. In the coarse-grained and also in the alcohol-milled fine-grain powder the effect of compactness on intensity is considerable. Identical behaviour of such markedly different powders ✓

Card  
2/4

67773

SOV/126-8-5-27/29

On the Additional Weakening of X-ray Interferences in Powder Specimens

is possible, and is due to the formation in the fine-grained powder of conglomerates in which the rays become "entangled" in the same way as in large grains. The drop in intensity, as distinct from Wilchinsky's data, depends on the reflection angle, but this dependence is not a general one obtained for one particular specimen by Mckechnan and Warren, but is accidental by nature. The present authors think that this conclusion is reliable, since the magnitudes of intensity oscillations, shown in the table, exceed the experimental error limit (5%) in the majority of cases. The presence of such chance intensity variations in relation to reflection angle and compactness makes the interpretation of the intensity of powder specimens unreliable. As can be seen from the data of the same table, variations of the dimensions of the physical half-width of the line in relation to compactness do not in practice exceed the limits of experimental error, i.e. the magnitude of the half-width of the line is independent of the compactness of the specimen.

Card  
3/4

4

67773

SOV/126-8-5-27/29  
On the Additional Weakening of X-ray Interferences in Powder  
Specimens

There are 1 table and 4 references, of which 1 is  
Soviet, 1 German, 1 English and 1 Czech.

This is a complete translation.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut  
tverdykh splavov  
Card 4/4 (All-Union Scientific Research Institute for  
Solid Alloys) ✓

SUBMITTED: April 5, 1959

S/137/62/000/002/035/144  
A006/A101

AUTHORS: Koval'skiy, A. Ye., Pivovarov, L. Kh., Kuznetsova, K. F

TITLE: The effect of technological factors of manufacturing sintered carbides on changes in tungsten carbide radiographs

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 2, 1962, 28, abstract 2G224, ("Sb. tr. Vses. n.-i. in-t tverdykh splavov", 1960, no. 2, 105-108)

TEXT: On the surface of WC-Co sintered carbide specimens the authors revealed abrupt changes in the relative intensity of a series of X-ray diffraction lines of WC; a particularly high increase is observed in the intensity ratio of line pairs (0002)/(110) and (001)/(101). The effect of changes is sensitive to heterogeneity of specimens in the same grade of carbide and under the same sintering conditions. It is practically constant at changes in the Co-content from 6 to 15%; a further increase of the Co content causes a sharp rise of the effect. The effect is a function on the sintering temperature [for BK 6 (VK6) and BK 15 (VK15), it increases with temperature, and drops for BK 20 (VK20)]. This effect depends also on the duration of grinding the initial mixtures, the temperature of reduction and carburizing, and does not depend on

Card 1/2

The effect of technological factors ...

S/137/62/000/002/036/14,  
A006/A101

additional annealing which entails decomposition of Co of the solid solution. It is stressed that these changes in the relative intensity become rather noticeable only on the specimen surface; it is 0.5 for VK6 and 1.7 for VK20. After removal of the surface layer to 0.1 mm depth or etching off the Co phase, the  $\langle 002 \rangle / \langle 110 \rangle$  ratio drops to a magnitude which corresponds to pure WC.

I. Brokhin

[Abstracter's note: Complete translation]

Card 2/2

S/137/62/000/002/037/144  
A006/A101

AUTHORS: Koval'skiy, A. Ye., Semenovskaya, S. V.

TITLE: Changes in the tungsten monocarbide radiograph in sintered carbides

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 2, 1962, 28, abstract 26225  
("Sb. tr. Vses. n.-1. int tverdykh splavov", 1960, no. 2, 109-112)

TEXT: It is stressed that the magnitude of the intensity ratio of two adjacent interference lines of WC (110) and (002) on the surface of some WC-Co sintered carbide specimens, is considerably different from that of pure WC. It depends on a number of technological factors. The mentioned effect takes place in both intensified grinding and sintering of pure WC without addition of Co. The maximum magnitude of the aforementioned ratio (4.43) was also revealed on specimens of Ti-sintered carbide TI5K6. The nature and causes of the phenomenon observed have as yet not been revealed.

I. Brokhin

[Abstracter's note: Complete translation]

Card 1/1

34070

S/137/62/000/002/038/14  
ACC6/A101

15.2240

AUTHORS: Koval'skiy, A. Ye., Vrzheschch, Ye. Ya.

TITLE: The effect of the temperature of manufacturing single-phase tantalum tungsten carbide on the incubation period of decomposition

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 2, 1962, 28, abstract 26226 ("Sb. tr. Vses. n.-i. in-t tverdykh splavov," 1960, no. 2, 129-134)

TEXT. The methods of X-ray and metallographical analysis were used to investigate the effect of temperature of preparing a single-phase solid solution of TaC-WC on the duration of the incubation period and the dispersity of phases after decomposition. The specimens were prepared by two stages: a) roasting at 1,800°C of a WC and Ta<sub>2</sub>O<sub>5</sub> mixture with carbon black; b) repeated pressing and sintering of the carbide powders obtained at temperatures required to attain complete solubility, and above. It is shown that an increase of the preheating temperature prior to annealing extends considerably the incubation period. For instance, a specimen roasted at 1,850°C (1.5 hours) decomposed after 1 hour annealing at 1,400°C, but a specimen roasted at 2,350°C did not decompose after 48 hour annealing at 1,600°C. The dispersity of carbide phases is the higher

Card 1/2

The effect of the temperature ...

S/137/62/000/002/038/144  
A006/A101

the greater the oversaturation of the solid solution. Decomposition of the composite TaC-WC carbide up to equilibrium concentrate occurs in a jump after the incubation period. This is confirmed by the absence of partially decomposed crystals. In individual cases some crystals were observed, where the decomposition had not as yet started, together with cases of complete decomposition.

I. Brokhin

[Abstracter's note: Complete translation]

✓

Card 2/2

AUTHORS: Koval'skiy, A. Ye., Pivovarov, L. Kh.

TITLE: Grain size of the cobalt phase in sintered carbides

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000825620004-4

FEEDBACK: ("Sb. tr. Vses. n.-i. in-t tverdykh splavov", 1960, no. 2, 172-175)

TEXT: Specimens of BK 6 (VK6), BK 15 (VK15), BK 25 (VK25) and T15K15 (T15K15) were investigated by the X-ray method to determine the effect of the carbide composition and the sintering temperature on the grain size of the Co-phase. Changes in the grain size were not observed at sintering temperature variations within 1,380 - 1,500°C. The grain size of the Co-phase increases with a higher Co content in the carbide and is for VK6 36 μ; for VK15 59 μ, and for VK25 75 μ. In the T15K15 carbide the grain size is 112 μ, i. e. the substitution of a WC portion by composite TiC-WC carbide entails grain growth of the Co-phase. The parameter of the Co-phase lattice increases, on the contrary, with higher sintering temperature and does not depend on the Co content in the carbide.

✓

[Abstracter's note: Complete translation]

A. Epik

Card 1/1



KOVAL'SKIY, A.Ye.; PIVOVAROV, L.Kh.

Changes of the temperature factor in line intensity during the  
dissolution of tungsten carbide in cobalt. Fiz. met. i metalloved.  
9 no. 4:626-627 Ap '69. (MIRA 14:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh splavov.  
(Solutions, Solid) (Tungsten carbides)

18.9500  
15.2240

26566

S/126/61/012/002/018/019  
E032/E514

**AUTHORS:** Ivensen, V.A., Koval'skiy, A.Ye, Semenovskaya, S.V. and Eyduk, O.N.

**TITLE:** On the anisotropy of the elastic properties of tungsten monocarbide

**PERIODICAL:** Fizika metallov i metallovedeniye, 1961, Vol.12, No.2, pp.299-300

**TEXT:** In view of the difficulties in the production of single crystals of tungsten monocarbide and the determination of their properties, the present authors have investigated the anisotropy of its elastic properties using a single crystal of WC-Co (10 wt.% cobalt). It is known that reversible (i.e.elastic) thermal stresses occur in two-phase alloys as a result of differences in the thermal expansion coefficients of the two phases. In the present work the absolute magnitude of the stresses was measured using the *YPC-50* (URS-50) diffractometer with  $Co K_{\beta}$  radiation. The latter radiation was employed in order to exclude effects associated with the doublet structure of  $K_{\alpha 1\alpha 2}$ . The displacement of the "centre of gravity" of the lines

Card 1/3

26566

On the anisotropy of the elastic ...

S/126/61/012/002/018/019  
E032/E514

due to the specimen, relative to the lines due to a free specimen of tungsten carbide, was measured. In addition to this shift, a determination was made of the "structural" width of the  $\beta$  line due to the nonuniformity of the thermal stresses. The width of the lines obtained after the removal of the cobalt phase (by means of hydrochloric acid) was subtracted from the total width, since the removal of cobalt removes the thermal stresses. The subtraction was carried out with the aid of a linear formula. It was found that as the direction of the crystallographic plane approaches the c-axis, the elastic modulus increases. For example, the elastic modulus along the c-axis is greater than that along the a-axis by a factor of 1.5. Assuming a three-dimensional stress state, it is concluded that the tungsten carbide lattice in the alloy is compressed, which is in agreement with all the published models describing thermal stresses in the two-phase system (Ref.2: G. P. Zaytsev, FMM, 1956, 2, No.3, 494; Ref.3: W. Spath: Metall. 1958, No.10; Stahlbau, 1958, 24, No.3; Ref.5: J. Gurland, J.Trans. ASM., 1958, 50, 1063). The cobalt lattice, on the other hand, should be in a stretched state. It is pointed out, however, that

Card 2/3

KOVAL'SKIY, A.Ye., kand.khimicheskikh nauk

"X-ray diffraction analysis of polycrystals" by  
N.N.Kachanov L.I.Mirkin. Reviewed by A.E.Koval'skii.  
Zav.lab. 27 no.6:766-767 '61.

(MIRA 14:6)

(X rays--Diffraction) (Crystallography)  
(Kachanov, N.N.) (Mirkin L.I.)