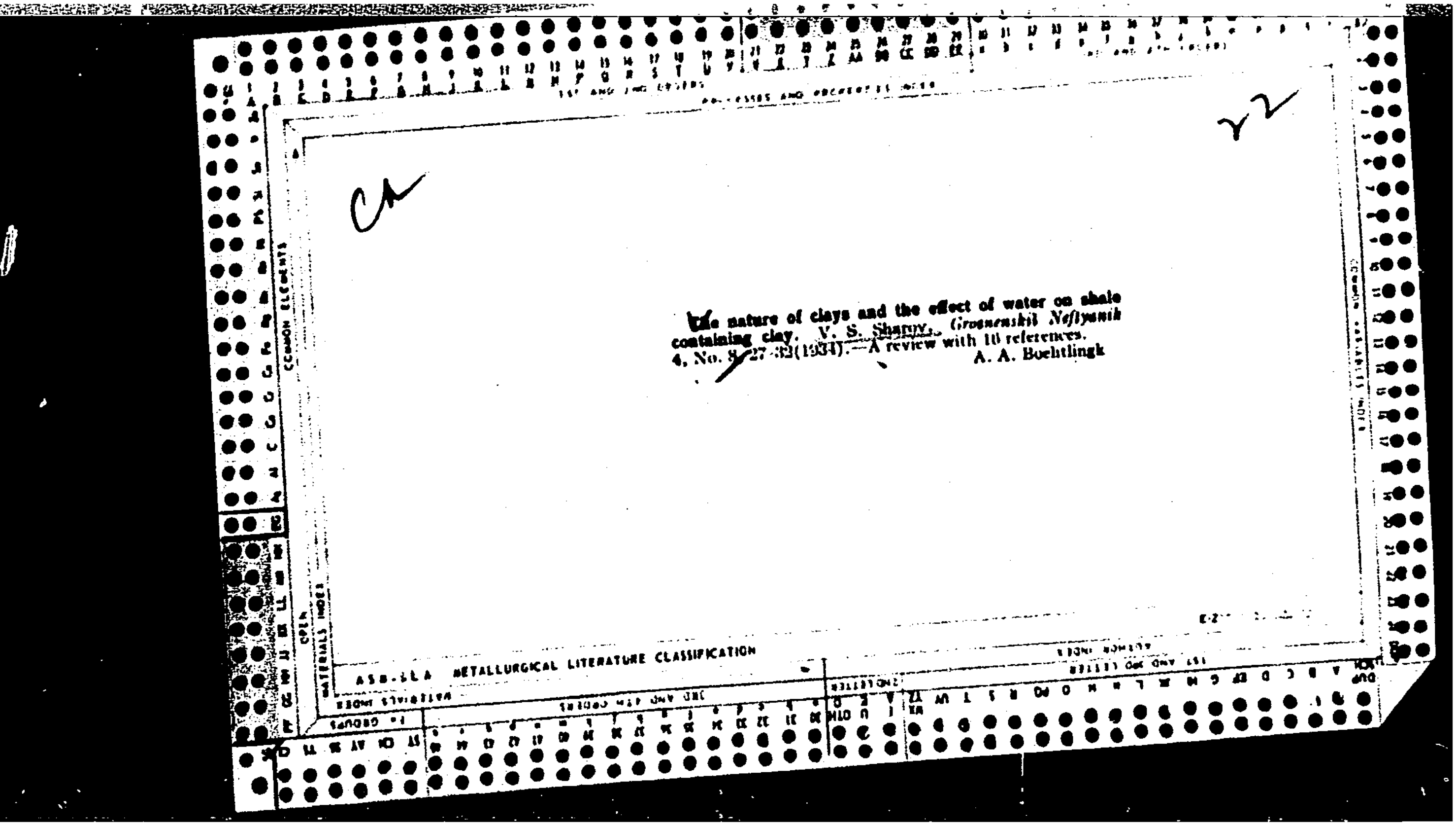

Ca

Y2

The nature of clays and the effect of water on shale containing clay. V. S. Sharov. *Groznenskii Neftyanik* 4, No. 8, 27-33(1934).—A review with 10 references.
A. A. Boehtlingk

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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3RD AND 4TH ORDERS

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CA

COMMON ELEMENTS

Softening of clays and clay-bearing shales. V. S. Sharov. *Neftyanoe Khozyaistvo* 26, No. 10, 23-7(1934).—A review, with 20 references, covering the changes of clays occurring in the earth. A. A. Boehtlingk

COMMON VARIABLES INDEX

MATERIALS INDEX

OPEN

ASA-SLA METALLURGICAL LITERATURE CLASSIFICATION

AUTHORS INDEX

1ST AND 2ND LETTER

PROCESSES AND PROPERTIES INDEX

19

Cer

Determining the ability of clays to absorb water. F. P. Laptev and V. A. Sharov. *Neftyanoe Khozyaistvo* 26, No. 11, 19-22(1934).—The test adopted by the Standards Committee of the American Ceramic Society is modified in that the samples, prepd. from a clay of normal consistency, are placed in desiccators over solns. of H_2SO_4 of various concns., namely: 0, 2.5, 5, 7.5, 10, 12.5, 15, 17.5, 20, 22.5, 25, 30, 35 and 40%. A definite water-vapor tension is established in the desiccators, depending upon the concn. of H_2SO_4. The samples are kept in the desiccators till const. wt. is reached (1.5-2 mo., 3 samples in each desiccator). One sample is then dried in the air and in a drying chest at 110°, and weighed for the H_2O detn. The remaining two samples are investigated in the usual manner for their ability to absorb water. A number of illustrations are given.

A. A. Boehtlingk

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

Ca

19

Moisture a factor of the stability of clays in aqueous media. V. S. Shaxov. *Groznenskii Neftyanik* 6, No. 1-2, 58-64(1936).—The disintegration of clay in water is retarded with increase in water content of the clay. At a certain "critical" moisture content (characteristic for each clay) the behavior changes, one type of clay remaining unchanged for months when left in water, while others absorb water very slowly. Na clays swell gradually above their "critical" point, while Ca clays are more stable. The behavior of various Russian clays is analysed.

A. A. Boehtlingk

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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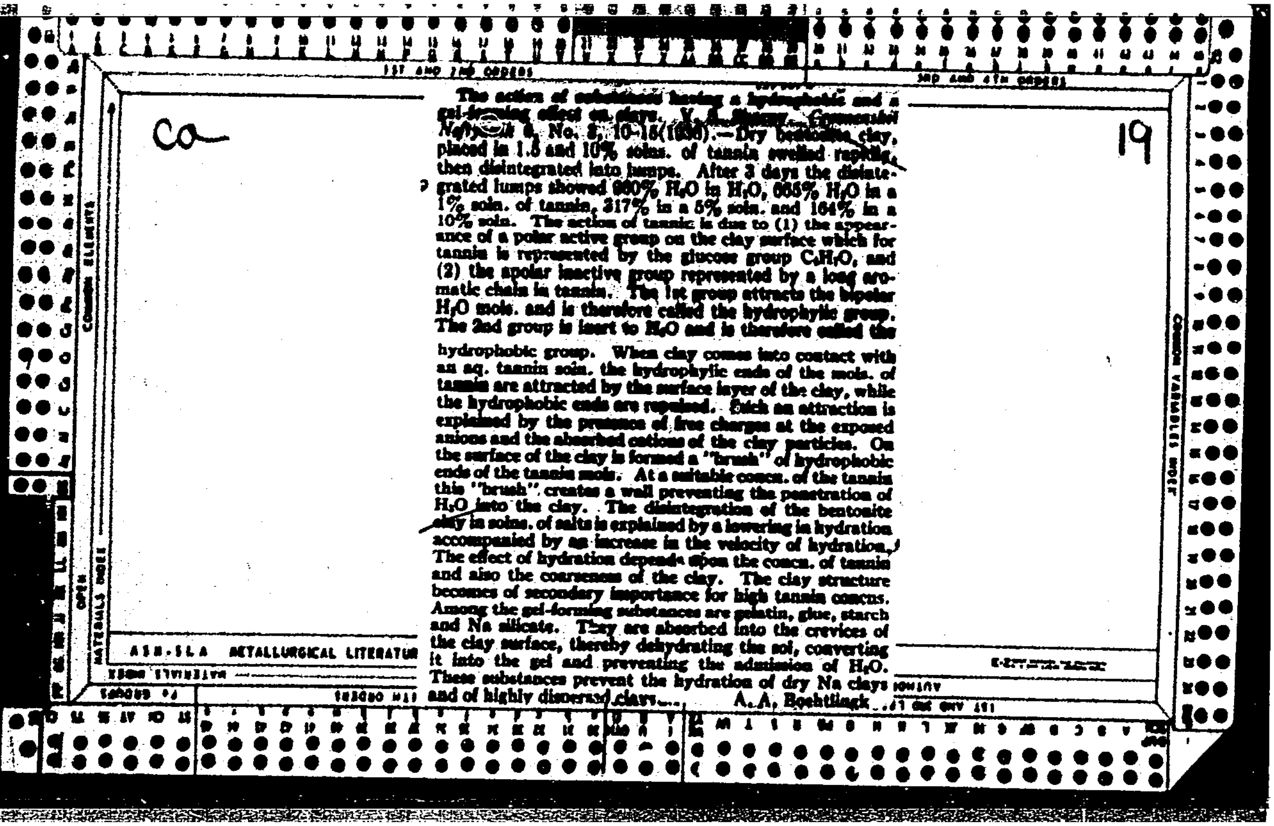
AUTHOR INDEX

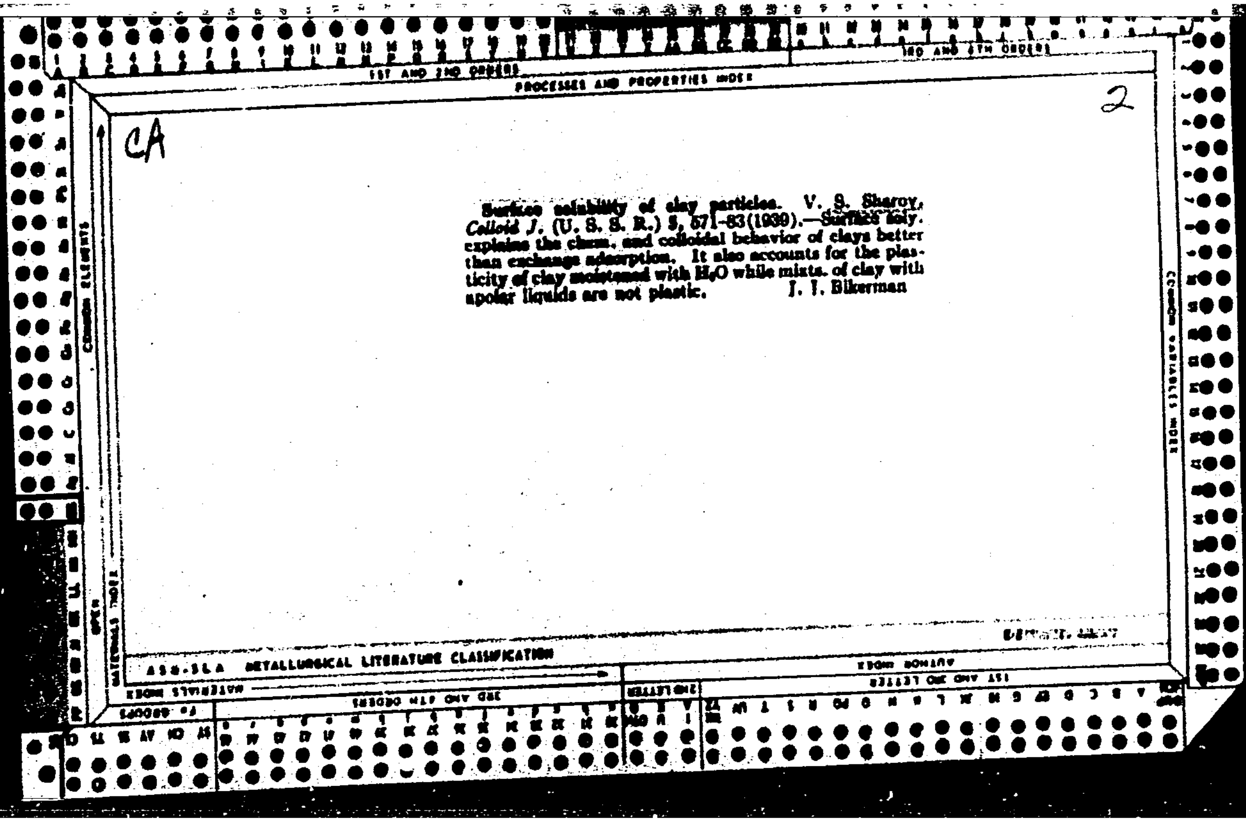


Ca

19

The action of substances having a hydrophobic and a gel-forming effect on clays. V. A. Sharov. *Groznenskii Neftyanik* 6, No. 8, 10-15(1936).—Dry bentonite clay, placed in 1.5 and 10% solns. of tannin swelled rapidly, then disintegrated into lumps. After 3 days the disintegrated lumps showed 960% H_2O in H_2O, 665% H_2O in a 1% soln. of tannin, 317% in a 5% soln. and 164% in a 10% soln. The action of tannic is due to (1) the appearance of a polar active group on the clay surface which for tannin is represented by the glucose group C_6H_5O, and (2) the apolar inactive group represented by a long aromatic chain in tannin. The 1st group attracts the bipolar H_2O mols. and is therefore called the hydrophylic group. The 2nd group is inert to H_2O and is therefore called the hydrophobic group. When clay comes into contact with an aq. tannin soln. the hydrophylic ends of the mols. of tannin are attracted by the surface layer of the clay, while the hydrophobic ends are repulsed. Such an attraction is explained by the presence of free charges at the exposed anions and the absorbed cations of the clay particles. On the surface of the clay is formed a "brush" of hydrophobic ends of the tannin mols. At a suitable concn. of the tannin this "brush" creates a wall preventing the penetration of H_2O into the clay. The disintegration of the bentonite clay in solns. of salts is explained by a lowering in hydration accompanied by an increase in the velocity of hydration. The effect of hydration depends upon the concn. of tannin and also the coarseness of the clay. The clay structure becomes of secondary importance for high tannin concns. Among the gel-forming substances are gelatin, glue, starch and Na silicate. They are absorbed into the crevices of the clay surface, thereby dehydrating the sol, converting it into the gel and preventing the admission of H_2O. These substances prevent the hydration of dry Na clays and of highly dispersed clays.

A. A. Boehtlingk



CA

2

Surface solubility of clay particles. V. S. Sharov. *Colloid J.* (U. S. S. R.) 5, 571-83(1939).—Surface soly. explains the chem. and colloidal behavior of clays better than exchange adsorption. It also accounts for the plasticity of clay moistened with H_2O while mixts. of clay with apolar liquids are not plastic. J. I. Bikerman

1ST AND 2ND ORDERS

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CA

16

Contradictions in contemporary colloid chemistry of soils and their source. V. S. Sharov. *Pedology* (U. S. S. R.) 1939, No. 6, 121-38.—Sh. points out that most of the students of soil colloids, like Vageler, Kelley and Jenny, are in error because they consider the disperse system not only as a unit by itself, a physico-chem. interaction of two phases, but also of an extraneous "third component." The latter is made up of adsorption compds., ions, or other impurities with no essential regard to the relation of these to the two fundamental phases of a disperse system. The "third-component" idea makes the colloid a mech. mixt. of the fundamental phases and of the "adsorbed" ions or substances, or impurities sticking to the colloid. The adsorbed cations by themselves do not influence the disperse system. He cites as an example the idea that the Ca ion as such is endowed with aggregation ability in a disperse system. Experimentally it can be proved that by triturating a Ca-satd. soil it can be dispersed just as much as a Na soil. It is pointed out that many errors can be traced to the poor interpretation of the dissocn. of the colloids in relation to the dielec. const. of the medium. In water vapor the dielec. const. is slightly greater than 1, whereas in water it is 81. The effect of the cations on dispersion depends on the solvation, i. e., on the solvation membrane.

J. S. Joffe

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

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2

Hydration of clay in water vapor and in liquid water. ~~V. S. Sharov~~. *Colloid J.* (U. S. S. R.) 6, 3-14(1940).—Identity of the vapor pressures above a clay-water mixt. and an aq. soln. does not mean that mixing of these systems would not affect the conditions of the clay. Thermodynamic relations cannot account for hysteresis of drying of gels, for syneresis, etc. The contrary view of Kargin is rejected.

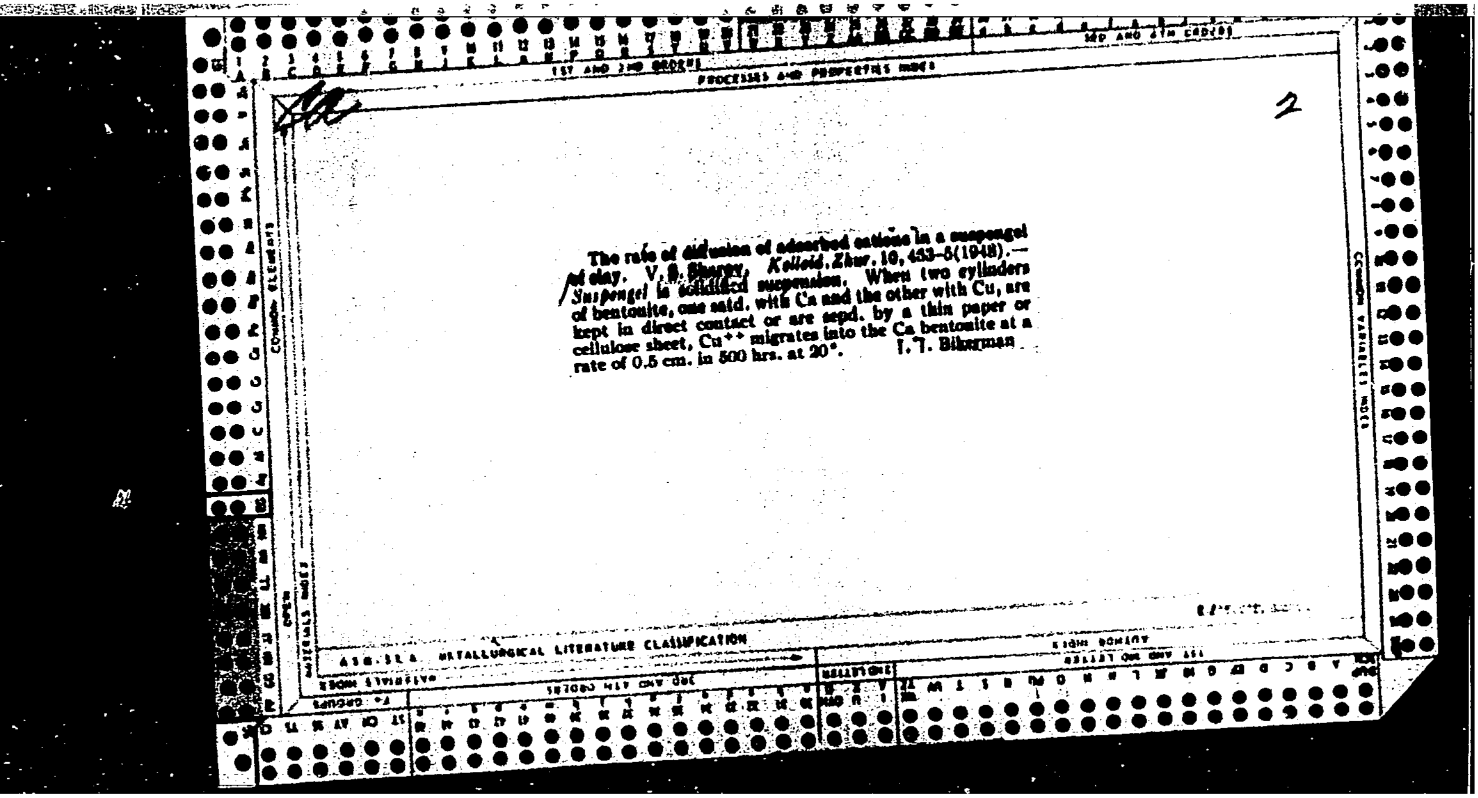
I. I. Bikerman

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

A. C. S.

Geology

Preparation and study of properties of a primary dispersion of Ca clay. V. S. SHAROV AND V. A. BUTOVSKAYA. *Kolloid. Zhur.*, 6 [7] 587-96 (1940); *Khim. Referat. Zhur.*, 4 [6] 95 (1941).—The authors used 1% suspensions of Na and Ca Kudinov clays. Two series of suspensions were made, one prepared by the usual method and the other from a clay paste. The dispersibility of the Na clay was the same, regardless of the method of making the suspension. In the case of the Ca clay, the dispersibility was greater when the suspension was prepared from the paste. From this, the authors conclude that the trituration does not change the primary dispersibility of the Na-clay particles, whereas in the Ca clay the secondary particles are completely decomposed into primary particles. The results further point to the fact that by triturating puddled soil saturated with bivalent cations it is possible to produce a suspension of the same degree of dispersion as that from a Na soil. Such a suspension retains the properties of a primary suspension, and upon standing there is no aggregation of primary particles into secondary particles. M.Ho.

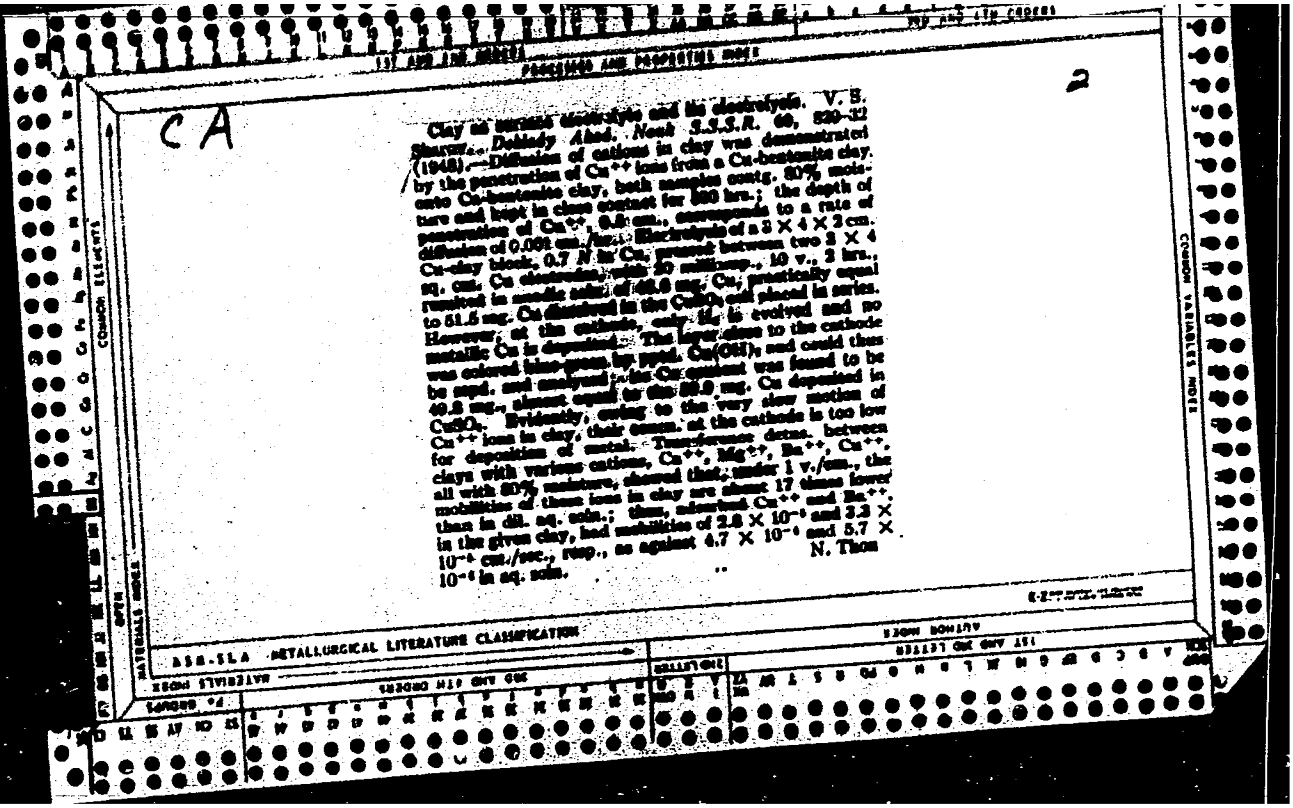


PROCESSES AND PROPERTIES INDEX

2

The rate of diffusion of adsorbed cations in a suspengel of clay. V. S. Sharov. *Kolloid. Zhur.* 10, 453-6(1948).— *Suspengel* is solidified suspension. When two cylinders of bentonite, one satd. with Ca and the other with Cu, are kept in direct contact or are sepd. by a thin paper or cellulose sheet, Cu^{++} migrates into the Ca bentonite at a rate of 0.5 cm. in 500 hrs. at 20°. I. T. Bikerman

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

2

Clay as porous electrolyte and its electrolysis. V. S. Sharov. *Doklady Akad. Nauk S.S.S.R.* 60, 829-32 (1948).—Diffusion of cations in clay was demonstrated by the penetration of Cu^{++} ions from a Cu-bentonite clay onto Ca-bentonite clay, both samples contg. 80% moisture and kept in close contact for 500 hrs.; the depth of penetration of Cu^{++}, 0.8 cm., corresponds to a rate of diffusion of 0.001 cm./hr. Electrolysis of a 3 × 4 × 2 cm. Cu-clay block, 0.7 *N* in Cu, pressed between two 3 × 4 sq. cm. Cu electrodes, with 20 milliamp., 10 v., 3 hrs., resulted in anodic soln. of 48.6 mg. Cu, practically equal to 51.5 mg. Cu dissolved in the $CuSO_4$ cell placed in series. However, at the cathode, only H_2 is evolved and no metallic Cu is deposited. The layer close to the cathode was colored blue-green by pptd. $Cu(OH)_2$ and could thus be sepd. and analyzed; its Cu content was found to be 49.8 mg., almost equal to the 50.0 mg. Cu deposited in $CuSO_4$. Evidently, owing to the very slow motion of Cu^{++} ions in clay, their concn. at the cathode is too low for deposition of metal. Transference detns. between clays with various cations, Ca^{++}, Mg^{++}, Ba^{++}, Cu^{++}, all with 80% moisture, showed that, under 1 v./cm., the mobilities of these ions in clay are about 17 times lower than in dil. aq. soln.; thus, adsorbed Cu^{++} and Ba^{++}, in the given clay, had mobilities of 2.8×10^{-5} and 3.3×10^{-5} cm./sec., resp., as against 4.7×10^{-4} and 5.7×10^{-4} in aq. soln. N. Thon

SHAROV, V. S.

25561 Skorost' dvizheniya kationov v suspengele gliny pri elektrolize. Kolloidnyy Zhu
Zhurnal, 1949, VYP. 4, S. 283-86

SO: Letopis' Zhurnal'nykh Statey, Vol. 34, Moskva, 1949

SHAROV, V. S.

25561. Skorost' dvizheniya kationov v suspengele gliny pri elektrolize. Kolloidnyy zhurnal, 1949, Vyp. 4, S. 23586

SO: Letopis' Zhurnal'nykh Statey, Vol. 34, Moskva, 1949

SHAROV, V. S.

25561

Skorost' Drizheniya Kationov v Suspengele Gliny Pri Elektrolize. Kolloidnyy Zhurnal. 1949. BYP. 4, s. 283 - 86

SO: LETOPIS No. 34

CA

Rate of motion of cations in a clay suspengel during electrolysis. V. S. Sharov. *Kolloid. Zhur.* 11, 283-6 (1949); cf. *C.A.* 43, 7777h.—Elec. field of 5 v./cm. was applied for 6-8 hrs. to the cell Pb/M bentonite/Cu bentonite/M bentonite/Pb; the clays contained 80% moisture. The penetration of M^{++} into Cu bentonite and of Cu^{++} into M bentonite was detd. by "development" with $K_4Fe(CN)_6$. The mobility was 28, 32, 30, and 28 × 10^{-6} cm./sec. per v./cm. for Cu^{++}, Ba^{++}, Ca^{++}, and Mg^{++}, i.e. was for different ions in the same ratio as in H_2O. In bentonite contg. 100% H_2O it was 60 × 10^{-6} for Cu^{++}. These mobilities were confirmed also by chem. analysis. J. J. Bikerman

SHAROV, V.S.

Mechanism of the action of an electric current on a waterlogged cohesive clay mass. Trudy NII osn.i fund.no.17:47-62 '52. (MLRA 9:9)
(Clay) (Drainage)

SHAROV, Vladimir Semenovich; DUL'KIN, A.I., red.; BORUNOV, N.I., tekhn. red.

[Superhigh frequency asynchronous motors] Sverkhvysokoskorostnye asinkhronnye elektrodvigateli. Moskva, Gosenergoizdat, 1963. 287 p. (MIRA 16:7)
(Electric motors, Induction)

79-2-2/58

AUTHORS: Shchukarev, S. A.; Morozova, M. P.; Kan Kho Yn.; Sharov, V. T.

TITLE: The Enthalpy of Formation of Lithium and Barium Bismuthides (Ental'piya obrazovaniya vismutidov litiya i bariya)

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, No. 2, pp. 290-293 (U.S.S.R.)

ABSTRACT: Lithium bismuthide (Li_3Bi) was prepared by melting the components, taken in a stoichiometric ratio, in a hermetically sealed steel crucible at a temperature of 1200°. The compound obtained in such a manner was a coarse-crystalline dark-greenish substance. The enthalpy value for this compound was fixed at - 39.5 ± 0.5 kcal/g.

The barium bismuthide (Ba_3Bi_2) was prepared by melting the bismuth with the barium, obtained by the high vacuum aluminothermy method, in a steel crucible at a temperature of 1100°. The enthalpy of

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The Enthalpy of Formation of Lithium and Barium Bismuthides 79-2-2/58

formation of this latter compound was fixed at - 128.1 ± 1.8 kcal/g. The bismuthides of both metals appear to be quite typical intermetallic compounds and the change in the heat of formation, resulting in the displacement of magnesium by barium, is subject to entirely different laws. The enthalpy values established were found to be different from the values established by Kubaschewski and Villa (6).

2 tables, 1 graph. There are 11 references, of which 7 are Slavic.

ASSOCIATION: The Leningrad State University

PRESENTED BY:

SUBMITTED: March 24, 1956

AVAILABLE: Library of Congress

Card 2/2

ACCESSION NR: AP4036534 S/0089/64/016/005/0456/0457

AUTHORS: Ganzha, V.D.; Konoplev, K.A.; Trenin, V.D.; Sharov, V.T.

TITLE: Ion exchange installation for preparing reactor feed water

SOURCE: Atomnaya energiya, v. 16, no. 5, 1964, 456-457

TOPIC TAGS: ion exchange water desalting, reactor water desalting, water desalting, reactor feed water, water cooled reactor, moderated reactor

ABSTRACT: The article describes an ion exchange water desalting installation to provide water feed for water cooled and moderated reactors. The installation has been designed at the Physical-Technical Institute im. A.F. Ioffe, An SSSR as a substitute for an unsatisfactory electric distillation plant at the VVR-M reactor, which has low capacity, rapid scale forming, and low electrical resistivity of final product). The described installation produces 3 m^3/hr feed water with 1 mg/l. salt, and less than 0.02 mg/l chloride ions. The water supply is adequate for a regeneration cycle of 50 m^3. Artesian water is used as feed for desalting (400 mg/l. salts, mostly Ca and Mg). Cation exchange resin KU-2 and anion exchange

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ACCESSION NR: AP4036534

resin EDE-10P were used with 250 l. swollen resin loaded into each filter. Two airlift containers with H_2SO_4 and NaOH provided for regeneration. A diagram of the installation shows 4 filters, 2 regeneration containers and subsidiary equipment. Water control is achieved by continuous measurement of specific electric resistivity and intermittent chemical analyses. The installation has been in operation since 1961. "The authors acknowledge B.P. Konstantinov's suggestion to switch over to ion exchange desalting, D.M. Kaminker's help in the operation; P.P. Kory*stin's and I.V. Volf's help (All-union Scientific Research Inst. of Hydrotechnical and Sanitary Engineering) in laboratory tests and project recommendations." Orig. art. has: 1 figure and 1 table.

ASSOCIATION: None

SUBMITTED: 08Aug63 ENCL: 00

SUB CODE: NP,GC NR REF SOV: 000 OTHER: 000

Card 2/2

L 25966-66 EWT(m)/ETC(f)/EPF(n)-2/EWG(m) IJP(c) WW

ACC NR: AP5026440 SOURCE CODE: UR/0089/65/019/004/0350/0354 9L 85 B

AUTHOR: Ganzha, V. D.; Yegorov, A. I.; Kaminker, D. M.; Kolyadin, A. B. Konoplev, K. A.; Saykov, Yu. P.; Sharov, V. T.

ORG: none

TITLE: Electrophoretic filter for reactor water purification 19

SOURCE: Atomnaya energiya, v. 19, no. 4, 1965, 350-354

TOPIC TAGS: nuclear research reactor, nuclear reactor ~~operation~~, water purification equipment, water cooled nuclear reactor, industrial filter, electrophoresis, corrosion, stainless steel / VVR-M nuclear reactor, 1Kh18N9T stainless steel

ABSTRACT: In January, 1962, a formation of turbidity in the primary loop of the VVR-M reactor of the Physicotechnical Institute im. A. F. Ioffe, AN SSSR, was observed. In June, the turbidity was so strong that a special electrophoretic filter for water purification was installed. The turbid water contained a 54-pct suspension of hydrate aluminum oxide which was originated by the corrosion of aluminum reactor vessel and fuel-element cans. A daily amount of about 2 g/Mw of suspended particles was discharged into the water. The installed filter was equipped with the platinized titanium anodeplates, while the cathode

2

UDC: 621.039.568

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L 25966-66

ACC NR: AP5026440

0

plates were made of 1 18 9T stainless steel. A cylindrical prototype of the filter was experimentally tested and the results were explained and graphically illustrated. The tests showed that the chemical composition of turbid and filtered water was as follows:

	Turbid	Filtered
Al_2O_3 in m/kg	3.0	0
Fe^{+3} " "	0.4	0.18
SiO_2 " "	6.0	1.3
O_2 " "	0.96	2.96
Optical density	0.065	0.008

The selected filter design data are summarized in the following table:

Water flow rate in kg/hr	250-500
Effective water flow in cu m/hr	0.5
Electrode voltage in v	110-220
Distance between electrodes in cm	1
Contact time in min. (at 250 l/hr)	2
Total filter volume in liter	10.7
Interelectrode volume in liter	7.5
Electrode size in mm	170x572
Number of anode plates	4
Number of cathode plates	5
Filter dimensions in mm	400x224x935

Card 2/3

L 25966-66

ACC NR: AP5026440

6

The filter has a small hydraulic resistance and needs only about 0.5 kw for its operation. A flow diagram represents schematically the circulation of water in the primary loop of the reactor. Another figure shows a photo of the electrophoretic filter which was successfully used for purifying water in the VVR-M reactor. The authors express their gratitude to Academician B. P. Konstantinoff for his continuous interest. Expressions of thanks are also given to V. P. Rodzevich (for apparatus design), V. D. Trenin and R. N. Rodionov (for analysis) and to D. A. Yashin and B. S. Razov for their assistance. Orig. art. has: 2 tables and 6 figures.

SUB CODE: 18,13 / SUBM DATE: 4July64 / ORIG REF:001 / OTH REF:002

Card 3/3 FID

S/081/61/000/019/068/085
B117/B110

11.0132

AUTHORS: Mekhtiyev, S. D., Sharov, V. V., Pashayev, T. A.

TITLE: Calorific value of some aromatic cyclohexyl and dicyclohexyl hydrocarbons

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 19, 1961, 424, abstract 19M182 (Azerb. neft. kh-vo, no. 2, 1961, 40-42)

TEXT: Data are given concerning the calorific value of aromatic cyclohexyl and dicyclohexyl hydrocarbons per weight and volume. These data were calculated starting from molar combustion heats and molar hydrocarbon volumes according to the method developed by V. M. Tatevskiy. [Abstracter's note: Complete translation]

Card 1/1

MEKHTIYEV, S.D.; ALIYEV, A.F.; KAMBAROV, Yu.G.; SHAROV, V.V.

Thermal decomposition of cyclohexane under conditions of extra rapid pyrolysis. Azerb.khim.zhur. no.3:3-13 '59. (MIRA 14:9)
(Cyclohexane) (Pyrolysis)

SOLOMENKO, N.S.; CHUVIKOVSKIY, V.S., redaktor; SHAROV, Ya.F., redaktor.

[Structural mechanics of the ship] Stroitel'naia mekhanika korablia. Pod obshchei red. IA.F.Sharova. Leningrad, Gos. nauchno-tekhn. izd-vo mashinostroit. i sudostroit. lit-ry, Leningradskoe otd-nie. 1954. 415 p. (MLRA 8:1)

(Shipbuilding)

NOVOZHILOV, V.V.; SHAROV, Ya.F., redaktor; CHICHKANOVA, V.S., redaktor;
FRUMKIN, P.S., tekhnicheskiy redaktor

[Theory of thin shells] Teoriia tonkikh obolochek. [Moskva] Gos.
izd-vo sydostroitel'noi lit-ry, 1955. 344 p. (MLRA 8:10)
(Elastic plates and shells)

SHAROV, Ya.F., kand.tekhn.nauk

Impact of waves on ship bottoms. Sudostroenie 24 no.4:5-9 Ap '58. (MIRA 11:4)
(Ships--Hydrodynamic impact)

SHAROV, Ya.F., kand.tekhn.nauk

Impact of ship hull bottoms agaisnt oncoming waves. Trudy NTO sud. prom. no.35:29-38 '60. (MIRA 13:9)
(Ships--Hydrodynamics)

1. SHAROV, Ya. V.
2. USSR (600)
4. Chemistry - Study and Teaching
7. Extracurricular activities, Khim. v shkole, No. 5, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

KOMAROVSKIY, A.N., doktor tekhn. nauk, prof.; SHAROVA, Ye.A., red.;
YEZHOVA, L.L., tekhn. red.

[Structural design of accelerators] Stroitel'nye konstruktsii uskoritelei. Izd.2., perer. Moskva, Gos. izd-vo "Vysshaia shkola," 1961. 133 p. (MIRA 15:3)
(Particle accelerators)

ACC NR: AP6035928 SOURCE CODE: UR/0413/66/000/020/0194/0194

AUTHOR: Arinushkin, L. S., Dumov, V. I./ Knyshev, V. A. / Moskovskiy, V. D./ Polinovskiy, A. Yu./ Sharov, Yu. A.

ORG: none

TITLE: Pump unit for two-circuit fuel systems for power plants

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no.20, 1966, 194

TOPIC TAGS: pump, engine fuel system, ~~two circuit feed system~~, fuel feed system, engine fuel pump

ABSTRACT: The proposed pump unit consists of a pump with a low pressure circuit and a pump with a high pressure circuit. To improve its efficiency and to decrease the system's size and weight, the impellers of both pumps are mounted on a common shaft and an annular collector is positioned between the impellers; the collector is connected by ducts to the low pressure pump outlet duct and to the high pressure pump inlet cavity. In order to improve the anticavitional characteristics of the unit, a variation of this unit is made so that the fuel by-pass from the high pressure circuit runs through a duct which is positioned tangentially to an annular chamber located at the unit inlet. (see Fig.1).

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ACC NR: AP6035928

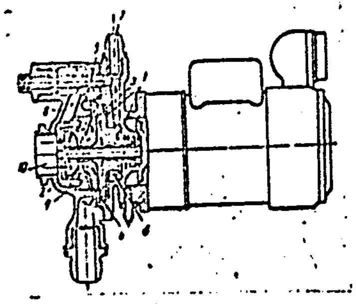

Fig. 1. Pump unit

1- Impeller; 2- drive shaft; 3- annular collector; 4- ducts; 5- low pressure pump outlet duct; 6- high pressure pump inlet cavity; 7- high pressure circuit; 8- tangentially positioned duct; 9- annular chamber; 10- unit inlet

[WA-88]

Orig. art. has: 1 figure.

SUB CODE: 21/ SUBM DATE: 05Oct63/

Card 2/2

SOV/120-58-4-12/30

AUTHORS: Bartenev, L. S., Glebovich, G. V., Goryachev, L. V., Sharov, Yu. A.

TITLE: A High-Speed Pulse Oscillograph (Impul'snyy skorostnoy ostsillograf)

PERIODICAL: Pribory i tekhnika eksperimenta, 1958, Nr 4, pp 63-65 (USSR)

ABSTRACT: An oscillograph with deflection plates of transmission line type is described; two time-base systems are fitted, the faster of which gives one complete sweep in about 4×10^{-9} sec. There are two oscillators, a 200 Mc/s and a 500 Mc/s oscillator. Thyratrons are used to develop the sweep voltages, and advantage is taken of their ionization characteristics to get really fast response. Post-deflection acceleration (3 kV) is used; the vertical deflection system has a pass-band extending up to 1000 Mc/s. The deflection sensitivity is 9 V/mm. Examples of oscillograms taken are

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SOV/120-58-4-12/30

A High-Speed Pulse Oscillograph

presented. The paper contains 4 figures and 2 references, of which 1 is Soviet and 1 English.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut (Radiophysics Scientific-Research Institute)

SUBMITTED: October 24, 1957.

KOTENKO, L.P.; KUZNETSOV, Ye.P.; MERZON, G.I.; SHAROV, Yu.B.

Elastic scattering of 2.8 Bev./c π^--mesons on hydrogen. Zhur. eksp. i teor. fiz. 42 no.5:1158-1165 My '62. (MIRA 15:9)

1. Fizicheskiy institut imeni P.N.Lebedeva AN SSSR.
(Mesons--Scattering) (Hydrogen)

ACC NR: AP7001460 (A) SOURCE CODE: UR/0413/66/000/021/0211/0212

INVENTOR: Arinushkin, L. S.; Dumov, V. I.; Luchkin, S. M.; Polinovskiy, A. Yu.; Sharov, Yu. A.

ORG: none

TITLE: Self-priming centrifugal-pump assembly. Class 59, No. 188308

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 21, 1966, 211-212

TOPIC TAGS: aircraft fuel pump, axial pump, fluid pump, centrifugal pump, engine fuel pump

ABSTRACT: This Author Certificate introduces a self-priming centrifuge pump for fuel systems such as those used in aircraft. A common casing contains a main centrifugal pump and an auxiliary fluid-flow ring pump. The discharge cavity of the latter connects with the fuel tank. The intake chamber of the fluid-flow ring pump is connected to the forechamber of the main pump rotor by means of a channel which encircles, for instance, the hub of the main rotor, and another channel in the casting connects the functional chamber of the ring pump to the discharge cavity of the main pump. This arrangement improves the anticavitational properties of the

Card 1/2 UDC: 621.67-112

ACC NR: AP7001460

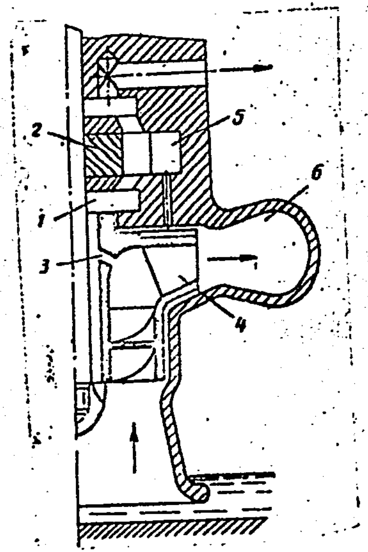


Fig. 1. Self-priming centrifugal pump

1 - Intake chamber; 2 - rotor; 3 - channel; 4 - rotor hub; 5 - functional chamber; 6 - discharge cavity of the main pump.

assembly and results in more dependable operation. In another version of the above assembly the main pump includes an engaged axial rotor, and in this case the intake of the ring pump is also connected to the forechamber of the axial rotor (see Fig. 1). [SA] Orig. art. has: 1 figure.

SUB CODE: 13, 01/ SUBM DATE: 30Dec62/ ATD PRESS: 5110

Card 2/2

L 22493-65 AFWL/AEDC(a)/ASD(f)-3/AFMDC

ACCESSION NR: AP5002420 S/0286/64/000/024/0024/0024

AUTHORS: Dobrovol'skiy, V. L.; Kaspruk, Yu. V.; Ryabov, B. I.; Sharov, Yu. N.; Mikhaylina, S. N.; Ivanov, Yu. V.; Budrik, G. V

7

8

TITLE: A method of raising and holding a cassete, with a source of ionizing radiation, in a vertical pipe in a suspended state. Class 21, No. 166975

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 24, 1964, 24

TOPIC TAGS: dynamic pressure, liquid flow, gas flow

ABSTRACT: This Author Certificate presents a method of applying the dynamic pressure of a liquid or gas current to raise and hold a cassete, with a source of ionizing radiation, in a vertical pipe in a suspended state.

ASSOCIATION: none

SUBMITTED: 28Nov62 ENCL: 00

SUB CODE: ME NO REF SOV: 000 OTHER: 000

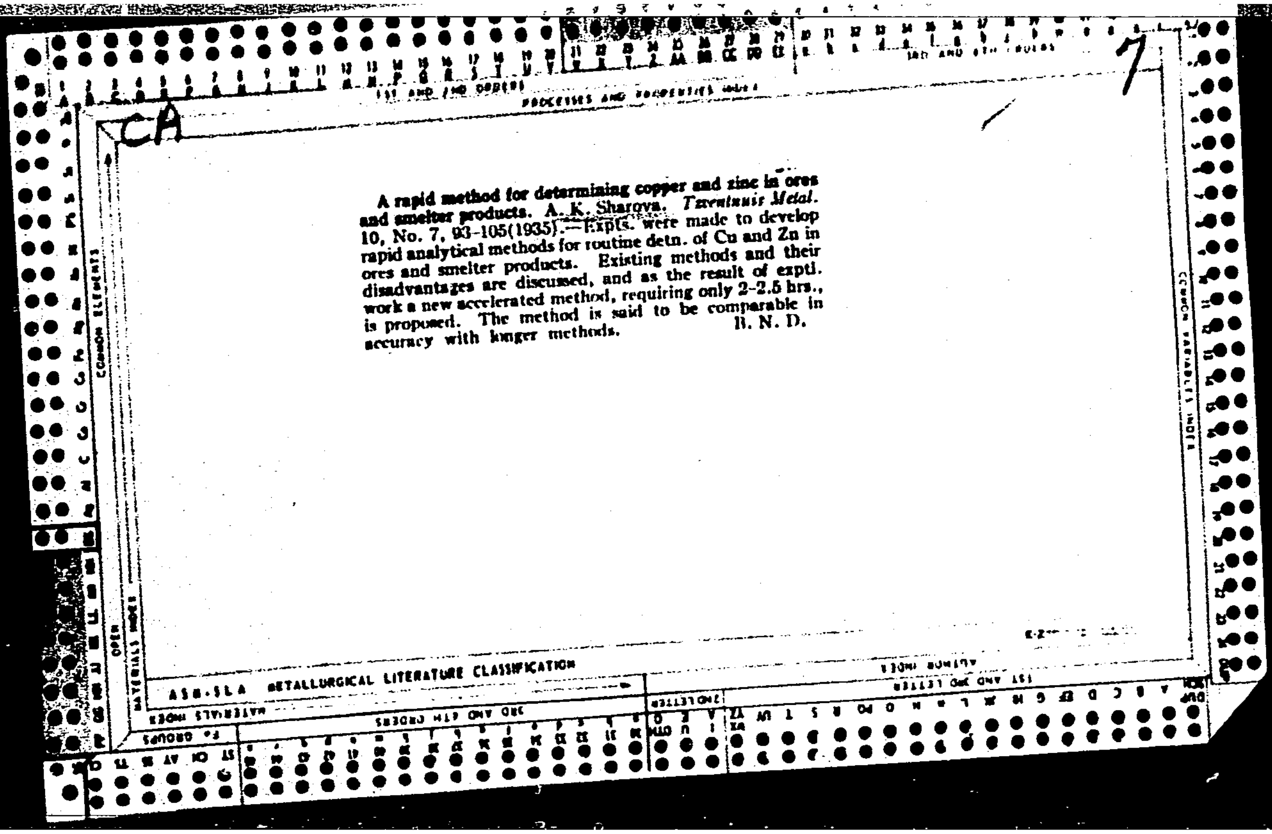
Card 1/1

SHAROV, Yuriy Vladimirovich; BASOV, Yu.V., redaktor; RYBIN, I.V., tekhnicheskiy redaktor

[Extracurricular work in engineering; a practical manual for teachers, Pioneer leaders, and workers directing the work of young engineers] Vneklassnaia rabota po tekhnike; metodicheskoe posobie dlia uchitelei, pionervozhatykh i vneshkol'nykh rabotnikov, vedushchikh rabotu s iunymi tekhnikami. Moskva, Gos. uchebno-pedagog. izd-vo Ministerstva prosveshcheniia RSFSR, 1955. 203 p. (MLRA 9:12)
(Engineering--Study and teaching)

CHURIN, V.; SHAROVA, A., DAVIDOVICH, V.

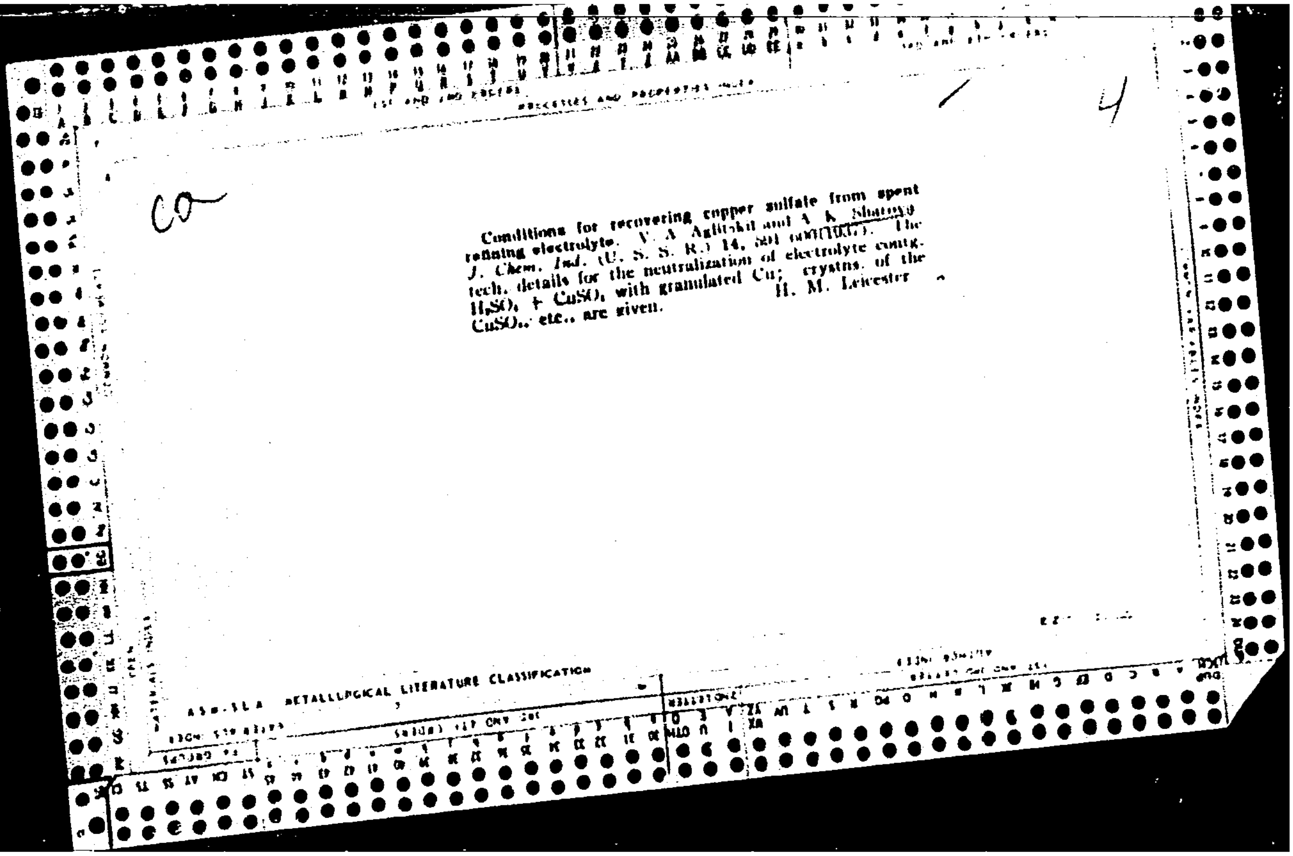
The new equipment and industrial hygiene. Sov.profsoiuzy 7 no.10:18-21 My '59. (MIRA 12:9)
(Industrial hygiene)



CA

7

A rapid method for determining copper and zinc in ores and smelter products. A. K. Sharova. *Tsvetnuie Metal.* 10, No. 7, 93-105(1935).—Expts. were made to develop rapid analytical methods for routine detn. of Cu and Zn in ores and smelter products. Existing methods and their disadvantages are discussed, and as the result of exptl. work a new accelerated method, requiring only 2-2.5 hrs., is proposed. The method is said to be comparable in accuracy with longer methods. B. N. D.



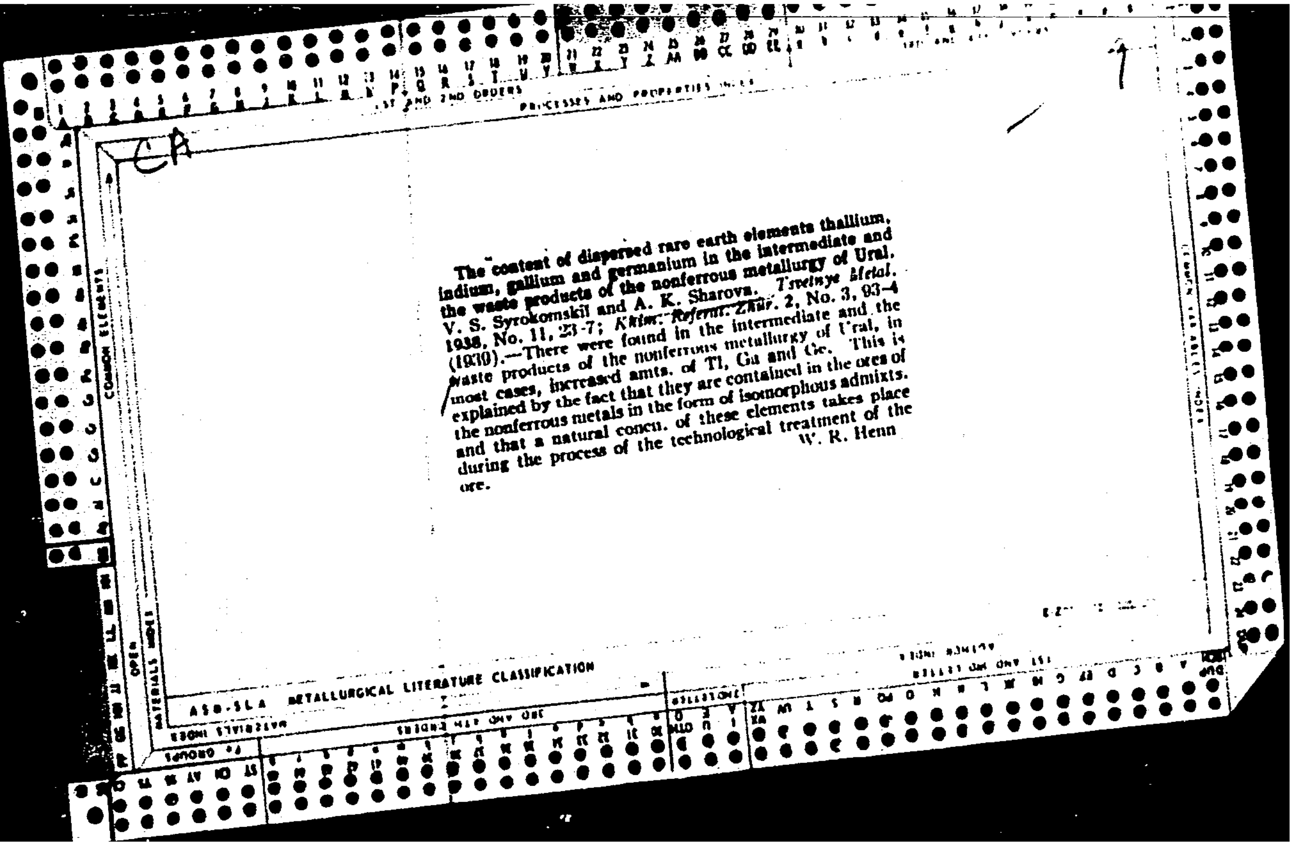
PROCESSES AND PROPERTIES INDEX

Co

/ 4

Conditions for recovering copper sulfate from spent refining electrolyte. V. A. Aglitskii and A. K. Shamgo. J. Chem. Ind. (U. S. S. R.) 14, 801 003(1937). The tech. details for the neutralization of electrolyte contg. H_2SO_4 + $CuSO_4$ with granulated Cu; crystn. of the $CuSO_4$, etc., are given. H. M. Leicester

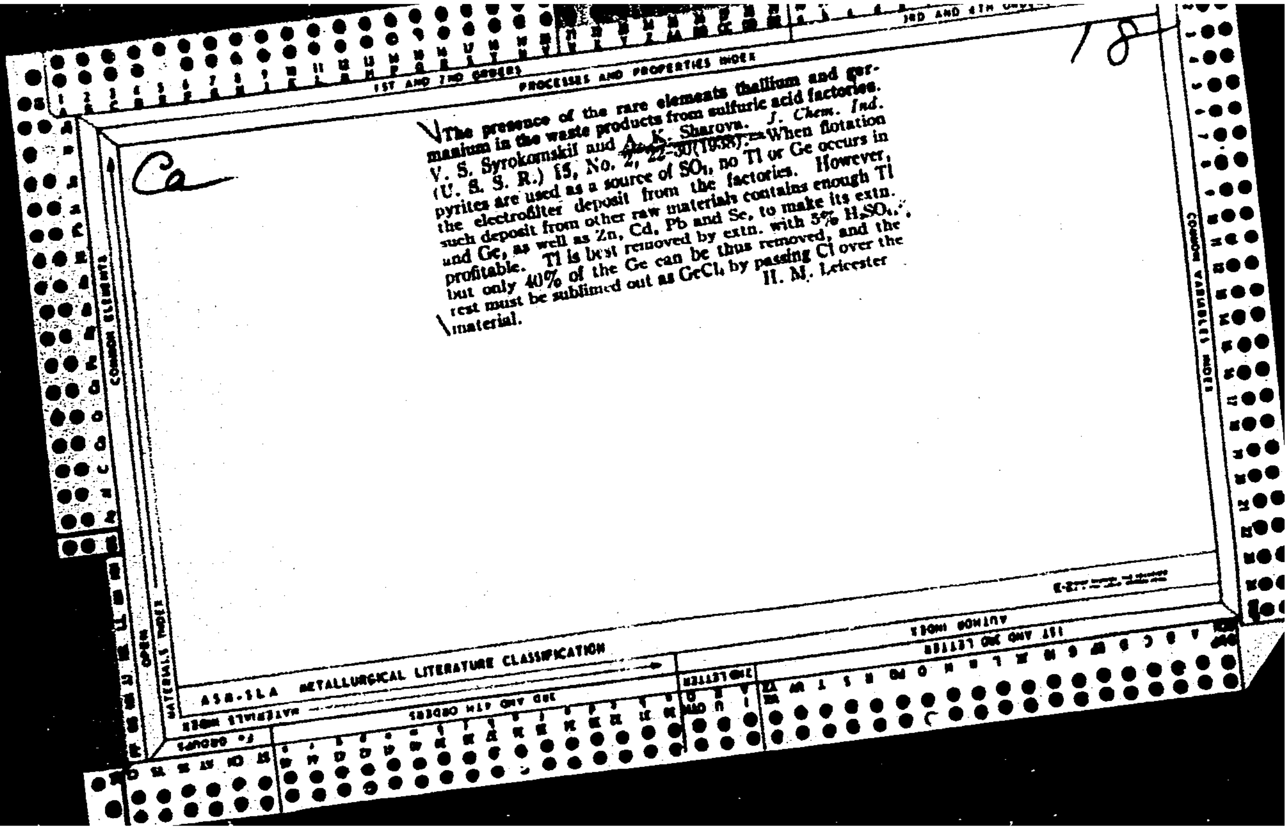
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

The content of dispersed rare earth elements thallium, indium, gallium and germanium in the intermediate and the waste products of the nonferrous metallurgy of Ural. V. S. Syrokomskii and A. K. Sharova. *Tsvetnye Metal.* 1938, No. 11, 23-7; *Khim. Referat. Zhur.* 2, No. 3, 93-4 (1939).—There were found in the intermediate and the waste products of the nonferrous metallurgy of Ural, in most cases, increased amts. of Tl, Ga and Ge. This is explained by the fact that they are contained in the ores of the nonferrous metals in the form of isomorphous admixts. and that a natural concn. of these elements takes place during the process of the technological treatment of the ore. W. R. Henn

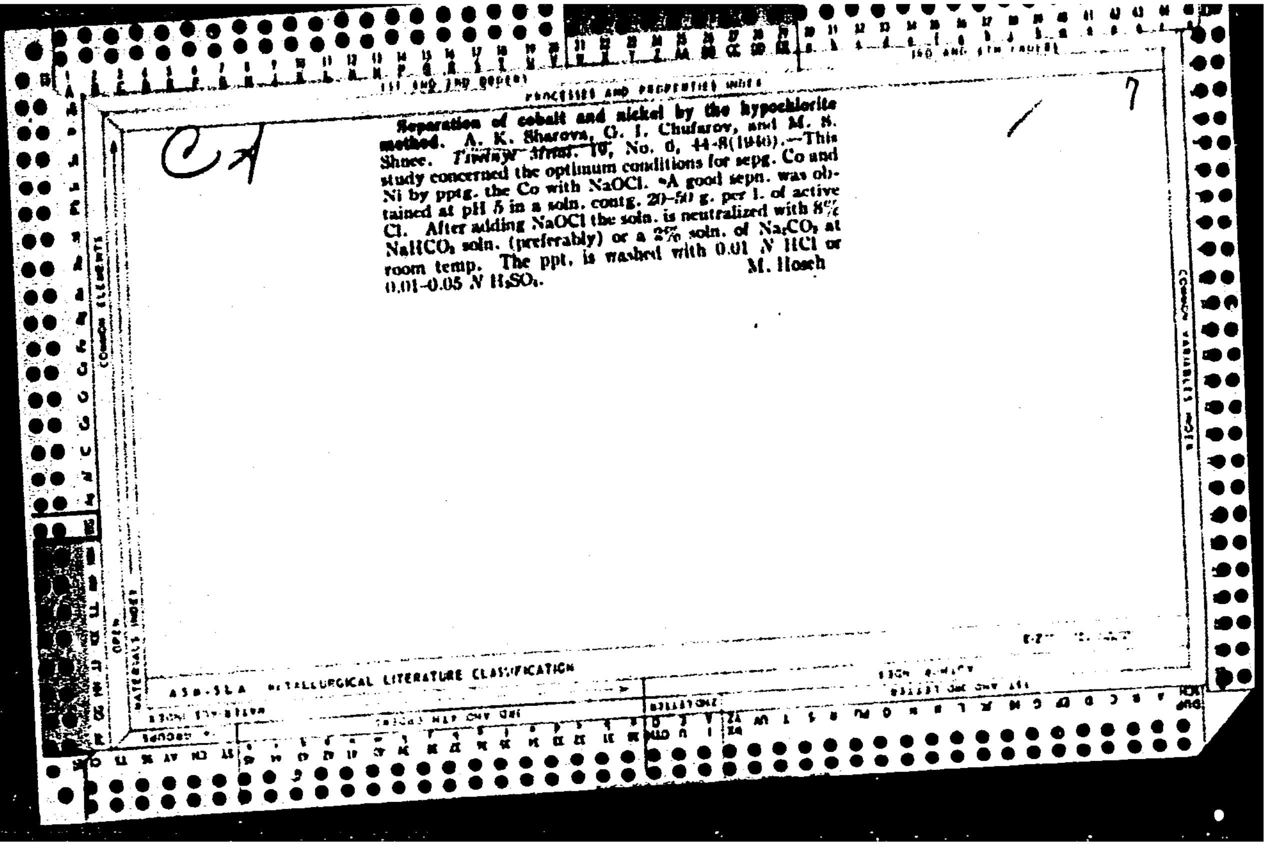
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



18

Ca

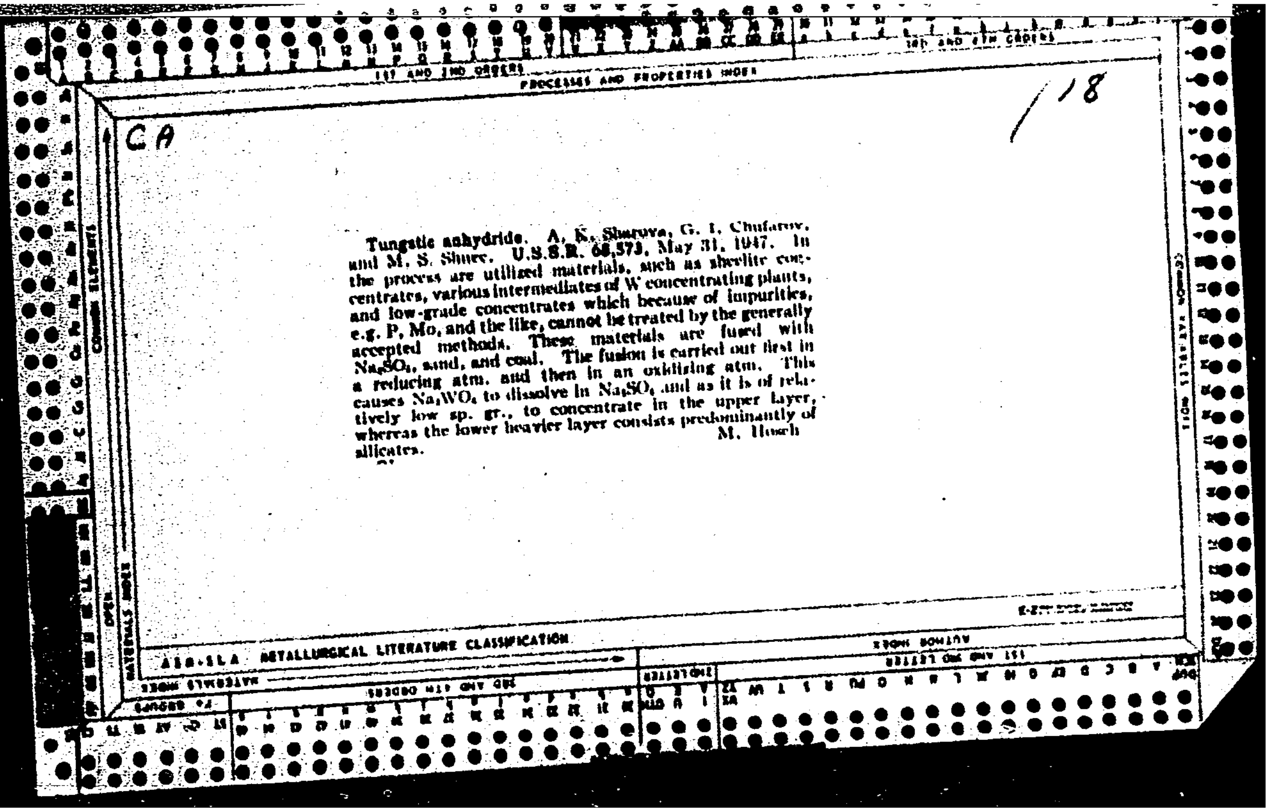
The presence of the rare elements thallium and germanium in the waste products from sulfuric acid factories. V. S. Syrokomskiĭ and A. K. Sharova. *J. Chem. Ind.* (U. S. S. R.) 15, No. 2, 22-30(1938).—When flotation pyrites are used as a source of SO_2, no Tl or Ge occurs in the electrofilter deposit from the factories. However, such deposit from other raw materials contains enough Tl and Ge, as well as Zn, Cd, Pb and Se, to make its extn. profitable. Tl is best removed by extn. with 5% H_2SO_4, but only 40% of the Ge can be thus removed, and the rest must be sublimed out as $GeCl_4$ by passing Cl over the material. H. M. Leicester



CA

7

Separation of cobalt and nickel by the hypochlorite method. A. K. Sharova, O. I. Chufarov, and M. S. Shnee. ~~*Tsvetnye Metal.* 10~~, No. 6, 44-8(1940).—This study concerned the optimum conditions for sepg. Co and Ni by pptg. the Co with NaOCl. A good sepn. was obtained at pH 5 in a soln. contg. 20-50 g. per l. of active Cl. After adding NaOCl the soln. is neutralized with 8% $NaHCO_3$ soln. (preferably) or a 2% soln. of Na_2CO_3 at room temp. The ppt. is washed with 0.01 *N* HCl or 0.01-0.05 *N* H_2SO_4.
M. Hosch



CA

1/18

Tungstic anhydride. A. K. Sharova, G. I. Chufarov, and M. S. Shuer. U.S.S.R. 68,573, May 31, 1947. In the process are utilized materials, such as scheelite concentrates, various intermediates of W concentrating plants, and low-grade concentrates which because of impurities, e.g. P, Mo, and the like, cannot be treated by the generally accepted methods. These materials are fused with Na_2SO_4, sand, and coal. The fusion is carried out first in a reducing atm. and then in an oxidizing atm. This causes Na_2WO_4 to dissolve in Na_2SO_4 and as it is of relatively low sp. gr., to concentrate in the upper layer, whereas the lower heavier layer consists predominantly of silicates. M. Hosch

1. DEMENEV, N. V., SHAROVA, A. K., POLYAKOVA, V. M.

2. USSR (600)

4. Sulfates

7. Reaction of titanium sulfate with potassium sulfate.
Dokl. AN SSSR 87 No. 5, 1952

9. Monthly Lists of Russian Accessions, Library of Congress, March 1953, Unclassified.

SHAROVA, A.K.

USSR/Physical Chemistry - Thermodynamics. Thermochemistry. Equilibrium. Physicochemical Analysis. Phase Transitions B-8

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 3747

Author : Chukhlantsev V.G., Sharova A.K.
Inst : Kiev State University
Title : Solubility Products of Uranyl Arsenates

Orig Pub : Zh. neorgan. khimii, 1956, 1, No 1, 36-41.

Abstract : By the isothermal method at 20° were secured data on the solubility of uranyl arsenates UO_2MAsO_4 (M = H, NH_4, K, Li and Na) in dilute solutions of nitric and sulfuric acid. By utilizing previously derived equations (Babko A.K., Naukovi zapiski KDU, 1935, 4) determination was made of the solubility products of the arsenates under study $[UO_2^{2+}][M^+][AsO_4^{3-}]$, which are (at 20°): $1.71 \cdot 10^{-24}$ (M = NH_4); $2.52 \cdot 10^{-23}$ (M = K); $1.35 \cdot$

Card 1/2

SHAROVA, A. K.

587

AUTHORS: Demenev, N. V., Milyutina, M.I., Sharova, A. K. and Shtin, A.P.

TITLE: Preparation of an Acid Sulphate of Trivalent Titanium. (O poluchenii kisloy sernokisloy soli trekhvalentnogo titana).

PERIODICAL: "Zhurnal Neorganicheskoy Khimii" (Journal of Inorganic Chemistry Vol.II, No.2, pp.465-467 (U.S.S.R.) - 1957

ABSTRACT: The formation of a violet-coloured crystalline precipitate in quantities strongly dependent on sulphuric-acid concentration was observed when working with reduced acid solutions of titanium. To determine the composition of the precipitate and elucidate the conditions leading to its formation was the object of the work described. The solutions used contained either 15.25, 25.0 or 37.5 g/litre of TiO_2 initially, and the final contents of this and of sulphuric acid were determined. The results are tabulated and indicate that with 700 - 100 g/litre of H_2SO_4 precipitation occurs to 90-97%. Analysis of the salt prepared with careful exclusion of oxidation gave the composition $Ti_2(SO_4).H_2SO_4.8H_2O$ It is a crystalline powder soluble in water, dilute sulphuric and hydrochloric and concentrated sulphuric acids. It is recommended as a source of trivalent titanium for analytical work. There are three references, one of which is Russian. 1 Table.

Received April 26, 1956.

Card 1/1

SHAROVA, A.K.

S/137/60/000/006/001/015
A006/A001

Translation from: Referativnyy zhurnal, Metallurgiya, 1960, No. 6, p. 70, # 12237

AUTHOR: Sharova, A.K.

TITLE: Studies of the Chemistry and Technology of Rare Elements

PERIODICAL: V sb.: Uchenyye Urala v bor'be za tekhn. progress, I. Sverdlovsk, 1959, pp. 137-146

TEXT: Studies are listed, carried out at the laboratory of rare elements at the Ural Branch of AS USSR, on the chemistry and technology of rare elements. There are 19 bibliographical titles.

G.S.

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

SHAROVA, A.K.; FOTIYEV, A.A.

Production of titanium dioxide from the product of the sodium sulfate reduction smelting of an ilmenite concentrate. Izv.Sib. otd.AN SSSR no.4:52-63 '59. (MIRA 12:10)

1. Ural'skiy filial Akademii nauk SSSR.
(Ilmenite) (Sodium sulfate) (Titanium oxides)

SHAROVA, A.K.; CHUFAROVA, I.G.; VITTIKH, M.V.; SHOSTAK, F.T.

Recovery of germanium from dilute solutions by an ion exchange method. Izv. Sib. otd. AN SSSR no.8:36-42 '59. (MIRA 13:2)

1. Ural'skiy filial AN SSSR. (Germanium--Analysis) (Ion exchange)

SHAROVA, A.K.; SHTIN, A.P.

Niobium phosphates. Izv. Sib. otd. AN SSSR no.9:40-47 '59 (MIRA 13:3)

1. Ural'skiy filial AN SSSR.
(Niobium phosphates)

SHTIN, A.P.; SHAROVA, A.K.

Tantalum phosphate. Report No.2. Izv.Sib.otd.AN SSSR no.10:
87-94 '59. (MIRA 13:4)

1. Ural'skiy filial Sibirskogo otdeleniya AN SSSR.
(Tantalum phosphate)

S/598/60/000/004/010/020
D217/D302

AUTHORS: Sharova, A.K., Demenev, N.V., Fotiyev, A.A. and Ivakin, A.A.

TITLE: Production of titanium dioxide from ilmenite concentrates by sodium sulphate melting

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i yego splavy. No. 4. Moscow, 1960. Metallurgiya titana, 95-101

TEXT: In all experiments, ilmenite concentrate from the Irshinsk deposits, of 0.056 mm mesh size were used. The chemical composition of the concentrate was as follows: 51.46% TiO_2, 33.78% Fe, 1.04% Al_2O_3, 1.56% SiO_2, 0.86% MgO, 0.26% V_2O_5, 0.42% MnO and traces of CaO. Wood charcoal with an ash content of approximately 2% and 0.4 mm mesh size was used as the reducing agent. The main reagent, Na_2SO_4, is a natural product. The charges of ilmenite concentrate, Na_2SO_4 and wood charcoal were

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S/598/60/000/004/010/020
D217/D302

Production of titanium ...

thoroughly mixed and transferred to porcelain or graphite crucibles. Charges weighing 200-300 grams were used for the experiments. The mixtures were melted in a silite furnace. It was assumed that the melting was complete at the moment when gases ceased to be evolved from the melt. Each crucible was then withdrawn from the furnace and the melt cast in a graphite mould. After cooling, the melt was ground and subjected to leaching with water and acid. The residue was calcined and analyzed for its iron and titanium dioxide content. When ilmenite concentrates are melted with Na_2SO_4, the following reaction occurs: $FeTiO_3 + Na_2SO_4 + 2C = FeS + Na_2TiO_3 + 2CO_2$. The reaction intensity depends among other factors on the method of melting and the surface area of contact of the various phases. In order to find the conditions under which maximum extraction of iron in aqueous leaching is attained, the following factors were studied: Volume ratio between solid and liquid, time of stirring, temperature of leaching and degree of grinding of the melts. In all experiments, leaching was carried out at 25°C for 15 minutes. The

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S/598/60/000/004/010/020
D217/D302

Production of titanium ...

particle size of the melt was 1.6-0.85 mm. It was found that complete extraction of iron from the melt can be attained only when the sodium sulphate and carbon contents in the charge are sufficiently high. The optimum ratio between concentrate, sodium sulphate and wood charcoal in the charge (in parts-by-weight) is 1:2:0.6. At 1000-1050°C, complete decomposition of the ilmenite concentrate occurs (up to 98 or 99%). No melting of the charge occurs up to 900°C. At higher temperatures, intense melting occurs with much evolution of gas and a homogeneous fluid melt is formed. Extraction of iron sulphide into the solution depends on the time of leaching and the degree of grinding of the melt. An increase in the time of leaching from 15 to 60-90 minutes decreases the amount of iron extracted into the solution owing to the transformation of the sulphide from a soluble form into a gel. The optimum conditions for extracting iron sulphide in the aqueous solution (up to 80 or 85%) are as follows: ratio solid: liquid = 1:10, solution temperature = 70-80°C, degree of comminution of the melt = 2-3 mm and time of leaching = 15-20 minutes. As a result of treating the residue, titanium dioxide

Card 3/4

S/598/60/000/004/010/020
D217/D302

Production of titanium ...

is obtained in a form suitable for metallurgical purposes and for producing titanium tetrachloride. There are 5 figures, 1 table and 9 references: 6 Soviet-bloc and 3 non-Soviet-bloc. The reference to the English-language publication reads as follows: J.C. Witt, Am. Chem. Soc., 43, no. 4, 734, 1921.

Card 4/4

SHOSTAK, F.T.; VITTIKH, M.V.; SHAROVA, A.K.; CHUFAROVA, I.G.

Separation of germanium by an ion exchange method. Izv.Sib.otd. AN SSSR no.8:69-74 '60. (MIRA 13:9)

1. Nizhne-Tagil'skoye otdeleniye Nauchno-issledovatel'skogo instituta plasticheskikh mass i Ural'skiy filial AN SSSR.
(Germanium) (Ion exchange)

S/828/62/000/000/009/017
E039/E420

AUTHORS: Shtin, A.P., Sharova, A.K.

TITLE: Investigation of the physico-chemical properties of phosphoric acid compounds of niobium and tantalum and their separation

SOURCE: Razdeleniye blizkikh po svoystvam redkikh metallov. Mezhvuz. konfer. po metodam razdel. blizkikh po svoyst. red. metallov. Moscow, Metallurgizdat, 1962, 107-115

TEXT: Complexes of Ti-Nb-Ta usually contain phosphorus. In order to determine the effect of phosphorus on the behaviour of these metals the properties of the phosphoric acid compounds of Nb and Ta were investigated. Nb and Ta precipitated from solution in sulphuric acid by the action of phosphate ions can be presented in the form: $2Me_2O_5 \cdot P_2O_5 \cdot 6H_2O$ (where Me is Nb or Ta). The dehydration of these phosphates is shown to be a gradual process largely complete at 500°C. However, X-ray diffraction analysis shows that at 800°C in the case of niobium phosphate the composition can be represented by $2Nb_2O_5 \cdot P_2O_5 \cdot 0.85H_2O$ and in the case of tantalum phosphate at 900°C the corresponding formula is

Card 1/2

S/828/62/000/000/009/017
Investigation of the physico-chemical .. E039/E420

$2Ta_2O_5 \cdot P_2O_5 \cdot 0.81H_2O$; in addition the transition from the amorphous to the crystalline state is observed on dehydration. The dehydrated salts have a higher density than the hydrated salts. The conditions for separating Nb and Ta in the H_2SO_4 solution by the "phosphate" method is studied. Precipitation of tantalum phosphate from a solution containing 850 to 1000 g/litre of H_2SO_4 gives a separation of Ta from Nb of 90 to 95%. With a high Nb content in the solution ($Ta_2O_5:Nb_2O_5$ = 1:25) the product has a higher Nb concentration (i.e. $Nb_2O_5:Ta_2O_5$ = 1:2). When the ratio of $Nb_2O_5:Ta_2O_5$ = 3:1 and 1:1.8 the ratio of $Ta_2O_5:Nb_2O_5$ in the product is 8:1 and 14:1 respectively. After treatment with an alkali the phosphate precipitate contains more than 90% Ta_2O_5. Repeated precipitation is recommended only from solutions with a high Nb content. There are 4 figures and 6 tables.

Card 2/2

S/828/62/000/000/010/017
E039/E420

AUTHORS: Sharova, A.K., Demenev, N.V., Polyakova, V.M., Milyutina, M.I.

TITLE: The physico-chemical basis of methods of separating titanium and the earth acids

SOURCE: Razdeleniye blizkikh po svoystvam redkikh metallov. Mezhvuz. konfer. po metodam razdel. blizkikh po svoyst. red. metallov. Moscow, Metallurgizdat, 1962, 116-123

TEXT: This work was undertaken because the properties of the fluoride complexes of Ti and Nb and their solubilities in various mineral acids are of importance in the development of separation processes. It is shown that the optimum conditions for the separation of Ti and Nb from H_2SO_4 solution are: 10% H_2SO_4, 1% HF and 10% KCl. From a study of the interaction of potassium salts with Te and Nb in H_2SO_4 a method is developed for separating these elements from medium and strong acid solutions. This separation depends on the principal valency change in Ti. When a potassium salt is introduced in H_2SO_4 solution containing Ti (180 to 250 g/litre H_2SO_4) the double sulphate of Ti and K is

Card 1/2

precipitated. When Ti and Nb are present in solution both metals are precipitated in the form of isomorphous compounds. However, if Ti is present in the trivalent form, it is not precipitated and the Nb is separated from it in the precipitate in the form: $K_2SO_4(NbO)_2(SO_4)_3\cdot 4H_2O$. Data are obtained on the solubilities of Nb and Ti in the TiO_2-SO_3-H_2O system over a wide range of H_2SO_4 concentrations (180 to 1000 g/litre) and the conditions for their separation found. The separation of Nb and Ti is attained by the successive fractional precipitation of Ti in the form $Ti_2(SO_4)_3\cdot H_2SO_4\cdot 8H_2O$ and then the niobium sulphate complex $(NH_4)_8[Nb_6O_3(SO_4)_{12}]\cdot 21H_2O$ with an acidity of 800 to 900 g/litre H_2SO_4. The product of this process contains 98.26 to 98.8% Nb_2O_5 and 0.3 to 0.5% TiO_2. As a result of this investigation the above methods are recommended for the separation of Nb and Ti. There are 2 figures and 2 tables.

MILYUTINA, M.I.; SHTIN, A.P.; SHAROVA, A.K.

Studying the interaction of trivalent titanium sulfate with sulfuric acid. Titan i ego splavy no.5:301-396 '61. (MIRA 15:2)
(Titanium—Metallurgy)

ACCESSION NR: AT4042095 S/2768/63/000/007/0007/0011

AUTHOR: Sharova, A.K.; Polyakova, V.M.; Bamburov, V.G.; Chernyavskaya, Ye. I.

TITLE: Separation of titanium from niobium in mixed solutions of hydrofluoric and sulfuric acids

SOURCE: AN SSSR. Ural'skiy filial. Institut khimii. Trudy*, no. 7, 1963. Khimiya i tekhnologiya redkikh metallov (Chemistry and technology of rare metals), 7-11

TOPIC TAGS: niobium, titanium, niobium purification, titanium purification, silicofluoride method

ABSTRACT: The authors studied the mineral acid extraction of agglomerates obtained during enrichment of complex ores by sintering with KCl plus K2SiF6 or Na_2SiF_6 as well as the separation of titanium from niobium in the resulting hydrofluoric and sulfuric acid solutions. The agglomerate samples were treated at 70 and 80C with 3.5, 5.0, 7.0 and 10% H_2SO_4, 1.0, 2.0, 2.5 and 5.0% HF, and their combinations, with or without addition of KCl. Treatment for 1 hour at 80-90C with a mixture of 1% HF and 5% H_2SO_4 was found to be expedient, yielding up to 88% and 81% of the total Nb_2O_5 and TiO_2 (plus ZrO_2), respectively. Effective separa-

Card 1/2

ACCESSION NR: AT4042095

tion of titanium from niobium in these solutions was achieved by adding KCl to the solution (up to 40-60 g/L), cooling from 70 to 15C and allowing the precipitate to settle for 1 hr.; 94.3-95.6% of the total titanium then precipitated in the form of potassium fluorotitanate. Org. art has: 5 tables.

ASSOCIATION: Institut khimii, Ural'skiy filial AN SSSR (Chemical Institute, Ural Branch, AN SSSR)

SUBMITTED: 00 ENCL: 00

SUB CODE: IC NO REF SOV: 001 OTHER: 000

Card 2/2

ACCESSION NR: AT4042096 S/2768/63/000/007/0013/0017

AUTHOR: Titova, Z. M., Sharova, A. K.

TITLE: A study of the conditions of precipitation of niobium from mixed solutions of hydrofluoric and sulfuric acids.

SOURCE: AN SSSR. Ural'skiy filial. Institut khimii. Trudy*, no. 7, 1963. Khimiya i tekhnologiya redkikh metallov (Chemistry and technology of rare metals), 13-17

TOPIC TAGS: niobium, niobium oxide precipitation, silicofluoride method, niobium purification

ABSTRACT: The authors studied the conditions for the precipitation of Nb_2O_5 from the hydrofluoric and sulfuric acid solutions which result from the processing of pyrochlorine concentrates by the silicofluoride method, (concentrate: K2SiF6:KCl = 1:1.6: 0.4 at 750C for 1.5 hrs., followed by extraction with 1% HF and 5% H_2SO_4 and precipitation of most of the Ti as potassium fluorotitanate). Preliminary studies with ammonium hydroxide showed that complete precipitation of Nb is achieved only at pH 10. In subsequent studies, aqueous sodium hydroxide solution was slowly added to the sample at 70-80C, in amounts so calculated

Card 1/2

ACCESSION NR: AT4042096

as to leave a prescribed residual acidity in the sample. The niobium containing precipitate was separated by filtration, washed with water, dried and analyzed for Ti, Nb and Zr. The yield of precipitated Nb was found to increase with a reduction in residual acidity of the solution, reaching 97% for a residual acidity of 14.7 g/L H_2SO_4. An improved purification procedure for the niobium precipitate was also developed which requires less NaOH and yields a Nb_2O_5 containing 3.55% TiO_2, 0.08% ZrO_2, 1% or more Ca, up to 1% Al and Fe, and up to 0.01% Mg. Orig. art. has: 2 tables.

ASSOCIATION: Institut khimii, Ural'skiy filial AN SSSR (Chemical Institute, Ural Branch, AN SSSR)

SUBMITTED: 00 ENCL: 00

SUB CODE: IC NO REF SOV: 009 OTHER: 006

Card 2/2

CCESSION NR: AT4042097 S/2768/63/000/007/0079/0083

UTHOR: Sharova, A.K.; Milyutina, M.I.

ITLE: Separation of niobium and titanium (III) in sulfuric acid solutions.

OURCE: AN SSSR. Ural'skiy filial. Institut khimii. Trudy*, no. 7, 1963. Khimiya i ekhnologiya redkikh metallov (Chemistry and technology of rare metals), 79-83

OPIC TAGS: niobium, titanium, niobium purification, titanium purification, electrolytic eduction, titanium reduction

BSTRACT: The authors investigated the possibility of separating titanium (III) from niobium V) in strong sulfuric acid solutions on the basis of the increase in formation of an insoluble itanium (III) compound with increasing concentration of the acid. A curve showing the yield f precipitate versus acid concentration is shown in the Enclosure. Analysis of the precipitate dentified it as $Ti_2(SO_4)_3 \cdot H_2SO_4 \cdot 8H_2O$. Solutions of 600 – 900 g/L H_2SO_4 containing TiO_2 nd Nb_2O_5 in proportions of 6:1, 4:1, 2:1, and 1:1 were then used in experiments in which he TiO_2 was precipitated in the above form by electrolytic reduction, while the niobium re- ained in the solution. The process is illustrated by diagrams. Orig. art. has: 6 figures and 1 table.

Card 1/3

ACCESSION NR: AT4042097

ASSOCIATION: Institut khimii, Ural'skiy filial AN SSSR (Chemical Institute, Ural Branch, AN SSSR)

SUBMITTED: 00

ENCL: 01

SUB CODE: IC

NO REF SOV: 007

OTHER: 000

Card 2/3

ACCESSION NR: AT4042097

ENCLOSURE: 01

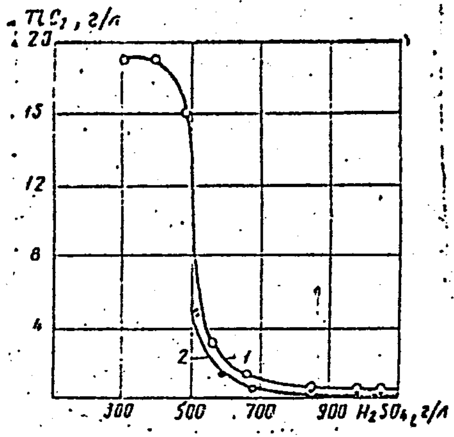

Fig. 1. Decrease in the content of trivalent Ti in solution (in g/L) in relation to sulfuric acid concentration (g/L). The TiO_2 content in the original solutions was 18.5 (1) and 39 (2) g/L.

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ACCESSION NR: AT4042098 S/2768/63/000/007/0085/0089

AUTHOR: Milyutina, M. I., Sharova, A. K.

TITLE: Fractional precipitation of titanium and niobium sulfates from solutions of sulfuric acid

SOURCE: AN SSSR. Ural'skiy filial. Institut khimii. Trudy, no. 7, 1963. Khimiya i tekhnologiya redkikh metallov (Chemistry and technology of rare metals), 85-89

TOPIC TAGS: titanium, niobium, tantalum, titanium purification, niobium purification, fractional precipitation, metal sulfate fractionation

ABSTRACT: A solution containing 245 g/L H_2SO_4, 48 g/L TiO_2, 10.25 g/L Nb_2O_5, and 3.52 g/L Fe_2O_3 was used in a study of the successive precipitation of titanium and niobium in the form of their low-valence sulfates. Titanium reduced electrolytically to Ti^{+3}, was precipitated (as $Ti_2(SO_4)_3 \cdot H_2SO_4 \cdot 8H_2O$) by adding sulfuric acid to the solution to a concentration of 800-900 g/L. The Nb^{+3} and Nb^{+5} remaining in the solution was then precipitated in the form of ammonium sulfate-niobiate, $(NH_4)_8[(Nb_6O_3)(SO_4)_{12}] \cdot 21H_2O$,

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by adding ammonium sulfate to the solution to a concentration of 7.5%. 98-99% pure Nb_2O_5 with less than 0.5% TiO_2 was then obtained from the precipitate in yields of up to 71.5% by oxidation, conversion into hydrates, drying and calcining. Tantalum is not precipitated by the procedure. "The analyses were carried out by Lab. Asst. G. V. Milovidova." Orig. art. has: 4 tables.

ASSOCIATION: Institute khimii, Ural'skiy filial AN SSSR (Chemical Institute, Urals Branch of the AN SSSR)

SUBMITTED: 00

ENCL: 00

SUB CODE: IC, MM

NO REF SOV: 007

OTHER: 001

Card 2/2

ACCESSION NR: AT4042099 S/2768/63/000/007/0101/0106

AUTHOR: Sharova, A. K., Shtin, A. P.

TITLE: The behavior of niobium and tantalum phosphates with respect to various acid reagents

SOURCE: AN SSSR. Ural'skiy filial. Institut khimii. Trudy*, no. 7, 1963. Khimiya i tekhnologiya redkikh metallov (Chemistry and technology of rare metals), 101-106

TOPIC TAGS: niobium, tantalum, niobium purification, niobium phosphate solubility, tantalum phosphate solubility, selective extraction, oxalic acid, hydrogen peroxide

ABSTRACT: The solubility of niobium and tantalum phosphates, alone and combined, in 2.3-13.6 N H_3PO_4, 22.5-81.0 g/liter of $(COOH)_2$, 6, 9, and 12 N HCl, 3, 18 and 36N H_2SO_4, and combinations of H_2SO_4 + 1-7 H_2O_2 or 4% $(COOH)_2$, or HCl + 1-4% $(COOH)_2$, was determined in order to explore the possibility of their selective extraction from a mixture. The salts, separately or combined, were treated with a measured volume of solvent without heating, the undissolved residue was separated by filtration, and the filtrate was analyzed for Nb and Ta. The two phosphates showed insignificant solubility in HCl.

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Although Ta phosphate is much more soluble than Nb phosphate in high concentrations of H_3PO_4, this could not be used for its selective extraction; in the other solvents and combinations, the Nb phosphate was more soluble. Addition of 1-7% H_2O_2 to H_2SO_4 sharply increased the solubility of the phosphates, but their weight ratio in the filtrate remained constant at about 1:10.7. Selective extraction of niobium phosphate could be achieved only by treatment with a solution of HCl plus 1-4% $(COOH)_2$ in which Ta is insoluble, although with H_2SO_4 + 4% $(COOH)_2$ the Nb:Ta ratio in the filtrate was 133:1. Orig. art. has: 2 figures and 6 tables.

ASSOCIATION: Institut khimii, Ural'skiy filial AN SSSR (Chemical Institute, Urals Branch of the AN SSSR)

SUBMITTED: 00 ENCL: 00

SUB CODE: IC, MM NO REF SOV: 008 OTHER: 008

Card 2/2

L 25619-65 EWT(m)/EWP(t)/EWP(b) IJP(c) JD

13
9
B

ACCESSION NR: AP4047787 S/0289/64/000/002/0121/0126

AUTHOR: Ul'yanova, I.A.; Sharova, A.K.

TITLE: Thallium extraction from sulfuric acid solutions by means of methyl violet

21

SOURCE: AN SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya khimicheskikh nauk, no. 2, 1964, 121-126

TOPIC TAGS: thallium extraction, thallium determination, methyl violet, quantitative analysis

ABSTRACT: The reaction $(m.v.)^+ + Tl^{3+} + 4Cl^- \longrightarrow (m.v.)TlCl_4$, where m.v. = methyl violet, was used by the authors as a method of separating thallium from solutions of complex composition resulting from dissolving sublimates of the nonferrous metals industry in H_2SO_4. The pH of the solution, the thallium concentration, the amount of methyl violet consumed, and the rate of precipitate sedimentation were the factors varied to achieve a complete thallium separation. The amount of methyl violet introduced was [illegible] of methyl violet was found to be [illegible] precipitation of 1 kg of thallium [illegible] solution containing 0.5-1.0 g [illegible] wide range of pH < 7. A concentrate containing, in addition to > 95% of the thallium, primarily organic substances and antimony, plus insignificant amounts of other elements.

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L 25619-65

ACCESSION NR: AP4047787

can be obtained with a single precipitation, and the methyl violet used can be retrieved easily by treating the concentrate with NaOH. A diagram of the complete thallium separation process is supplied. Orig. art. has: 2 figures, 1 table, 3 structural formulas and 1 chart.

ASSOCIATION: Ural'skiy filial AN SSSR, Sverdlovsk (Ural Branch, AN SSSR)

SUBMITTED: 28May62 ENCL: 00 SUB CODE: IC, GC

NO REF SOV: 013 OTHER: 000

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[illegible]4-65 EWT(m)/EPF(n)-2/EWP(t)/EWP(b) Pu-4 IJP(c) [illegible]

ACCESSION NR: AP5009948 **UR/0078/65/010/004/0877/0882**

AUTHOR: Chufarova, I. G.; Sharova, A. K.

20

TITLE: Niobium and tantalum arsenites

SOURCE: Zhurnal neorganicheskoy khimii, v. 10, no. 4, 1965, 877-882

TOPIC TAGS: niobium arsenite, tantalum arsenite, inorganic synthesis

ABSTRACT: In this work conditions were investigated for precipitation of niobium and tantalum from sulfuric acid solutions with sodium arsenite. Niobium pentoxide containing 99.9% Nb_2O_5 and tantalum metal (99.9% pure) were used for making sulfate solutions. Niobium and tantalum arsenites were precipitated by the addition of a 4% solution of sodium arsenite to the sulfate solutions containing tantalum and niobium. On the basis of chemical analysis it was established that the composition of the precipitated niobium and tantalum arsenites may be expressed by the formulas

$2Nb_2O_5 \cdot As_2O_3 \cdot 8H_2O$ and $2Ta_2O_5 \cdot As_2O_3 \cdot 8H_2O$.

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L 52974-65

ACCESSION NR: AP5009948

Heating curves display an endothermic effect at 145°C for niobium salt and at 180°C for tantalum salt and exothermic effects at 730°C and 945°C for niobium arsenite and tantalum arsenite respectively. The endothermic effect is due to the removal of water from the salt while the exothermic effect occurs due to transition of the salt from the amorphous to the crystalline state. Hydrochloric acid solutions with small amounts of oxalic acid as well as oxalic acid solutions containing potassium chloride possess some selectivity with respect to niobium arsenite. Using these solutions it is possible to obtain niobium solutions containing very little tantalum or none at all. Orig. art. has 5 tables and 5 figures.

ASSOCIATION: none

SUBMITTED: 27Nov63 ENCL: 00 SUB CODE: IC, GC

NO REF SOV: 008 OTHER: 004

L 52373-65 EWT(m)/EPF(n)-2/EWP(t)/EWP(b) Pu-4 IJP(c) JD/JG

UR/0078/65/010/004/0883/0888

ACCESSION NR: AP5009949

AUTHOR: Milyutina, M. I.; Sharova, A. K.; Titova, Z. M.

TITLE: Niobium arsenate

SOURCE: Zhurnal neorganicheskoy khimii, v. 10, no. 4, 1965, 883-888

TOPIC TAGS: niobium compound, inorganic synthesis, arsenic compound, chemical reaction, precipitation, thermal analysis

ABSTRACT: The precipitation of niobium arsenate from sulfuric acid solutions was studied. Niobium arsenate was precipitated with sodium arsenate. The amount of niobium arsenate, [illegible], its composition and properties were al[illegible] The data on the precipitation of niobium with sodium arsenate are shown [illegible] of the Enclosure. It is found that the optimum conditions for the precip[illegible] niobium arsenate are: 150-300 g/l of sulfuric acid; about 4% of $Na_2HAsO_4 \cdot 7H_2O$ solution; $As_2O_5:Nb_2O_5 = (10-20):1$; aging of precipitate for 20 hrs. Niobium arsenates are formed by reaction of sodium arsenate with niobium in sulfuric acid as follows:

$$(NbO_2)_2SO_4 + Na_2HAsO_4 = (NbO_2)_2HAsO_4 + Na_2SO_4$$

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L 52373-65

ACCESSION NR: AP5009949

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Thermal and chemical analysis of the arsenates and intermediate dehydration products showed the following compounds: $2Nb_2O_5\cdot As_2O_5\cdot 7H_2O$, 2Nb[illegible] $As_2O_5\cdot H_2O$ and $2Nb_2O_5$ $\cdot As_2O_5$. The existence of a large number of x-ray diffraction lines indicates the [illegible] of $2Nb_2O_5\cdot As_2O_5$ or $(NbO_2)_4As_2O_7$. The remaining niobium arsenate [illegible] forms and [illegible]

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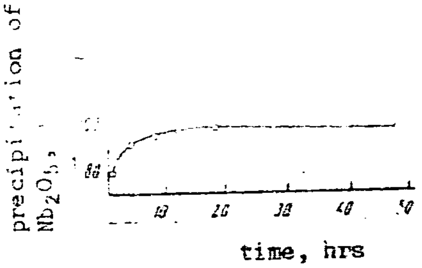
L 52373-65

ACCESSION NR: AP5003949 ENCLOSURE: 01



[illegible] from sulfuric acid solutions as a [illegible]

Card 3/3

SHAROVA, A. K.

Sharova, A. K. "On the relationship between the structure and composition of Devonian Bauxites of the Ural," Trudy Gorno-geol. in-ta (Akad. nauk SSSR, Ural'skiy filial), Issue 14, 1948, p. 74-80

SO: U-3[illegible]50, 16 June 53, (Letopis 'Zhurnal 'nykh Statey, No. 5, 1949).

GLADKOVSKIY, A.K. : SHAROVA, A.K.: VTORUSHIN,A.V.

Turgay Straits—Petrology, Rocks-igneous

Age of the igneous rocks in the central part of the Turgay Straits. Dokl. AN SSSR 83, no. 1, 1952

Ural'skiy Gosudarstvennyy Universitet Im. A,M. Gor'kogo
rcd. 8 Dec 1951

Monthly List of Russian Accessions, Library of Congress, August 1952. UNCLASSIFIED

SO: Monthly List of Russian Accessions, Library of Congress, ____________1953, Uncl

Sharova, A.K.

USSR

The Asiatic Cretaceous bauxite province. A. K. Gladkovskii and A. K. Sharova. *Doklady Akad. Nauk S.S.S.R.* 88, 137–40(1953).—The Cretaceous bauxites of Asiatic Russia have a pisolitic structure. The little weathered bauxite rocks consist of red cement and black magnetite beans. The beans are built up with a finely dispersed layer of magnetite of sedimentary origin, named α-magnetite. Four varieties of minerals are designated: $Al_2O_3.0.1–0.8 H_2O$, $Al_2O_3.0.7–1.3 H_2O$, $Al_2O_3.1.4–2.3 H_2O$, and $Al_2O_3.3 H_2O$. The chem. compn. of the beans, the cement, and the bauxite is given. Another table gives the compn. of the magnetic fractions. It is assumed that the Cretaceous bauxites are primarily a mech. and partly a chem. sediment.

J. S. Joffe

SHAROVA, A.K.

Mineralogical composition of bauxites from the lower Cretaceous Period in S.S.S.R. A. K. Gladkovskii and A. K. Sharova. *Doklady Akad. Nauk S.S.S.R.* 89, 151-4(1953). CH—Bauxites (I) of the lower Cretaceous Period found in U.S.S.R. are composed of black magnetic pisolites (II) held together by a reddish brown nonmagnetic cement (III). Chem. and mineralogical compns. of II and III were detd. and the results showed that II and III were formed under different physico-chem. conditions and that II are really bauxite pebbles brought to the place of formation of I by certain forces.

Elisabeth Barabash

(1)

SHAROVA, A.K.

1) 15(6) p.3

PHASE I BOOK EXPLOITATION

Akademiya nauk SSSR. Otdeleniye geologo-geograficheskikh nauk

Boksity, ikh mineralogiya i genezis (Mineralogy and Origin of Bauxites) Moscow, Izd-vo AN SSSR, 1958. 488 p. 2,200 copies printed.

Compiler: Dolgopolov, N.N.; Chief Ed.: Strakhov, N.M., Academician; Resp. Ed.: Bushinskiy, G.I.; Ed. of Publishing House: Nosov, G.I.; Tech. Ed.: Polenova, T.P.

PURPOSE: The book is intended for scientists working in geology and associated fields, and managers of industrial and engineering concerns.

COVERAGE: This collection of articles by various authors on the mineralogy and geochemistry of bauxites appeared as a result of a 1955 conference on the origin of bauxite (Chairman, Academician N.M. Stakhov). The conference discussed the genetic theories propounded by various scientists, underlining the weakness of L.S. Berg's biochemical theory and the hydrothermal theories developed by some French scientists. The majority of Soviet geologists appear to be in accord with the sedimentary origin theory. The book discusses problems on the origin of bauxite and describes some deposits found in the USSR. Each article is accompanied by Soviet and other references, photographs diagrams, tables and maps.

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Mineralogy and Origin of Bauxites SOV/1254

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PART I. MINERALOGY OF BAUXITES

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Mineralogy and Origin of Bauxites

PART II. GENERAL PROBLEMS ON THE ORIGIN OF BAUXITES

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SHAROVA, A.K.

Structures of Ural Paleozoic bauxites. Mat.po geol.i pol.iskop.
Urala no.6:91-102 '58. (MIRA 12:10)
(Ural Mountains--Bauxite)

SHAROVA, A.K.; [illegible]Y, A.K.

Correlation of limestones and its importance in prospecting for Ural Devonian bauxites. Mat.po geol.i pol.iskop.Urala no.6: 103-110 '58. (MIRA 12:10)

(Ural Mountains--Bauxite) (Limestone)

GLADKOVSKIY, A.K.; SHAROVA, A.K.

Minerals fromed during the weathering of bauxites in the Southern Ural Basin and their role in the geochemistry of bauxites. Izv. vys. ucheb. zav.; geol. i razv. 3 no.7:130-134 Jl '60. (MIRA 13:9)

1. Sverdlovskiy gornyy institut.
(Southern Ural Basin--Bauxites)

GLADKOVSKIY, A.K.; SHAROVA, A.K.

Regularities in the composition and formation of bauxite deposits in the Urals and the Turgay Plain. Trudy Gor.-geol.inst. UFAN SSSR no.58:169-205 '62. (MIRA 15:12)

(Ural Mountains—Bauxite) (Turgay Tableland—Bauxite)

GLADKOVSKIY, A.K.; SHAROVA, A.K.

"Triassic" bauxites on the eastern slope of the Urals. Dokl. AN SSSR 151 no.6:1420-1423 Ag '63. (MIRA 16:10)

1. Institut geologii Ural'skogo filiala AN SSSR. Predstavleno akademikom D.I.Shcherbakovym.

SHAROVA, A.K.; RUDNOVA, M.Ya.

Strigovite from the Southern Ural bauxite basin. Trudy Inst.geol. UFAN SSSR no.64:59-64 '64. (MIRA 17:12)

GLADKOVSKIY, A.K.; SHAROVA, A.K.; KHRAMTSOV, V.N.

Characteristics of the composition, origin, and changes of Mesozoic and Cenozoic bauxite deposits in the Asiatic part of the U.S.S.R. Trudy Inst.geol. UFAN SSSR no.64:127-166 '64.

(MIRA 17:12)

GLADKOVSKIY, A.K.; SHAROVA, A.K.

Significance of the facies primary and secondary characteristics of bauxites in forecasting. Trudy Inst.geol. UFAN SSSR no.64:167-176 '64.
(MIRA 17:12)

GLADKOVSKIY, A. K.; SHAROVA, A. K.

Bauxite potential of the Lower Mesozoic sediments of the eastern slope of the Northern Ural Mountains. Izv AN SSSR Ser geol 29 no. 5: 67-75 My '64. (MIRA 17:[illegible])

1. Institut geologii Ural'skogo filiala AN SSSR, Sverdlovsk.