

KUZNETSOV, V A.

KUZNETSOV, V. A., ARTYUKHOV, G. Y., MCGILNER, A. I., PROKHOROV, V. A.
STEKLOVSKIY, V. M., CHERNOV, L. A. AND LEYPUKSKIY, A. I.

"Experimental studies of some of the physical features of
beryllium-moderated intermediate reactors."

Report submitted for the IAEA Seminar on the Physics of Fast and Intermediate
Reactors, Vienna, 3-11 Aug 1961.

Acad. Sci. USSR Moscow

KUZNETSOV, V. A.; CHERNOV, L. A.; SHARADIN, V. I.

"Experimental study of some methods of compensation of high excess reactivity."

report submitted for 3rd Intl Conf, Peaceful Uses of Atomic Energy, Geneva,
31 Aug-9 Sep 64.

KUZNETSOV, V.A.

Symposium on exponential and critical experiments. Atom.
energ. 16 no.2:171-172 F '64. (MIRA 17:3)

BIT Y3 KUZNETSOV, V.A.
Feb 1954

Mechanics - Mechanical
Physical Properties

④
5

✓ 2357* Investigation of the Surface Tension of the Alloy Lead-Cadmium on the Boundary with Molten Eutectics LiCl-KCl and in Vacuum. (Russian.) V. A. Kuznetsov, V. P. Kochergin, M. V. Tishchenko and E. G. Pozdnyakova. *Doklady Akademii Nauk SSSR*, v. 92, no. 6, Oct. 21, 1953, p. 1197-1199.
Investigates electrocapillary phenomena of surface tension in a vacuum. All measurements were made at temperatures above 450 C. Graphs. 11 ref.

KUZNETSOV, V. A.

USSR/ Chemistry - Physical chemistry

Card 1/1 Pub. 22 - 28/51

Authors : Kuznetsov, V. A.; Ashpur, V. V.; and Poroshina, G. S.

Title : Surface tension of thallium amalgam in a vacuum

Periodical : Dok. AN SSSR 101/2, 301-304, Mar 11, 1955

Abstract : The surface tension of thallium amalgam was investigated in accordance with the method of maximum pressure in the drop by means of a special gravitation instrument. The minimum observed on the isothermal curves representing the surface tension of the investigated thallium amalgam is explained, first by the relatively small difference in the surface tension of the amalgam component and secondly by the reaction between the amalgam components. An increase in temperature reduces the rate of reaction, and the minimum on the surface tension isotherms is equalized. Nine USSR references (1928-1953). Graphs.

Institution : The A. M. Gorkiy Ural State University, Sverdlovsk

Presented by: Academician A. N. Frumkin, October 1, 1954

KUZNETSOV, V.A.; CHUFAROVA, I.G.

Causes of the foaming of pickling solutions. Zhur.prikl.khim. 29
no.5:688-692 My '56. (MLRA 9:8)

1. Ural'skiy gosudarstvennyy universitet imeni A.M. Gor'kogo.
(Metals--Pickling)

5(2), 24(3)
AUTHORS:

SOV/156-59-2-12/40
Kuznetsov, V. A., Zagaynova, L. S. Klevtsova, M. P.,
~~Shevrina, Z. A.~~

TITLE:

The Investigation of Electrocapillary Phenomena on Thallium -
Gold Alloys (Issledovaniye elektrokapillyarnykh yavleniy na
splavakh talliy-zoloto)

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya
tekhnologiya, 1959, Nr 2, pp 268-272 (USSR)

ABSTRACT:

The dependence of the potential maxima of the electrocapillary
curves upon the composition of the metal alloys has not yet
been clearly fixed. The papers by S. V. Karpachev, A. G.
Stromberg and collaborators (Ref 1) with amalgams are mention-
ed. The present paper deals with the investigation mentioned
in the title at 450° and a gold content of the alloy of
between 0 and 46% by atom. Thallium was supplied by the
Chimkentskiy svintsovo-tsinkovyy zavod (Chimkent Lead- and
Zinc Works). A eutectic mixture of lithium- and potassium
chloride served as electrolyte. Figure 1 shows the electro-
capillary curves for thallium and thallium - gold alloys.
They show that the addition of gold leads to an increased
surface tension at the boundary alloy - electrolyte. With in-

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SOV/156-59-2-12/48

The Investigation of Electrocapillary Phenomena on Thallium - Gold Alloys

creasing gold content the maximum of the electrocapillary curve shifts in positive direction. A. N. Frumkin (Ref 4) explains this shift of the potential of the zero-charge by the fact that the added metal (gold) occupies a certain part of the surface layer. The surface density of thallium and gold are calculated on this basis according to the formula of Gibbs; it is shown by table 1. The adsorption of Au becomes more and more negative with increasing gold content. For the composition of the surface the equation of E. A. Guggenheim and N. K. Adam (Ref 7) was used. Table 2 gives the surface concentration of Tl and Au and the degree of occupation of the surface layer. With increasing gold content in the alloy the degree of occupation of the surface by Au rises and attains 0.28 at a gold content of 45.9% by atom. The approximation character of the calculation - which is carried out on the assumption that the dimensions of the Tl- and Au particles are equal in the surface layer and in the alloy - is regarded as justified by the fact that the deviations of the Tl-Au-alloy from the law of the ideal solution are inconsiderable. This is shown by figure 2. It is, therefore, possible to

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neglect the effect of the mentioned differences. The average value of the potential of the zero charge referred to one electrode of melted lead in a eutectic mixture of LiCl and KCl was found to be equal to -0.28 v. The authors thank Academician A. N. Frumkin for the interest he displayed in their work. There are 2 figures, 2 tables, and 10 references, 9 of which are Soviet.

PRESENTED BY: Kafedra fizicheskoy khimii Ural'skogo gosudarstvennogo universiteta im. A. M. Gor'kogo
(Chair of Physical Chemistry, Ural State University imeni A. M. Gor'kiy)

SUBMITTED: July 22, 1958

Card 3/3

5(4), 21(7)
AUTHORS:

Zvyagintsev, O. Ye., Kuznetsov, V. A.

SOV/78-4-4-26/44

TITLE:

On Complex Compounds of Hexavalent Uranium With Hydroxylamine
(O kompleksnykh soyedineniyakh shestivalentnogo urana s gidroksilaminom)

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 4, pp 866-868
(USSR)

ABSTRACT:

The authors investigated the complex formation of hexavalent uranium with hydroxylamine in dependence of the pH value of the solution. When mixing a solution of uranyl nitrate with a neutral solution of hydroxylammonium chloride or hydroxylammonium sulphate with a pH value of 8 and more, uranium is retained as a complex in the solution. At $\text{pH} < 8$ yellow, difficultly soluble crystals are formed. These crystals are insoluble in some organic solvents. The formula $[\text{NH}_2\text{OH}]_2\text{UO}_4 \cdot \text{H}_2\text{O}$ resulted from the analysis. The complex solution of hydroxylammonium uranate ($\text{pH} > 8$) remains stable for several months. From these solutions uranium cannot be reduced or precipitated even by the action of alkali liquor at high temperatures. In the case of a large ex-

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SOV/78-4-4-26/44

, On Complex Compounds of Hexavalent Uranium With Hydroxylamine

cess of hydroxylamine and a pH value of 9.5 light absorption corresponds to the Lambert-Beer law. With the action of methanolic hydroxylamine on an alcoholic solution of uranyl nitrate an amorphous precipitation of the composition $[\text{NH}_2\text{OH}]_2\text{UO}_4$ occurs.

The authors synthesized alkali salts of the uranyl-hydroxylamine compounds in a ratio of Me : U : NH_2OH = 1 : 1 : 2 (Me = the ion of

the alkali metal). Further, the authors prepared the similar uranyl compounds with hydrazine, mono-, di-, and trimethylamine, di-, mono-, and triethylamine as well as ethylenediamine. No detailed experiments were made with this compounds. The following formula is suggested for soluble complex compounds of the uranyl ion with hydroxylamine:



The dilute aqueous solutions of pure compounds of this composition can be hydrolyzed with the formation of sodium uranate. The authors investigated some properties of the compounds such as solubility, density, and electric conductivity. The electric

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On Complex Compounds of Hexavalent Uranium With Hydroxylamine SOV/78-4-4-26/44

conductivity of the compounds with Me = Na, K is given in a table. There are 1 figure, 1 table, and 7 references, 1 of which is Soviet.

SUBMITTED: November 5, 1958

Card 3/3

SOV/80-32-2-48/56

AUTHORS: Kuznetsov, V.A., Antipina, A.A., Buryakovskaya, R.I.

TITLE: Investigation of the Specific Electric Conductivity of Aqueous Solutions $\text{NaCl}_{\text{sat}} + \text{NaOH}$ in the Temperature Range 75 - 95°C (Issledovaniye udel'noy elektroprovodnosti vodnykh rastvorov $\text{NaCl}_{\text{NAS}} + \text{NaOH}$ v oblasti temperatur 75 - 95°)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol XXXII, Nr 2, pp 456-458 (USSR)

ABSTRACT: The specific electric conductivity of saturated $\text{NaCl} + \text{NaOH}$ solutions is very important for the electrolysis of salt solutions. Experiments were carried out at temperatures of 75, 80, 85, 90 and 95°C. The results are shown in a table. There is 1 Soviet reference.

ASSOCIATION: Ural'skiy Gosudarstvennyy universitet imeni A.M. Gor'kogo (Ural State University imeni A.M. Gor'kiy)

SUBMITTED: September 23, 1957

Card 1/1

SOV/76-33-7-16/40

Kuznetsov, V. A., D'yakova, T. D., Mal'tseva, V. P.

5(4)
AUTHORS:

TITLE:

Investigation of Electrocapillary Phenomena in Bismuth - Cadmium Alloys and of the Surface Tension of These Alloys in Vacuum

PERIODICAL:

Zhurnal fizicheskoy khimii, 1959, Vol. 33, Nr 7, pp 1551-1559 (USSR)

ABSTRACT:

In spite of several papers devoted to electrocapillary phenomena (EP) of alloys (A), some problems have not yet been solved such as are the influence exercised by the alloy composition upon the potential maximum of the electrocapillary line. In addition to an investigation of (EP) a study of the surface tension of (A) would be convenient, especially a comparison of the adsorption phenomena at the boundaries between metal - electrolyte and metal - vacuum. Pertinent investigations were carried out on the bismuth - cadmium alloy, using a eutectic LiCl - KCl melt as an electrolyte. The electrocapillary lines were plotted by means of a capillary electrometer (Fig 1). The alloy surface tension was measured by the method of maximum pressure in the drop (Refs 3, 10) on a so-called gravitation device designed by P. P. Pugachevich (Refs 12, 13). A special

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Investigation of Electrocapillary Phenomena in
Bismuth-Cadmium Alloys and of the Surface Tension of These Alloys in Vacuum SOV/76-33-7-16/40

glass vessel (Fig 2) was used for and a method earlier described was applied to a determination of the density of the alloy under discussion. M. Yagofarova assisted in the last-mentioned measurements. The (EP), surface tension (ST), and density (D) were investigated at 450°C. Results (Table 1 on (EP), Tables 2, 3 on (ST) and (D) led to the following conclusions:
Increasing Bi concentration in the (A) reduces the (ST) at the boundary between the (A) and the electrolyte as well as in vacuum. The (ST) is most strongly reduced at low Bi concentrations, at which also the potential maximum of the electrocapillary lines (EL) is strongly shifted in the opposite direction. Calculations of the adsorption Γ_{Bi} at the boundary between (A) and electrolyte at the potential maximum (PM) of the (EL) indicated that there exists a linear dependence between the shift of the (PM) of the (EL) and the surface concentration Γ_{Bi} . The authors then explain measurement results on the (ST) in vacuum in connection with modern theories of the (ST) of binary systems, and calculate the (ST) isothermal lines by an equation given in reference 5. The essential difference between the experimentally

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Investigation of Electrocappillary Phenomena in
Bismuth - Cadmium Alloys and of the Surface Tension of These Alloys in Vacuum

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obtained and calculated (ST) values (Table 3) is explained by interatomic reactions; the authors further give an explanation of the difference between the individual interatomic distances in the surface layer and inside the (A). The similarity between the isothermal lines of the (A) surface tension in vacuum and at the boundary between the (A) and the electrolyte indicates equal composition of the (A) surface layers in both cases. There are 6 figures, 3 tables, and 19 references, 17 of which are Soviet.

ASSOCIATION: Ural'skiy gosudarstvennyy universitet im. A. M. Gor'kogo
Sverdlovsk (Ural State University imeni A. M. Gor'kiy, Sverdlovsk)

SUBMITTED: January 2, 1958

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5(4)

AUTHORS:

Kuznetsov, V. A., Aksenov, V. I.,

SOV/20-128-4-35/65

~~Klevtsova, M. P.~~

TITLE:

Zero Charge Potentials of Tellurium-Thallium Alloys

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 4,
pp 763-766 (USSR)

ABSTRACT:

The system Te-Tl was chosen because the two components - according to data by S. Karpachev and A. Stromberg (Ref 1) - have very different zero charge potentials facilitating the determination of the dependence of the zero charge potential of an alloy on its composition. The zero charge potentials were determined by investigating the electrocapillary properties of the liquid metals and alloys. The potential of the capillary electrodes was referred to an electrode of fused lead, the experimental temperature was 475°. Figure 1 shows the electrocapillary curves of the two components and their alloys. An addition of Tl (up to 25 atom%) to Te lowers the maxima σ_{\max} of the electrocapillary curves. At a high content of Tl, σ_{\max} increases again. Similar observations were made by A. N. Frumkin and A. V. Gorodetskaya (Ref 4)

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Zero Charge Potentials of Tellurium-Thallium Alloys SOV/20-128-4-35/65

on the electrocapillary curves of Hg and Tl amalgam. They explained this phenomenon by the fact that the field of the electric double layer influences the adsorption of the alloying constituents in the surface film. Figure 2 shows the dependence of the zero charge potential on the composition of the alloy. With an increasing content of Tl, the zero charge potential shifts in the negative direction. According to A. N. Frumkin, this is explained by a varying charge of the Tl adsorbed on the surface film. θ_2 is

determined - the fraction of the surface film occupied by particles of the second component (Tl). From the equation $d\sigma_{\max} = -\Gamma_1 d\mu_1 - \Gamma_2 d\mu_2$ (Γ_1 = Gibbs' surface density of Te, Γ_2 = the same for Tl, μ_1 , μ_2 = chemical potentials for Te and Tl), an equation is derived for $\Gamma_1 = 0$: $\Gamma_2^{(1)} = \frac{d\sigma_{\max}}{d\mu_2}$.

The activity of Tl was determined by measuring the electromotive force of the concentration chain Tl/eutectic mixture LiCl + KCl + 2% by weight of TlCl/alloy Tl-Te. The measurement results are given in table 1. Figure 3 shows the

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dependence of $\Gamma_2^{(1)}$ on the alloy composition. A strong deviation from Raoult's law is ascertained. This suggests that the surface film consists of dipoles and is not monomolecular. Similar phenomena were observed for the Tl amalgam by A. N. Frumkin and N. S. Polyanovskaya (Ref 6). Therefore, the potential shift for mono- and bimolecular layers was computed (Table 2), the assumption of a bimolecular layer showing a better agreement with the experimental data. The computation of θ_2 confirms the assumption made by A. N. Frumkin (Ref 4) stating that the shift of the zero charge potential is directly proportional to the fraction of the surface film occupied by the metal added. There are 3 figures, 2 tables, and 7 references, 6 of which are Soviet.

ASSOCIATION: Ural'skiy gosudarstvennyy universitet im. A. M. Gor'kogo
(Ural State University imeni A. M. Gor'kiy)

PRESENTED: April 13, 1959, by A. N. Frumkin, Academician

SUBMITTED: March 5, 1959
Card 3/3

KARABASH, A.G.; MOSEYEV, L.I.; KUZNETSOV, V.A.

Coextraction of trace elements in the extraction of chlorides with
ether. Zhur.neorg.khim. 5 no.6:1358-1365 Je '60. (MIRA 13:7)
(Extraction (Chemistry)) (Chlorides)

S/076/60/034/05/23/038
B010/B002

188100
AUTHORS:

Kuznetsov, V. A., Zagaynova, L. S., Ivanova, G. P.,
Klevtsova, M. P.

TITLE:

Investigation of Electrocapillary Phenomena in Tellurium -
Gold Alloys

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 5,
pp. 1077-1082

TEXT: Investigations of electrocapillary phenomena in pure liquid metals
had already been carried out by S. V. Karpachev, A. G. Stromberg, V. P.
Kochergin, Ye. F. Jordan, E. N. Rodigina, V. A. Smirnov, and L. I.
Antropov. It was found among other things that a shift of the potentials
of the zero charge is directly proportional to the concentration of the
added metal in the surface layer. To confirm this statement, the authors
of the present paper investigated the electrocapillary phenomena of Te-Au
alloys at 485°C in the concentration range of 0-44 atom% Au. The tellurium
activity was determined by the Knudsen method. Results of investigations
(Fig. 1, electrocapillary curves) show that the addition of Au to Te leads
to a rise in the surface tension between the phases. The potentials of the
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Investigation of Electrocapillary Phenomena
in Tellurium - Gold Alloys

S/076/60/034/05/23/038
B010/B002

peaks of the electrocapillary curve do not change with the alloy composition and are in agreement with the potential of the peak of the electrocapillary curve of pure tellurium (i.e., 0.6 v with respect to an electrode of molten lead). This fact is discussed on the basis of the theory worked out by A. N. Frumkin concerning electrocapillary phenomena, and is explained by the fact that gold occupies the surface layer to a low degree only (maximum 5%). The adsorption of Te and Au, as well as the degree of their surface layer occupation were calculated (Tables 1 and 2). Tellurium is adsorbed positively and gold negatively in the surface layer, i.e., gold is considerably more surface-inactive than tellurium. A paper by A. V. Gorodetskaya and R. M. Vasenin is mentioned in the text. There are 2 figures, 2 tables, and 11 references: 8 Soviet, 2 German, and 1 English.

ASSOCIATION: Ural'skiy gosudarstvennyy universitet im. A. M. Gor'kogo,
Sverdlovsk
(Ural State University imeni A. M. Gor'kiy, Sverdlovsk)

SUBMITTED: July 21, 1958

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81570

S/076/60/034/06/31/040
B015/B061

E.4600

AUTHORS: Kuznetsov, V. A. Klevtsova, M. P., Zagaynova, L. S.,
Vayntraub, L. S. Korobova, T. A. (Sverdlovsk)

TITLE: Investigation of Contact Potential Differences Between Sn and
Sn-Te Alloys and the Electrocapillary Phenomena on Sn-Te
Alloys 21

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 6,
pp. 1345-1350

TEXT: On account of his investigations of the electrocapillary phenomena on thallium amalgams (Ref. 1), A. N. Frumkin established that the difference in the potentials between the metals in the point of zero charges is similar to the differences in the contact potentials between the same metals in a vacuum. Experimental tests of this assumption were carried out several times as by S. V. Karpachev and A. G. Stromberg (Ref. 2), O. Chaltykian and M. Proskurnin (Ref. 3), and V. A. Smirnov and L. I. Antropov (Ref. 4); few reliable results were, however, obtained. In this case the above examinations were carried out for this reason, as it was

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Investigation of Contact Potential Differences Between Sn and Sn-Te Alloys and the Electrocapillary Phenomena on Sn-Te Alloys S/076/60/034/06/31/040 B015/B061

to be assumed that tellurium would be surface-active with respect to tin, and thus a large difference in contact potential between Sn and Sn-Te alloys can be detected at low tellurium concentrations. The measurements were carried out at 450°C and $\approx 10^{-5}$ torr in an apparatus (Fig. 1) similar to the one in Ref. 3, and a special ampule (Fig. 2) was used. The vacuum contained a BH-461M (VN-461M) preliminary vacuum pump, an MM-40A (MM-40A) diffusion pump, and a BT-2 (VT-2) thermocouple and BM-3 (VI-3) ionization-vacuum gauge. Tin purified by zone melting from the Sverdlovskiy reaktivnyy zavod (Sverdlovsk Reagent Works) was used. The potential differences were determined by the method of the displacement of the diode characteristics. The diagrams obtained (Figs. 3, 4) of the differences in the contact potentials between Sn and Sn-Te alloys with 0.02 and 0.15 wt% Te show that the difference is 0.07 v or 0.15 v. The electrocapillary curves (Fig. 5) for Sn and Sn-Te alloys of the above concentration show that according to expectations, Te is surface-active with reference to Sn. The potentials of the zero charge are thus shifted to positive values, and the size of the shift is similar to the difference in the contact potentials between Sn and the above Sn-Te alloys

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B015/B061

(Table). Finally, Academician A. N. Frumkin is thanked for his advice, and the collaborator of the Institut elektrokhemii AN SSSR (Institute for Electrochemistry of the AS USSR) N. A. Shurmovskaya as well. A paper by M. V. Smirnov (Ref. 5) is referred to. There are 5 figures, 1 table, and 12 references: 11 Soviet and 1 American.

ASSOCIATION: Ural'skiy universitet im. A. M. Gor'kogo (Ural University imeni A. M. Gor'kiy)

SUBMITTED: October 10, 1958

Card 3/3

KUZNETSOV, V.A.; ZAGAYNOVA, L.S.

Zero charge potential of indium. Zhur. fiz. khim. 35 no.7:1640
Jl '61. (MIRA 14:7)

1. Ural'skiy gosudarstvennyy universitet im. A.M.Gor'kogo,
Sverdlovsk.
(Indium—Electric properties)

23815

S/020/61/138/001/020/023
B101/B231

26.2531

AUTHORS: Kuznetsov, V. A., Zagaynova, L. S., Loginova, N. P.,
Lyubimtseva, I. Ya., Onopriyenko, N. S., and Tsimbal, L. Ye.

TITLE: Contact potential differences between some liquid metals and their alloys

PERIODICAL: Doklady Akademii nauk SSSR, v. 138, no. 1, 1961, 156-158

TEXT: This is to continue the authors' research on contact potential differences between liquid metals and their alloys (ZhFKh, 34, 1349 (1960)). The contact potential differences were determined thermoelectronically by recording the volt-ampere characteristics of a diode with once the pure metal and then the alloy being used as anode. Based upon the assumption that the contact potential difference is approximately equal to the difference of the zero charge potential and on the grounds that there is a great difference between the zero charge potentials, it appears advantageous to determine the contact potential difference (CPD) particularly between Zn, Cd, Tl, and Bi on the one hand, and their respective alloys with Te on the other. Difficulties that arose were due

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Contact potential differences between...

to the fact that Zn and Cd have an excessively high vapor pressure and that a number of these metals, inclusive of Bi, form compounds with Te. The contact potential difference was, therefore, determined: 1) for Sn and Sn-Tl alloy (23.8 % Tl) (Fig. 1); 2) for Tl and Tl-Sn alloy (49.8 % Sn) (Fig. 2A); 3) for Tl and Tl-Te alloy (50.5 % Te) (Fig. 2B); 4) for Bi and Bi-Te alloys (3.6 % Te and 9 % Te). Bi and Sn were to be filed among the purity class B-3 (V-3); Tl contained about 0.02 % of Fe, Pb, and Cd impurities (spectroscopically determined by R. Gutkina). Te was twice distilled in a vacuum. All the measurements were made at a temperature of 450°C. The method applied was described in the above-mentioned reference. Results: for Sn/Sn + Tl CPD = 0.17 v; for Tl/Tl + Sn CPD = 0.25 v; for Tl/Tl + Te CPD = 0.65 v; for Bi/Bi + Te CPD = 0.3 and 0.35 v, respectively. Fig. 3 shows the zero charge potentials for Sn-Te alloys as a function of their composition. This implies that the CPD between the metals and their alloys under consideration is close to the difference of the zero charge potentials, which has proved to be valid also for Bi/Bi + Te (difference of zero charge potential with 3.6 % Te equal to 0.25 v, with 9 % Te equal to 0.33 v). The fact that the volt-ampere characteristics of Tl-Sn, Tl-Te, and Bi-Te alloys are shifted in positive direction indicates that the work

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B101/B231

function in these alloys is greater than in pure metal. In conformity with the zero charge potential difference (Fig. 3), Sn-Tl alloy shows the opposite effect. The authors thank Academician A. N. Frumkin for a discussion. There are 4 figures and 5 references: 4 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Ural'skiy gosudarstvennyy universitet im. A. M. Gor'kogo
(Ural State University im. A. M. Gor'kiy)

PRESENTED: December 10, 1960, by A. N. Frumkin, Academician

SUBMITTED: November 25, 1960

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Card 3/6

3

KUZNETSOV, V.A.; SINYANSKAYA, R.I.; PORTNAYA, G.N.; VOLYNSKAYA, M.P.

Electrocapillary phenomena in Te-Ag alloys and surface tension of these alloys in a vacuum. *Izv.vys.ucheb.zav.;khim.i khim.tekh.* 5 no.3:428-432 '62. (MIRA 15:7)

1. Ural'skiy gosudarstvennyy universitet imeni A.M. Gor'kogo, kafedra fizicheskoy khimii.

(Tellurium-silver alloys)

(Surface tension)

(Electrocapillary phenomena)

KUZNETSOV, V.A.; POPOVA, I.B.; DUPLINA, L.N.

Electrocapillary phenomena on Tl - Bi alloys and their surface
tension in a vacuum. Zhur. fiz. khim. 36 no.4:880-884 Ap
'62. (MIRA 15:6)

1. Ural'skiy universitet.
(Electrocapillary phenomena) (Thallium-bismuth alloys)
(Vacuum)

S/076/63/037/001/019/029
B101/B186

AUTHORS: Volynskaya (Klevtsova), M. P., Kuznetsov, V. A., Balanova, S.Ya.

TITLE: Electrocapillary effects on Tl-Sb alloys

PERIODICAL: Zhurnal fizicheskoy khimii, v. 37, no. 1, 1963, 186 - 189

TEXT: Tl and Sb, chosen because their zero-charge potentials differ considerably, were used to investigate the dependence of the zero-charge potential on the composition of binary alloys. The zero-charge potentials of Tl and Tl-Sb alloys were determined from the maximum potential of electrocapillary curves at 475°C. A mixture of molten LiCl-KCl served as electrolyte and molten lead as reference electrode. Since a solid phase precipitated at 475°C it was not possible to investigate alloys containing more than 63 at% of Sb. The emf of the galvanic elements, type

$Tl^- | LiCl-KCl + 3\% \text{ by weight } TlCl | Tl-Sb^+ \text{ alloy}$, was measured in order to determine the activities of Tl and Sb. The curves representing the activities differed only slightly from Raoult's law. The electrocapillary curves show that the surface tension acting on the interface alloy-electrolyte decreases with increasing content of Sb, and that the zero-charge potential

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Electrocapillary effects on Tl-Sb alloys

S/076/63/037/001/019/029
B101/B186

shifts toward the positive direction. The adsorption of Tl and Sb at the surface, the surface concentration of the two components and the portion θ of the surface occupied by the two components are calculated. The following values are given for the Sb content given in atomic parts (θ_{Tl}, θ_{Sb}): 0.05, 0.82, 0.15; 0.20, 0.65, 0.33; 0.40, 0.52, 0.47; 0.63, 0.30, 0.67. The zero-charge potential was calculated from the equation $\Delta\varphi^0 = \varphi_{all}^0 + \varphi_{Tl}^0 - (\varphi_{Sb}^0 - \varphi_{Tl}^0) \cdot \theta_{Sb}$. For the Sb content in atomic parts, φ_{calcul}^0 and φ_{exper}^0 are given: 0.05, -0.45, -0.53; 0.20, -0.39, -0.46; 0.40, -0.31, -0.42; 0.63, -0.20, -0.30. The discrepancy between the values of φ^0 as calculated and those obtained experimentally is attributed to the fact that the applied equation takes no account of a certain type of interaction of the alloy components. There are 4 figures and 2 tables.

ASSOCIATION: Ural'skiy gosudarstvennyy universitet im. A. M. Gor'kogo
(Ural State University imeni A. M. Gor'kiy)

SUBMITTED: October 28, 1961

Card 2/2

KUZNETSOV, V.A.; ZAGAYNOVA, L.S.; D'YAKOV, A.A.; KOTEGOVA, A.A.

Electrocapillary phenomena on zinc-tin alloys and the surface tension
of these alloys in vacuo. *Elektrokhimiya* 1 no.6:676-681 Je '65.
(MIRA 18:7)

1. Ural'skiy gosudarstvennyy universitet imeni Gor'kogo.

KUZNETSOV, V.A.; PANTELEYEV, V.V.

Hydrothermal synthesis of rutile. Kristallografiia 10 no.3:
445 My-Je '65. (MIRA 18:7)

1. Institut kristallografi AN SSSR.

S/070/62/007/002/022/022
E132/E160

24,7/100

AUTHORS: Shternberg, A.A., Kuz'mina, I.P., and Kuznetsov, V.A.

TITLE: Apparatus for growing single crystals from the melt under pressure

PERIODICAL: Kristallografiya, v.7, no.2, 1962, 334-336

TEXT: It is difficult to grow crystals of ZnS from the melt because of the high vapour-pressure of the components. A closed furnace, with Mo wire heaters, ZrO_2 and sand insulation, capable of working at above 1800° under a pressure of 200 atm N_2 , is described. Crystals of ZnS up to 3 cm long were grown. There are 3 figures.

ASSOCIATION: Institut kristallografii AN SSSR
(Institute of Crystallography, AS USSR)

SUBMITTED: June 26, 1961

Card 1/1

SHTERNBERG, A.A.; KUZNETSOV, V.A.

Crystallization of corundum from the gaseous phase using seed
crystals. Kristallografiia 9 no.1:121-123 Ja-F '64.

1. Institut kristallografi AN SSSR.

(MIRA 17:3)

ACCESSION NO. AP4012287

S/0070/64/009/001/0123/0124

AUTHOR: Kuznetsov, V. A.

TITLE: Rate of surface growth on corundum under hydrothermal conditions

SOURCE: Kristallografiya, v. 9, no. 1, 1964, 123-124

TOPIC TAGS: corundum, crystal surface, surface growth rate, hydrothermal condition, seed rod, autoclave, thermocouple, surface crack, inclusion, seed orientation

ABSTRACT: The rates of growth of various crystalline surfaces on leucosapphire have been studied. Experiments were conducted in steel 130-150 cm³ autoclaves lined with silver and heated in a resistance furnace with a bottom heating element. Temperatures were measured on the interior wall with two thermocouples, one placed at the level of melting and the other at the level of crystal growth. The temperature drop between the two zones was 50-60C, and the temperature at the melting zone was 590-600C. The level in the autoclave was held constant and the pressure did not exceed 1500 atm. Crushed boules of leucosapphire and faintly colored ruby were used as source material. A 15% aqueous solution of soda with 5% of NaCl served as solvent, and ruby rods 3-4 mm long and 100 mm long were used as seed crystals. In

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ACCESSION NO: AP4012287

the course of growth surfaces (0001), ($1\bar{1}\bar{2}0$), ($10\bar{1}\bar{1}$), and ($22\bar{4}3$) developed. The growth rate of the first three types was determined by measuring their thicknesses. The last type suffered distortion too rapidly to allow accurate measurements. While the absolute velocities of growth changed with various factors, their relation to one another remained constant at 100:20:1. Differently oriented rods favored the development of different surfaces, varying in the density of cracks and inclusions. This proves that proper orientation is extremely important in hydrothermal production of corundum crystals. "The author thanks A. A. Shternberg for help in this work." Orig. art. has: 1 photograph.

ASSOCIATION: Institut kristallografii AN SSSR (Institute of Crystallography AN SSSR)

SUBMITTED: 12Mar63

DATE ACQ: 19Feb64

ENCL: 00

SUB CODE: PH, CH

NO REF SOV: 001

OTHER: 001

Card 2/2

ACCESSION NR: AT4040560

S/2564/64/004/000/0144/0147

AUTHOR: Kuznetsov, V. A.

TITLE: Zinc sulfide crystals grown from a melt

SOURCE: AN SSSR. Institut kristallografi. Rost kristallov, vA, 1964, 144-147

TOPIC TAGS: zinc sulfide, crystalline zinc sulfide, zinc sulfide crystal, crystal growth, zinc sulfide monocrystal, crystal structure, crystal impurity, homogeneous monocrystal

ABSTRACT: Using the apparatus previously described by the author (Kristallografiya, 7, vy*p. 2, 1962), which permits upward-directed crystallization at a controlled rate under high pressure, monocrystals of ZnS were grown for a ZnS melt at up to 1800C and a pressure of 100-200 atm. of argon or nitrogen (unspecified in individual experiments). The cooling rate was 0.5-1.0 degrees/min. and the crystallization rate was 0.5-1.0 mm/min. The distribution of Cu-, Fe-, Ca-, Si-, Mg-, and Al-impurities, contained in the original ZnS, in the obtained monocrystals was examined by spectral analysis. The impurities were generally found to retreat into the upper section of the crystals before the advancing front of crystallization. The monocrystals obtained were generally nonhomogeneous

Card 1/2

ACCESSION NR. AT4040560

and showed a characteristic band pattern in polarized light produced by alternating cubic and hexagonal crystalline layers. Attempts to obtain pure cubic and hexagonal crystals by heating mixed crystals at 850-1100C for 5 - 150 hrs. produced (at 1100C for 5 or 10 hrs.) a homogeneous hexagonal phase. Orig. art. has: 2 tables.

ASSOCIATION: Institut kristallografi AN SSSR (Institute of Crystallography, AN SSSR)

SUBMITTED: 00

DATE ACQ: 02Jul64

ENCL: 00

SUB CODE: SS

NO REF SOV: 002

OTHER: 010

Card 2/2

ACC NR: AM6018034

Monograph

UR/

Kuznetsov, Vladimir Aleksandrovich

Layout and design of marine nuclear reactors (Komponovka i raschet reaktorov sudovykh yadernykh ustanovok) Moscow, Izd-vo "Transport," 1966. 218 p. illus., biblio., tables. 2000 copies printed. Textbook for higher marine engineering institutes and for the Odessa Institute of Marine Engineers

TOPIC TAGS: marine nuclear propulsion, marine engineering, marine propulsion, nuclear propulsion, nuclear power plant

PURPOSE AND COVERAGE: This is a textbook intended for the course "Marine Nuclear Reactors," offered by higher marine engineering institutes and by the Odessa Institute of Marine Engineers. It can be also used by ship's mechanics engaged in the operation of marine nuclear reactors. It gives a systematic presentation of the basic types of marine nuclear reactors, their design, parameters, materials used, and auxiliary systems.

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Ch. I. Selection of basic parameters for marine nuclear reactors -- 3

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UDC: 656.612:621.039.53(075.8)

ACC NR: AM6018034

Ch. II. Principles of the arrangement of reactors and the basics of
thermophysical calculations -- 43
Ch. III. Neutron-physical calculations -- 85
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SUB CODE: 18, 21, 13/ SUBM DATE: 24Jan66/ ORIG REF: 022/
OTH REF: 004

Card 2/2

KUZNETSOV, V.A.; MATYUSHENKO, L.A.; KAGANOVICH, R.I.

Adsorption of fluoro- and chloro-substituted acetic acids at
the solution/air and solution/mercury interfaces. *Elektrokhimiya*
1 no.3:369-373 Mr '65. (MIRA 18:12)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

KUZNETSOV, V.A.; DAMASKIN, B.B.

Adsorption of some derivatives of pentafluoro- and pentachlorobenzene
at the solution - air and solution - mercury interfaces. Elektro-
khimija 1 no.9:1153-1156 S '65. (MIRA 18:10)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.

MIKHETSVA, V.I.; KUZNETSOV, V.A.

**Interaction of sodium oxide hydrate with its metaborate.
Zhur.neorg.khim. 10 no.12:2585-2590 D '65.**

(MIRA 19:1)

LUKASHEV, K.I. [Lukashou, K.I.]; KUZNETSOV, V.A. [Kuznetsov, V.A.]

Some problems in the use of isotopes in solving geological and
geochemical problems. Vestsi AN BSSR. Ser.fiz.-tekh.nau. no:3:94-106
'60. (MIRA 13:9)

(Radioisotopes)

(Geological research)

KUZNETSOV, V. A.

LUKASHOU, K.I.; KUZNYATSOV, U.A.

Action of elementary particles in geochemical processes. Vestsi
AN BSSR.Ser.fiz.-tekh.nav. no.1:74-83 '62. (MIRA 16:9)
(Particles (Nuclear physics)) (Geochemistry)

ACCESSION NR: APL014232

S/0201/63/000/004/0085/0091

AUTHORS: Lukashev, K. I.; Kuznetsov, V. A.

TITLE: Interaction between geochemical and cosmic processes and certain geochemical problems

SOURCE: AN BSSR. Izvestiya. Ser. fiz.-tekhn. nauk, no. 4, 1963, 85-91

TOPIC TAGS: geochemical process, geological process, cosmic process, solar energy, cosmic dust, astronomic phenomena, chemical element, isotope formation, orogeny, volcanism, earth structure, meteor composition

ABSTRACT: This article presents complex interrelations between geochemical and cosmic processes in the light of new data obtained from the cosmic flights. This interrelation is based on the exchange of matter between earth and cosmos and on the effect of cosmic rays with the earth's matter. The scope of this effect is greatly affected by solar activity which also causes the cyclicity in the geochemical processes on the earth. By now the identical nature of chemical and isotope composition of matter on the earth and in the cosmos has been proven. It is also known that the distribution of chemical elements in the cosmos is determined

Card 1/2

ACCESSION NR: AP4014232

by: 1) their nuclear structure; 2) their resistance to radioactive decomposition, spontaneous fission, and nuclear reactions; 3) cosmic phenomena such as nature of the processes involved, evolution, the state of cosmic bodies, their interaction with one another, etc. Cosmic matter occurs in a state of permanent migration, the scale of which varies from the atomic displacements in crystalline lattices to the reaction between cosmic rays and earth matter. The most vital problem at this time pertains to the genesis of chemical elements. It is being studied by using new discoveries in the field of the physics of elementary particles and by theories bearing on the subject of geochemistry.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 03Feb64

ENCL: 00

SUB CODE: CH, AS

NO REF SOV: 004

OTHER: 005

Card 2/2

LUKASHIN, K.J.; KUZNETSOV, V.A.; LUKASHIN, V.K.

Geochemical types of weathering surfaces in White Russian
Polesye. Dokl. AN BSSR 8 no.7:455-458 '64. (MIRA 17:10)

1. Laboratoriya geokhimicheskikh problem AN BSSR.

LIFASHEV, K.I.; KUZNETSOV, V.A.

Relationship between geochemical and cosmic processes and some
geochemical problems. Vestsi AN BSSR. Ser. fiz.-tekh. nav. no.4:
85-91 '63. (MIRA 17:12)

1st and 2nd orders PROCESSES AND PROPERTIES INDEX 3rd and 4th orders

CH

8

The Kuznetsk-Altau geostucture and the Laramid ore formation. *Y. A. Kuznetsov. Vestnik Zapadno-Sibirskogo tsv. Upravleniya 1930, No. 1, 18-20; Khim. Ref. Ser. 1930, No. 11, 24.*—K. found a similarity of a no. of the Kuznetsk Alatau and the southeastern Altai Hg deposits and considers a possible genetic connection of these groups which may be related to definite geol. structures of a regional character. The Petzav and the Salzaks deposits are related to the western part of the Kuznetsk Alatau region formations. The continuation of this structure into the southeastern Altai region (Karal) explains the presence of signs of Hg ore formation. These suppositions are confirmed by the geol. characteristics of the single deposits.

W. R. Iffert

ASSOCIATED METALLURGICAL LITERATURE CLASSIFICATION

1930-1939

LONDON

1930-1939

DELETION

1930-1939

CA
 Mercury deposits of the Altai mountains. V. A. Kuznetsov, *Mestorodnitsya Kordkhi Mol. Metallurgiya* R. 1, 250-277 (1939); *Khimiya Referat. Zhur.* 1940, No. 9, 16-17. -- In the Chagan-Uzul formation mineralization is observed for a length of 12 km. The ore is represented by breccia from fragments of including minerals cemented together with carbonates (calcite, dolomite and siderite). Cinnabar is associated with carbonates in the form of veins and impregnations of finest grains in the breccia fragments. In the Aktash deposits, cinnabar is found in marbleized limestones and in the calcite veins between them. The content of the metal sometimes reaches several percent. In some places cinnabar is accompanied by native Hg. Both deposits are typically tethyanic and are connected with the zones of the early and, probably, Alpine age. W. R. Hunt

ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

8

ca

— The Petan deposits of cinnabar on the western slopes of the Kuznetak Alatau. V. A. Kurugatov. *Vestnik Zapadno-Sibirskogo Geol. i'razvedeniya* 1930, No. 3, 18-20; *Khim. Referat. Zhur.* 1940, No. 5, 20; cf. C. A. 34, 7221.

— The deposits are composed of Pre-Cambrian limestones, which are in contact with the complex effusive-sedimentary Cambrian formation. The minerals are described. Ores are found in the Pre-Cambrian limestones among the broken up and mineralised formations. The breccia includes pieces and blocks of mineralized limestones, porphyrites, shales, sandstones and vein quartz. The cement includes small aggregates of the same minerals as well as carbonates, quartz and limonite. Dolomite, quartz and pyrite appeared before cinnabar. Calcite appeared either

simultaneously with, or after cinnabar. The ore minerals include cinnabar and pyrite. No stibnite was found in the region. Analyses showed the presence of Ag and Au. Cinnabar is found in the form of grains, seldom in the form of crystals. Sometimes the grains can be observed only under the microscope. The deposits are typically epithermal, telemagmatic. They were formed at shallow depths by the activity of thermal springs. W. R. H.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

GROUPS

SYMBOLS

CLASSIFICATION

KUSNETZOV, V. A.

PA IT115

USSR/Geology
Mineral Deposits - Mercury

1947

"On the Mercury Deposits of Western Siberia" by
V A Kusnetzov, A A Saukov, 1 p

"Izv Akad Nauk USSR Ser Geol" No 2

Locations of deposits at Salair, Ala-tau, Minusinsk,
Kuznets Basin, Altaye-Sayanak. A summary of a mono-
graph.

IT115

KUZNETSOV, V. A.

PA 41733

USSR/Geology
Tectonics

Jan/Feb 1948

"Tectonics of the Western Tuva on the Junction with the Altay Mountains," V. A. Kuznetsov, 16 pp

"Izv Akad Nauk SSSR, Ser Geol" No 1

Discusses the tectonics of the orographic and tectonic nodules at the junction with the western Aayan, the Altay Mountains, and the Tammu-Ola Range. Directs particular attention to the structure of the tectonic blocks. Confirms the immature nature of the differential movement of the blocks, which are the reason for the contemporary relief of this region.

41733

KUZNETSOV, V. A.

Apr 1948

USSR/Geology
Rock Formation

"Hyperbasic Belts of the Sayan-Altai Mountain System," V. A. Kuznetsov, Western Siberian Br, Acad Sci USSR, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol IX, No 2

Presents data to prove incorrect the general supposition that the western Siberian regions are poor in hyperbasic rock formations. Submitted by Academician V. A. Obruchev, 2 Feb 1948.

6257

KUZNETSOV V. A.

FA 27/49T62

USSR/Geology
Tectonics
Orology

Feb 49

"A Diagram of the Structural Geology (Tectonics) of Tuva and Its Position in the Altay-Sayan'skiy Mountain System," V. A. Kuznetsov, Western-Siberian Mountain Acad Sci USSR, 3 pp

"Dok Ak Nauk SSSR" Vol LXIV, No 4

Separates internal divisions of Tuva into two distinct regions: (1) the internal region of Tuva, a platform structure of the movable slab type, or the middle body, and (2) the peripheral region of the

27/49T62

USSR/Geology (Contd)

Feb 49

linear, plicated structures, or the plicated zone.
Submitted 22 Nov 48.

27/49T62

V. A.

177T41

USSR/Geophysics - Geology (of Tuva)

Nov/Dec 50

"The Zone Joining West Sayan and Tuva," V. A. Kuznetsov

"Iz Ak Nauk SSSR, Ser Geol" No 6, pp 92-95

Geol structure of the Tuva and Sayan Oblasts interests many investigators trying to solve certain problems on geol developments of these adjacent territories. Includes critique of opinions of G. A. Kudryavtsev on geol of Sayan and Tuva.

177T41

KUZNETSOV, V.A.

Southern regions of the Altai-Sayan Mountain Range (mountains of
Altai, Southern Sayan, Western Tuva). Trudy Lab.geol.dokem. no.1:
45-57 '52. (MIRA 7:2)

(Altai Mountains--Geology) (Geology--Altai Mountains)

(Sayan Mountains--Geology) (Geology--Sayan Mountains)

KUZNETSOV, V. A.

Stratigraphic Position of the Hyper asites of Tuva and West Sayan Izv. Tomskogo
politekhn. in-ta, 74, No 1, 1953, 108-114

Associates of the West Siberian affiliate of the Academy of Sciences USSR have established that all the hyperbasitic massifs in the limits of the single thick Altay-Sayan zone are contemporaneous (same geologic age). The overwhelming majority of the hyperbasitic zones of the Altay-Sayan mountain system is Cambrian. (RZhGeol, No 1, 1954)

SO: W-31128, 11 Jan 55

Kuznetsov, V.A.

137-1957-12-22825

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 12, p 3 (USSR)

AUTHOR: Kuznetsov, V. A.

TITLE: The Coordinating Commission on the Problem of Rare Metals in the West-Siberian Branch [of the AN SSSR] (Kordinatsionnaya komissiya po probleme redkikh metalov v Zapadno-Sibirskom filiale)

PERIODICAL: Izv. vost. fil. AN SSSR, 1953, Nr 3, p 135

ABSTRACT: The Commission was concerned primarily with the revision of the subject planning of the various institutes. The Commission coordinates the plans of the separate laboratories and institutes. Reports on the completed phases of the work as presented by their authors, were evaluated.

1. Metallurgy-USSR 2. Reports-Coordination

P. N.

Card 1/1

KUZNETSOV, V.A.

Letter to the editor. Izv. AN SSSR. Ser.geol. 19 no.2:146-147
Mr-Apr '54. (MLRA 7:7)
(Altai Mountains--Rocks, Igneous) (Rocks, Igneous--Altai
Mountains)

KUZNETSOV, V.A.

PINUS, G.V., KUZNETSOV, V.A., VOLOKHOV, I.M.; LEONT'YEV, L.I., doktor geologo-mineralogicheskikh nauk; otvetstvennyy redaktor; LADYCHUK, L.P., redaktor izdatel'stva; ASTAF'YEVA, G.A., tekhnicheskiy redaktor.

[Hyperbasic rock of Tuva] Giperbazity Tuvy. Moskva, Izd-vo Akad. nauk SSSR, 1955. 133 p. (Trudy Tuviaskoi kompleksnoi ekspeditsii, no.2) (MIRA 10:5)

(Tuva Autonomous Province—Petrology)

KUZNETSOV, V. A.

Basic stages in the development of magmatism and elements of metallogeny in Gornyy Altai. Izv.vost.fil. AN SSSR no.2:16-28 '57.

(MLRA 10:9)

1. Zapadno-Sibirskiy filial Akademii nauk SSSR.
(Altai Mountains--Rocks, igneous) (Ores)

KUZNETSOV, V.A.; PINUS, G.V.

Some controversial problems in the geology of Tuva ("Brief geological description of Tuva" by L.N. Leont'ev. Reviewed by V.A. Kuznetsov and G.V. Pinus). *Izv. vost. fil. AN SSSR* no. 2: 125-128 '57. (MLRA 10:9)

1. Zapadno-Sibirskiy filial Akademii nauk SSSR.
(Tuva Autonomous Province--Geology) (Leont'ev, L.N.)

KUZNETSOV, V.A.

Coordinating Commission for the Problem of Rare Metals at the
Western Siberian Branch. Izv.vost.fil. AN SSSR no.3:135 '57.

(Siberia, Western--Mines and mineral resources--Research) (MLRA 10:9)

KUZNETSOV, V A

3(5)

PHASE I BOOK EXPLOITATION SOV/1485

Pinus, Georgiy Vladimirovich, Valeriy Alekseyevich Kuznetsov and Ivan Mikhaylovich Volokhov

Giperbazity Altaye-Sayanskoy skladchatoy oblasti (Ultrabasic Rocks of the Altay-Sayanskaya Folded Region) Moscow, Izd-vo AN SSSR, 1958. 293 p. 1,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Sibirskoye otdeleniye. Institut geologii i geofiziki.

Resp. Ed.: A.P. Lebedev; Ed. of Publishing House: G.G. Mergasov; Tech. Ed.: P.S. Kashina.

PURPOSE: The textbook is intended for exploration geologists engaged in the search for minerals genetically related to ultrabasic rocks.

COVERAGE: This is the first summary treatment of the ultrabasic rocks of the Altay-Sayan folded region. The book describes the various ultrabasic zones, the distribution of both zones and massifs, the petrographic characteristics of rocks and related formations, as well as the petrochemical characteristics of the complex. In addition to

Card 1/5

Ultrabasic rocks (Cont.)

SOV/1485

citing the current opinions of other authorities, the writers offer their own concepts on magmatics and the origin of the ultrabasic rocks of the region. There are 59 diagrams, 14 tables, and 213 references of which 184 are Soviet, 25 English, 2 German, 1 Dutch, and 1 French.

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V. Petrochemical Characteristics of the Ultrabasic Formation of the Altay-Sayanskaya Folded Region	191
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Ultrabasic rocks (Cont.)

SOV/1485

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MM/sfm
4-30-59

Card 5/5

PINUS, G.V.; KUZNETSOV, V.A.

Geological structure and metallogeny of the Altai-Sayan ultrabasic formation. Zakenem. razm. pelez. iskep. 1:275-288 '58. (MIRA 12:3)

1. Institut geologii i geofiziki Sibirskego otdeleniya AN SSSR.
(Altai Mountains--Petrology)
(Sayan Mountains--Petrology)

KUZNETSOV, V.A.

Formation and special distribution of mercury deposits in Altai
and Sayan folds. Zakenen. razm. pelez. iskop. 1:302-314 '58.
(MIRA 12:3)

1. Institut geologii i geofiziki Sibirskego otdeleniya AN SSSR.
(Altai Mountains--Mercury ores)
(Sayan Mountains--Mercury ores)

AUTHOR: Kuznetsov, V.A. 11-58-4-7/16

TITLE: On the Age of the Hyper-Basic Intrusions of the Altay Mountains
(O vozraste giperbazitovykh intruziy Gornogo Altaya)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geologicheskaya, 1958,
№4, pp 76-87 (USSR)

ABSTRACT: The author describes the results of a survey made to verify the reports of the finding of hyper-basic rocks of relatively young Hercynian age, in the Altay region (Ref. 6,7 and 9). The detailed study of all important hyper-basic rocks in the region showed that these intrusions were typical results of the magmatism of earlier development stages of sliding zones, or (in this case) of folding structure of the Caledonian Period and belonged to the Cambrian era. Their attribution to the Hercynian period was the result of superficial and erroneous observation. Detailed descriptions of these intrusions are given. There are 5 figures and 23 Soviet references.

ASSOCIATION: Zapadno-Sibirskiy filial AN SSSR, Novosibirsk (Wes Siberian Branch of the AS USSR, Novosibirsk)

SUBMITTED: December 14, 1956
Card 1/1 1. Geological time-Determination 2. Geology--USSR

KUZNETSOV, V.A.

"Vestnik" of the West Siberian and Novosibirsk geological administrations for 1957-1959. Geol. i geofiz. no.1:123-124 '60.

(MIRA 13:9)

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Group 2 included reports on--
 endogenous deposits in other synclinal regions, such as mercury formations in
 Siberia and the Far East (V. A. Kuznetsov), pyrite deposits in the Ural (S. N.
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 and others. Group 3 included reports on the classification of metallogenous zones
 and provinces of the Earth crust (D. I. Gorzhhevskiy); classification of metallo-
 genous zone types of the Earth crust (V. N. Kozerenko); classification of mag-
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AP5024551 UR/0070, 05, 010 005/0663/0667
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AUTHOR: Kuznetsov, V. A. 44.65

TITLE: Kinetics of hydrothermal crystallization of corundum 21,44/55 15

SOURCE: Kristallografiya, v. 10, no. 5, 1965, 663-667

TOPIC TAGS: corundum, crystal growth, crystal orientation, activation energy, crystallization, aluminum oxide 16

ABSTRACT: The effect of temperature, filling of the autoclave, orientation of the seed, and temperature difference between the zones of growth and dissolution on the growth rate of corundum faces was studied under hydrothermal conditions. In a separate series of experiments, the dissolution of Al₂O₃ was investigated in order to determine the influence of supersaturation on this growth rate. From the results, the activation energies of growth of the (1120) and (1011) faces were calculated, and preliminary conclusions were drawn concerning the rate-determining step of hydrothermal crystallization of Al₂O₃. The high activation energies and pronounced dependence of the growth rate on the orientation of the seed lead to the conclusion that the rate-determining step is that of growth, not the dissolution of the charge or diffusion of the substance in the solution. The growth step in turn includes a series of processes occurring directly on the surface of the crystal (adsorption, diffusion over the surface, etc.) which are important in the crystallization of corundum, but data on this subject are in-

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sufficient for establishing their rate-determining function. "The author thanks A. A. Shternberg for a detailed discussion of the results." Orig. art. has: 3 figures.

44.55
ASSOCIATION: Institut kristallografi AN SSSR (Institute of Crystallography, AN SSSR)

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Card 2/2 DP

Name : KUZNETSOV, V. A.

Title : Engineer.

Remarks : V. A. ZAKHARIN is the author of a booklet entitled "Helicopter" published by the State Printing Office of the Defense Industry, Moskva, and is reviewed by Candidate of Technical Sciences Engineer-Colonel V. Ye. KASTORSKIY and Engineer V. A. KUZNETSOV. The booklet is intended for readers with no specialized technical education.

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