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PROCESSES AND PROPERTIES INDEX

The electroplating of platinum and palladium on copper. O. R. Zvyagintsev, L. K. Amosova, A. V. Vorobieva and N. M. Khananov. *J. Applied Chem.* (U. S. S. R.) 10, 1969-78 (in French 1978-9)(1937).—The following formulas (g./l.) are recommended: For Pt-plating on Cu: (a) H_2PtCl_6 4, Na_2HPO_4 100, $(NH_4)_2HPO_4$ 20 and NH_4Cl 25; c. d. 1 amp./sq. in., at 70-80°, for 3-4 min.; the thickness of the layer formed was 0.1-0.14 γ/sq. in.; (b) $Pt(NH_3)_2(NO_2)_2$ 10 and $NaNO_2$ 100; c. d. 1-2 amp./sq. in. at 70-80°, for 2 min.; recommended for very thin plates (0.04 γ/sq. in.). For Pd-plating on Cu: (a) Pd (as H_2PdCl_4) 1.2, $(NH_4)_2HPO_4$ 20, Na_2HPO_4 100 and NH_4Cl 25; c. d. 0.25 amp./sq. in. at 20° for 2 min.; thickness 0.04 γ/sq. in.; (b) $Pd(NH_3)_2(NO_2)_2$ 10.7, NH_4NO_3 100 and NH_4OH 25; c. d. 0.75 amp./sq. in. at 20° for 1-2 min.; thickness up to 5 γ/sq. in.

A. A. Podgorny

Zhur. Prik. Khim.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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BC

B-2

Gold in the Baleisk mine (Transbaikal). O. E. ZVIAGINTSEV, V. A. VORONOVA, and E. L. [illegible]SKAJA (Bull. Acad. Sci. U.R.S.S., 1938, Sér. Chim., 509—518).—Up to 120 m. depth, the composition, microstructure, and Ag content of the Au are const. The K content is very high in comparison with granites. All the component elements and ions have V.E.K. 0·32—1·5 kg.-cal. per mol. L. J. J.

Izv. Ak. Nauk SSSR, Ser. Khim.

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PROCESSES AND PROPERTIES INDEX

04

7

[illegible]

Remark on the memoir by M. S. Platonov, N. F. Krivoshlikov and A. A. Marakaev: "New quantitative reactions of columbium and tantalum." O. E. Zvyagintsev and Z. G. Namoradze. *J. Gen. Chem.* (U. S. S. R.) 8, 829 (1938); cf. *C. A.* 31, 4014⁹.—Reactions of Cb and Ta with resorcinol does not give a qual. test for these elements

S. L. Madorsky

Zhur. Obshch. Khim.,

COMMON ELEMENTS

MATERIALS INDEX

OPEN

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BC

A-1

New reactions for detection of niobium and tantalum. O. E. ZVJAGINTSEV and Z. G. NAMORADZE (J. Gen. Chem. Russ., 1938, 8, 829).—The reaction with resorcinol (Platonov *et al.*, A., 1937, I, 265) is not given by pure Nb salts, and cannot serve for detection of Nb or Ta. R. T.

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BC

A-1

Dokl. AN SSSR

Osmiridium with a cubic crystalline lattice. O. E. Zvyagintsev (Compt. rend. Acad. Sci. U.R.S.S., 1940, 26, 591—[illegible]).—Auric osmiridium or aurosmirid, Ir 61·7, Os 21·6, Ru 3·5, and Au 10·3%, has the cubic lattice of Ir. A mineral, Ir 66·4, Os 32·2, Rh 1·4%, separated from Ural Pt residues also has a face-centred cubic structure (X-ray data given) with a parameter approximating that of Ir. The boundary of the solid solutions in the Os-Ir alloys, thus, lies between 35 and 31% Os; alloys with an Os content > this have the hexagonal Os lattice, and those with less have the cubic face-centred lattice of Ir. The system of natural Os-Ir alloys should be classified: Os 0—35%, minerals of the native Ir group; Os 35—60%, nevyanskite; Os 60—70%, sysertskite.

L. S. T.

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PROCESSES AND PROPERTIES INDEX

9

Ca

The action of sulfide minerals on solutions of gold chloride and cyanide. O. E. Zvyagintsev and E. L. Pisarzhevskaya. *Compt. rend. acad. sci. U. R. S. S.* 18, 435-6(1938)(in English); cf. *C. A.* 31, 937⁴.—A soln. of $HAuCl_4$ (0.1090 g. Au in 100 ml.) was stirred at room temp. with 1 g. of finely ground sulfide. After two days the g. Au per 100 ml. was as follows: chalcopyrite, none; pyrite, none; galena, 0.006; sphalerite, 0.1380; and control sample, 0.1082. Similar expts. with a $KAu(CN)_2$ soln. 0.1830 g. Au in 100 ml.) gave the following results after 20 days: chalcopyrite, 0.0840; pyrite, 0.0870; galena, 0.1020; sphalerite, 0.1820; and control, 0.1820.

S. Bradford Stone

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Action of minerals on gold solutions. O. E. Zvyagintsev and I. A. Paulsen. *Compt. rend. acad. sci. U.R.S.S.* 21, 176-8(1938)(in English).—An investigation of the reactions between sulfide minerals (galena, sphalerite, chalcopyrite, pyrite and arsenopyrite) and $AuCl_3$ or $NaAuO_2$ led to the following equations: (*a*) $3\ PbS + 2\ AuCl_3 = 3\ PbCl_2 + 2\ Au + 3\ S$, (*b*) $9\ FeS_2 + 40\ AuCl_3 + 6\ FeCl_3 + 72\ H_2O = 8\ FeSO_4 + 7\ FeCl_2 + 10\ H_2SO_4 + 40\ Au + 124\ HCl$, (*c*) $3\ FeCuS_2 + 7\ AuCl_3 + 6\ H_2O = 7\ Au + 3\ FeCl_2 + 3\ CuCl_2 + 1.5\ H_2SO_4 + 4.5\ S + 9\ HCl$, (*d*) $7\ (4\ ZnS{\cdot}FeS) + 20\ AuCl_3 + 10\ HCl + 26\ H_2O = 24.5\ H_2S + 6.5\ H_2SO_4 + 20\ Au + 28\ ZnCl_2 + 7\ FeCl_2 + 4\ S$, (*e*) $5\ FeAsS + 2.5\ Fe_2O_3 + 20\ AuCl_3 + 32.5\ H_2O = 4\ FeSO_4 + 6\ FeCl_2 + 20\ Au + 5\ H_3AsO_4 + H_2SO_4 + 48\ HCl$, (*f*) $3\ PbS + 8\ NaAuO_2 + 4\ NaOH = 8\ Au + 3\ Pb(NaO)_2 + 3\ Na_2SO_4 + 2\ H_2O$, (*g*) $1.5\ (4ZnS.FeS) + 17\ NaAuO_2 + 10\ H_2O = 17\ Au + 6\ Zn(OH)_2 + 1.5\ Fe(OH)_2 + 6\ Na_2SO_4 + 1.5\ S + 5\ NaOH$, (*h*) $2\ FeS_2 + 10\ NaAuO_2 + 4\ H_2O = 2\ Fe(OH)_3 + 4\ Na_2SO_4 + 10\ Au + 2\ NaOH$. It is unlikely that reactions *f*, *g* and *h* occur in nature. The other equations probably represent the processes of deposition of Au in the cementation zone. A. H. Kenne

3

4

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PROCESSES AND PROPERTIES INDEX

Ca

7

Determination of gold in cyanide solutions of gold-extracting plants. O. E. Zvyagintsev. *Zolotaya Prom.* No. 3, 30(1939).—The following method was found satisfactory for detg. Au in cyanide solns. contg. not less than 0.0002% Au: To 100 ml. of the cyanide soln. add 5-10 ml. HNO_3, heat to boiling, add 1.0-1.5 g. $KClO_3$ in small portions during 15-20 min. Boil the soln. for 1/2 hr., cool, neutralize with NaOH or KOH to weakly acid reaction (litmus test), and det. the Au by titrating with hydroquinone or colorimetrically by comparing with a standard scale the intensity produced by drops of the Au soln. on filter paper wetted with $Hg_2(NO_3)_2$.

B. Z. Kamich

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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C-1

38. **Wet method of determining gold in ores.** O. E. Zvyagintsev, V. A. Vorob'eva, and S. N. Schelkova (Zavod. Lab., 1939, 8, 608—610).—4% I in 4% KI is added with shaking to 10—50 g. of SiO_2 or oxide ore, to a permanent brown coloration, when the solution is filtered. 10 g. of Hg are added per 100 ml. of filtrate + washings, and the system is shaken for 1 hr. The washed amalgam is then dissolved in HNO_3, and the residual Au is washed and dissolved in aqua regia. The solution is evaporated to dryness, the residue of $AuCl_3$ dissolved in 1 ml. of H_2O, and 0·1 ml. of the solution placed on filter-paper impregnated with [illegible]. The intensity of coloration given is compared with that given by a series of standards. The error varies from 0 to −15%; in the case of sulphide ores the accuracy is very low, even with special pretreatment of the minerals. W. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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1. GOGORISHVILI, P.V., KULYINA, V.N., ZVYAGINTSEV, O.Ye.

2. USSR (600)

"High Oxygenous Compounds of Iron," Zhur. Obshch. Khim., 9, No 21, 1939. Chem Inst., Georgian Affil, of the Acad. of Sci. USSR. Received 9 June 1939.

9. [redacted] Report U-1626, 11Jan 1952.

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Ca

Zhur. Prik. Khim., 12

Solubility of tantalum chloride and bromide in organic solvents. Z. G. Namoradze and O. K. Zvyagintsev. *J. Applied Chem.* (U. S. S. R.) 12, 603-8 (in French, 608) (1939).—$TaCl_5$ dissolves in CCl_4 (0.8375, 1.2404 and 1.6663 g./100 cc. of soln. at 20, 30 and 35°, resp.) and in CS_2 (1.3530, 2.6803, 3.1175 and 3.7430 g./100 cc. of soln. at 0, 14, 20 and 25°). It reacts with $CHCl_3$, EtBr, $PhNO_2$ and $H_2NCH_2CH_2NH_2$. At 0° it dissolves in EtBr much more readily than in CS_2, but at higher temp. the reaction was observed. $TaBr_5$ dissolves in CCl_4 (0.3931 and 1.4681 g./100 cc. of soln. at 20 and 30°) and in EtBr (0.2530, 0.3066 and 0.4277 g./100 cc. of soln. at 0, 20 and 5°); no reaction was observed. The reaction products were investigated. Data are tabulated and plotted.

A. A. Podgorny

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BC

A-1

Action of ultra-short waves on complex compounds. D. I. Eristavi and O. E. Zvjagintzev (Ann. Sect. Platine, 1939, No. 16, 81—86).—The conductivity and temp. of aq. solutions of *cis*-$[Pt(NH_3)_2]Cl_2$, *trans*-$[Pt(NH_3)_2]Br_2$, $[Pt(NH_3)_4]Cl_2$, and $[Co(NH_3)_3(NO_2)_3]$ are raised by exposure to ultra-short waves ($\lambda = 2$—10 m.). Disruption of the mols. is supposed to occur. R. T.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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BC

H-1

Reduction of solutions of gold salts with natural sulphides. O. E. Zvyagintsev and A. Paulsen (Ann. Sect. Platine, [illegible], No. 10, 109—137).—The following reactions are shown to take place between aq. $AuCl_3$ or $NaAuO_2$ and certain natural sulphides: $3PbS + 2AuCl_3 \rightarrow 3PbCl_2 + 2Au + 3S$; $3PbS + 8NaAuO_2 + 4NaOH \rightarrow 8Au + 3Na_2SO_4 + 3Na_2PbO_2 + 2H_2O$; $9FeS_2 + 40AuCl_3 + 6FeCl_3 + 7H_2O \rightarrow 8FeSO_4 + 7FeCl_2 + 10H_2SO_4 + 40Au + 124HCl$; $2FeS_2 + 10NaAuO_2 + 4H_2O \rightarrow 2Fe(OH)_3 + 4Na_2SO_4 + 10Au + 2NaOH$; $6FeCuS_2 + 14AuCl_3 + 12H_2O \rightarrow 14Au + 6FeCl_2 + 6CuCl_2 + 3H_2SO_4 + 9S + 18HCl$; $14(4ZnS,FeS) + 40AuCl_3 + 20HCl + 62H_2O \rightarrow 46H_2S + 40Au + 8S + 56ZnCl_2 + 14FeCl_2 + 12H_2SO_4$; $10FeAsS + 40AuCl_3 + 5Fe_2O_3 + 68H_2O \rightarrow 8FeSO_4 + 12FeCl_3 + 40Au + 10H_3AsO_4 + 2H_2SO_4 + 84HCl$; $3(4ZnS,FeS) + 34NaAuO_2 + 10H_2O \rightarrow 34Au + 12Zn(OH)_2 + 3Fe(OH)_3 + 12Na_2SO_4 + 3S + 10NaOH$. $NaAuO_2$ is very unstable in aq. alkaline solution, and probably could not exist under natural conditions. Deposition of Au in the cementation zone of natural sulphide deposits from $AuCl_3$ formed in the oxidation zone is quite possible.

R. T.

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CA

2

Dokl. AN SSSR

Oxidation of copper sulfide and transference of copper into aqueous solution under air pressure. O. E. Zvyagintsev and V. G. Tronev. *Compt. rend. acad. sci. U. R. S. S.* 23, 537-40(1939)(in English).—It is known that the soly. of Cu sulfides in water fluctuates within narrow limits of the order of 10^{-11} to 10^{-8} mols. per l. at normal temp. and pressure. This investigation gives preliminary data on the effect of high air pressure (up to 100 atm.) and temp. (up to 150°) on oxidation and soln. in water. The effect of partial pressure of oxygen on the soln. of Cu from CuS in water was detd. by using a weighed portion of CuS from a $CuSO_4$ soln. with H_2S and dried at 100° to const. weight. Under partial pressures of O in the system varying from 0.3 to 40 atm. the percentage Cu dissolved ranged from 6.0 to 87.9%. Expts. on the effect of temp. on the soln. of Cu from CuS in distd. water under air pressure show that first of all the CuS oxidation velocity and the passing of Cu into soln. increase as the temp. is raised until an optimum is reached, above which soln. decreases more or less pronouncedly depending on the initial weighed portion of CuS. This may be explained in terms of acceleration and strengthening of hydrolysis of the sulfate product. These data lead to the following conclusions: (1) CuS can be dissolved in distd. water in a few hrs. under air pressure at temps. from 100° to 200°. (2) The velocity with which Cu passes into aq. soln. is proportional to the partial pressure of O in the gaseous phase. (3) As a result of hydrolysis of the $CuSO_4$ which forms from the oxidation of CuS, basic copper sulfate, $CuSO_4 \cdot 2Cu(OH)_2$, remains undissolved in water. Its quantity depends upon the temp. R. K. Carleton

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

Ca

6

The interaction of gold with telluric and selenic acids. O. E. Zvyagintsev and R. A. Yakovleva. *Compt. rend. ~~acad. sci. U.R.S.S.~~* 25, 100-1(1939)(in English).—Metallic Au is unaffected by a 10% soln. of telluric or selenic acid at 25°, 60° or 100° during 240 hrs., or at 150° during 6 hrs. Hence, under natural conditions, these acids are not carriers of Au that tend to enrich Au deposits near the surface. Freshly pptd. and washed Au(OH)$_3$ was treated with less than the equiv. amt. of hot telluric acid; the yellow filtrate upon concn. in a desiccator over H$_2$SO$_4$ deposited yellow crystals (of indefinite compn.) which always contained more or less cryst. telluric acid and metallic Au as impurities and which showed Au:Te ratios varying from approx. 1:1 to approx. 3:1. G. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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7

Determination of the platinum-group metals and of gold. O. E. Zvyagintsev, S. K. Shabarin, V. A. Vorob'eva and A. P. Bochkareva. *Trudy Vsesoyuz. Konferentsii Anal. Khim., Akad. Nauk S. S. S. R.* 1, 375-83 (1939); *Khim. Referat. Zhur.* 1940, No. 2, 63-4; cf. *C. A.* 34, 1860^{6}.—The test-tube method was used for detg. Ir and Rh in ores. A large excess in the charge of Ag (5 times the ordinary amt.) and of Pt (exceeding 5-10 times the content of Ir) transforms nearly all Ir into the metallic state. A rapid method for detg. Au in ores has been developed. The method is applicable to field conditions. Pulverize the sample to 65 mesh, treat in a porcelain dish with 60-70 cc. of HNO_3 (d. 1.4) (avoiding a violent evolution of N oxides), dil. with 100 cc. of water, filter, wash the residue with hot water and proceed as in the analysis of quartz and oxidized ores. For the analysis of quartz and ocher ore place 10-50 g. of the ore in a porcelain dish or mortar, add gradually an I soln. (I_2 2 g. + KI 4 g. in 100 cc. of water) until the brown color of the excess I_2 persists, let stand overnight or grind in the mortar after every 5-10 min. in the course of 60 min., filter the soln. and wash the ppt. until the wash water is clear. All Au is dissolved as AuI_3. Add to the Au soln. 40 g. of metallic Hg for each 100 cc. of liquid and shake for 60 min. Decant the soln. and wash the Au amalgam with water by decantation. Transfer the amalgam to a porcelain dish and dissolve the Hg in HNO_3 (1:2) with careful heating. Decant the soln. and wash the Au by decantation. Dissolve Au in 1 drop of aqua regia and evap. excess on a water bath. Dissolve the $AuCl_3$ in 1 cc. of water, place 0.1 cc. of the soln. on a filter paper satd. with $Hg(NO_3)_2$ soln. and compare the dark spot of reduced Au with the color scale. The following method is proposed for detg. Au in cyanide solns: To 100 cc. of the soln. add 5-10 cc. of HNO_3, heat to boiling, during boiling add 1.0-1.5 g. of $KClO_3$ in the course of 15-20 min., boil for 30 min., cool, neutralize with OH to a weakly acid reaction to litmus and det. Au by the drop or the volumetric method. In the volumetric method dil. the soln. with water to 50 cc., add 1 cc. of KHF_2 or $NaHF_2$ buffer soln. satd. in the cold and 2 cc. of *o*-dianisidine and titrate from the microburet with hydroquinone until the reddish color disappears. A min. of 2 mg. of Au in 1 l. of the soln. can be detd. Free Cl and Br interfere with the detn. because they also produce a pink color with *o*-dianisidine.

W. R. Henn

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

PROCESSES AND PROPERTIES INDEX

5

*On the Pressing of Platinum [Powders] and Similar Metals. O. E. Zvyagintsev. (*Sbornik Nauch. Trudov Moskov. Inst. Tsvet. Metallov Zolota*, 1940, (9), 420–430).—[In Russian]. Experiments were carried out on the pressing of platinum powders and subsequent annealing at 1000° C. for 1½ hr. The results show that platinum obtained in this way has a structure, density, and toughness superior to that of platinum obtained from molten metal.—N. A.

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6

Z. him - Obshch - Khim ,

Compounds of manganese salts with pyridine and ethylenediamine. O. E. Zvyagintsev and M. Chkoniya. *J. Gen. Chem.* (U. S. S. R.) 10, 1047-52 (1940); cf. *C. A.* 33, 2902³.—New compds. of Mn with C_5H_5N (I) and $(CH_2NH_2)_2$ (II) were obtained. $Mn(NO_3)_2.8II.4HNO_3.4H_2O$ (III) is obtained by treating a concd. $Mn(NO_3)_2$ soln. with strong HNO_3, adding II to slightly acid reaction and crystg. in a desiccator for a few days; $MnC_2O_4.10II.4C_2O_4H_2$ (IV), by boiling a soln. of MnC_2O_4 in concd. oxalic acid, filtering, adding to the filtrate EtOH and II and crystg. By similar methods there were prepd.: $MnCl_2.I.2HCl.H_2O$ (V); 5-$MnF_2.3II.3HF$ (VI); $Mn(OAc)_2.II.HOAc$ (VIII); 2$MnF_2.2NH_4F.I$ (VII); III and IV are colorless crystals, V, VI, VII and VIII are pale-rose crystals. All are insol. in EtOH Et$_2$O and benzene. S. Kaganoff

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a-2

Dokl. AN SSSR

Theory of formation of vein gold deposits. O. E. Zvjagintsev and I. A. Pavlenko (Compt. rend. Acad. Sci. U.R.S.S., 1940, 28, 447—451).—The velocity of dissolution of Au in solutions of Na_2S saturated with H_2S increases to a max. with increasing concn. and then decreases to a very low val. at high concn., in accordance with the view that the effective agent is NaHS, whereas the very conc. solutions contain mainly Na_2S. The dissolution is facilitated by the presence of finely ground quartz or pyrites but is hindered by carbonates. The solubility increases markedly with rising temp. over the range 70—300°, so that the pptn. of Au does not require the presence of any particular mineral but is simply the result of cooling.

F. J. G.

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0

PROCESSES AND PROPERTIES INDEX

CR

8

New mineral species of the platinum group. O. E. Zvyagintsev. *Compt. rend. acad. sci. U. R. S. S.* 26, 785-91(1940)(in English).—A small quantity of placer Pt was found near the Norilsk Cu-Ni sulfide deposit. Considerable regular cubic crystals were present, some drawn out into rectangular prisms, others flattened. The sp. gr. was widely variable owing to inclusions. The Norilsk Pt differs from the Ural Pt by having high Pd content, much Fe and some Ni and Ag; Au is not a component of the alloy but is present in the deposit. The name *norilskite* is proposed for the end member which shows Pt 35.50, Fe 25.30, Ni 25.04, Pd 3.57, Cu 9.28, 0.71 and insol. 0.40%. Ir and Rh were not discovered in any of the grains. It differs from the palladic Pt of S. Africa by its high Fe content. The geologic features, notably the presence of coal beds older than the deposits, permit the assumption that the metallic grains crystd. from a gaseous medium which may have consisted of carbonyls of the various metals formed at the contacts between sulfide and coal deposits.

D. W. Pearce

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Crystallo-alcoholates of manganous chloride. O. E. Zvyagintsev and A. Z. Chkhenkeli. *J. Gen. Chem.*

Zhur.-Obshch. Khim

AND L. A. QUILL

(U. S. S. R.) 11, 701-803(1941).—The authors investigated the formation of crystallo-alcoholates of $MnCl_2$ with ROH, from MeOH to AmOH. $MnCl_2$ was dried at 650° in dry HCl. The alcs. were dried by prolonged standing over calcined Na_2SO_4 or K_2CO_3, then distd. from Na or Ca. Benzene or petr. ether was used to aid the sepn. of the cryst. products, which were handled under anhyd. conditions. The prepn. of $MnCl_2.xMeOH$ was carried out by soln. of a known amt. of $MnCl_2$ in a sufficient amt. of anhyd. MeOH, followed by crystn. by: (a) accelerated pptn. from concd. cooled soln., (b) heating of the soln. followed by rapid cooling, (c) slow removal of excess MeOH in a desiccator followed by cooling, (d) removal of MeOH as above, followed by addn. of benzene, and (e) subjection of the mother liquors from the above expts. to partial removal of MeOH followed by cooling. The products obtained depended upon the method used for isolation, and only homogeneous products were analyzed and studied. Three compds. were definitely established: *$MnCl_2.2MeOH$*, in 2 forms, either needles frequently twinned, *n* 1.582-1.580, monoclinic, extinction angle 38°, pink; or plates stretched into needles, *n* 1.561, rhombic, straight extinction, weak birefringence, pink; *$MnCl_2.3MeOH$*, elongated prisms, rhombic, *n* 1.563-1.574, straight extinction, interference figure plainly biaxial with a wide angle of the optical axes, weakly pink; and *$MnCl_2.4MeOH$*, prismatic plates, monoclinic, *n* 1.532, inclined extinction, biaxial, colorless. Compds. with EtOH were prepd. in the same manner; 2 compds. were established: *$MnCl_2.2EtOH$*, cryst. grains of irregular shape, monoclinic, *n* 1.602-1.551, inclined extinction, pink; *$MnCl_2.3EtOH$*, prismatic plates, monoclinic, inclined extinction with high birefringence, *n* 1.602-1.591, pink. Two compds. with PrOH were prepd. A satd. soln. of $MnCl_2$ in PrOH was heated on a water bath for 4 hrs. under reflux, cooled in ice, placed in a desiccator with $CaCl_2$, followed by addn. of petr. ether, and the small amt. of pptd. *$MnCl_2.PrOH$* was filtered off: thin prisms, monoclinic, *n* 1.593-1.580, inclined extinction, light pink. The same compd. was obtained on prolonged standing in a desiccator over H_2SO_4 of 21 g. $MnCl_2$ in 150 cc. PrOH. $MnCl_2$ (10.5 g.) in 75 cc. cool PrOH was kept in a desiccator with $CaCl_2$, then with H_2SO_4, for several months, yielding a ppt. of *$2MnCl_2.3PrOH$*, which was filtered by squeezing between filter papers, followed by washing with Et_2O; large prisms, monoclinic, inclined extinction, but some crystals have straight extinction, biaxial interference figure, *n* 1.580-1.583, light pink. Two compds. with BuOH were prepd. A satd. soln. of $MnCl_2$ in BuOH prepd. by boiling under reflux was cooled, kept in a $CaCl_2$ desiccator, then in a H_2SO_4 desiccator; after 3 months the mass was treated with petr. ether, pptg. *$4MnCl_2.3BuOH$*, small grains, monoclinic, *n* 1.572-1.589, inclined extinction,

6

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

colorless. $MnCl_2$ (10.6 g.) in 60 cc. cold BuOH was kept
in a $CaCl_2$ desiccator for a month, then for 4 months in a
H_2SO_4 desiccator, yielding *$MnCl_2.2BuOH$*, plates or needles
n 1.580-1.577, monoclinic, inclined extinction. Two
compds. with AmOH were prepd. $MnCl_2$ (12 g.) in 30 cc.
AmOH in the cold yielded on standing *$MnCl_2.2AmOH$*,
bluish cryst. aggregates, *n* 1.502 1.500, monoclinic with
inclined extinction; the mother liquor treated with petr.
ether, filtered, the petr. ether distd. from the filtrate and
the residue placed in a desiccator for 3 months yielded, on
washing with Et_2O, *$MnCl_2.3AmOH$*, irregular grains, *n*
1.494-1.490, rhombic with straight extinction. Two
compds. were prepd. with *d-sec*-AmOH. $MnCl_2$ (21 g.)
in 240 cc. cold *d-sec*-AmOH, filtered and let stand in a
desiccator for 8 months, pptd. *$MnCl_2.3C_5H_{11}OH$*, rhombic,
n 1.514, biaxial crystals with straight extinction. $MnCl_2$
(9 g.) in 40 g. *d-sec*-AmOH on prolonged standing de-
posited *$MnCl_2.3C_5H_{11}OH$*, after removal of *$MnCl_2.2$-
$C_5H_{11}OH$* which pptd. in about 1 month; *$MnCl_2.3C_5$-
$H_{11}OH$*, rhombic, *n* 1.514-511, straight extinction. All
of these compds. are poorly stable and decomp. either at
room temp. or at slightly elevated temp.; all are de-
compd. by H_2O.

G. M. Kosolapoff

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

CA

Sodium-tungsten bronzes. A. A. Kalandiya and O. K. [illegible] *Gen. Chem.* (U.S.S.R.) 11, 1181-6 (1941). See *C.A.* 37, 6478^9. G. M. Kosolapoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

Chem. Inst. Georgian [illegible]

[illegible] compds., [illegible] of them new, were prepd. from anhyd. $CoCl_2$, $CoBr_2$, CoI_2, and anhyd. MeOH and EtOH by two methods of slow crystn. in a desiccator, (I) from a satd. soln. in the alc. at low temp. (down to −4°) for 25-30 days, (II) from a supersatd. soln. obtained by reducing the vol. of the satd. soln. to $^1/_3$; method I gives compds. richer in alc. The compds., method of prepn., color, d., n_D, and crystal system, are listed: compds. of $CoCl_2$ with (1) 3 MeOH, II, purple-blue, 1.55, 1.682 ± 0.005, monoclinic; (2) 4 MeOH (new), I, purple-blue, 1.39, 1.719 ± 0.005, cubic; (3) 3 EtOH, I, blue-purplish, 1.05, 1.703 ± 0.005, rhombic; (4) 2 EtOH, I, blue-pinkish, 1.42, 1.702 ± 0.005, rhombic; (5) 1 EtOH (new), from the mother liquor of the foregoing, blue-purplish, 1.70, 1.702 ± 0.005, rhombic; compds. of $CoBr_2$ with: (6) 4 MeOH (new), I, light blue, 1.41, 1.700 ± 0.005, triclinic; (7) 2 MeOH, from the mother liquor of the foregoing, purplish-blue, 2.09, 1.70 ± 0.05, rhombic; (8) 3 MeOH, II, purplish-blue, 1.76, 1.65 ± 0.05, rhombic; (9) 3 EtOH, I, azure blue, 1.07, 1.61 ± 0.05, triclinic; (10) 1 EtOH (new), II, sky blue, 2.50, 1.72 ± 0.05, cubic; (11) 2 EtOH, from the mother liquor of the foregoing, dark blue, 1.60, 1.73 ± 0.05, not detd.; compds. of CoI_2 with (12) 6 MeOH (α) (new), I, amber, 1.63, 1.729 ± 0.005, hexagonal; (13) 6 MeOH (β) (new), from the mother liquor of the foregoing, 14-16 days, yellow-brown, 1.68, 1.73 ± 0.05, quadratic; (14) 5 MeOH (new), II, dark brown, 1.74, 1.73 ± 0.05 hexagonal. CoI_2 ethylates could not be obtained, as the soln. of CoI_2 in EtOH is viscous and does not crystallize on standing or cooling. All the above compds. decomp. on heating and in humid air

exchange alc. for H_2O; are insol. in ether and in ligroin, very sparingly sol. in benzene (decomp.); alc. solns. show a good elec. cond., better for the methylates than for the ethylates. The glass electrode shows a weak acidic pH, the weaker the greater the no. of alc. mols. bound, possibly indicating repulsion of the H^+ of alc. by Co^{++}.

N. Thon

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

Nickel and cobalt in the manganese ores of Chiatura (Georgia). O. B. Zvjagintsev (*Compt. rend. Acad. Sci. U.R.S.S.*, 1942, [illegible], 180—181).—Recent analyses of the Mn ores of the Chiatura district having an accuracy of 0·0005% of the sample wt. show that both oxide and carbonate ores contain nearly const. amounts of Ni and Co slightly >, and in the ratio of, their Clarke nos. The concn. is independent of the type of ore and the Mn content. J. O'M-B.

Dokl-AN SSSR

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0

PROCESSES AND PROPERTIES INDEX

M

2

Solid Solutions in Native Minerals of the Platinum Group. O. E. Zvyagintsev (*Izvest. Sekt. Fiziko-Khim. Anal.*, 1943, 16, (1), 220-228).—[In Russian]. Native platinum of the Norilsky deposits is a solid solution of palladium (3·57%), copper (9·5%), iron (25·3%), and nickel (25·6%) in platinum. Minerals containing osmium and iridium are solid solutions. Iridium can dissolve up to 32% osmium; at higher concentrations the osmium lattice prevails.—D. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ZVYAGINTSEV, Orest Yevgenyevich

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

"Energy Coefficients of crystalline lattices (VEC) and the Structure of Binary Metallic Alloys," Compt. Rend. Acad. Sci. URSS, 38, 28-32, 1943 -- in English) D.U. AN SSR

The valency energy coeffs. (VEC) of the ions of the components furnish a very convenient means of comparing ions of different valencies and revealing some regularities in the formation of intermetallic phases of binary systems. Inadequate accuracy in calculating the VEC and lack of clearness in some of the determinations of the valency of metals restrict present consideration to the qual. regularity.

SO: C.A. Vol. 38, Jan, 10--Jun 20, 44

PROCESSES AND PROPERTIES INDEX

***Interdiffusion of Platinum and Iridium in the Solid State.** O. E. Zvyagintsev, A. G. Raikhshtadt, and M. A. Vladimirova (*Zhur. Priklad. Khim.*, 1944, 17, 22-30; *C. Abs.*, 1945, 39, 1126).—[In Russian.] Platinum-iridium alloys, containing 10, 25, 35, and 50% of iridium, were prepared from powdered components, and interdiffusion therein was studied at 1300, 1400, and 1500° C. Very rapid diffusion occurs; after 10 hr. at 1300° C. all alloys studied showed the presence of solid solutions. The moment of the formation of homogeneous solid solution was noted by the appearance of a max. in the curves of specific electrical conductivity, and by microscopic and X-ray examination. The diffusion of iridium into platinum is slower than that of platinum into iridium. The ready formation of solid solutions permits the use of powder-metallurgical methods of manufacture at fairly low temperatures.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

Composition of intermetallic compounds as determined from ionisation potentials of their components. O. E. Zvjagintsev. (*Compt. rend. Acad. Sci. U.R.S.S.*, 1944, 43, 159—162).—It is suggested that the possible proportions of the components in binary intermetallic compounds are in the same ratio as the vals. of J/V, where J = ionisation potential and V = at. vol. The possible proportions determined by this rule are further restricted by factors such as ionic stability and the necessity of arranging the complex in a stable cryst. lattice. Results are tabulated for the systems Hg–Na, Hg–K, Cd–Mg, Cu–Au, and Au–Mn, and comparison is made with observation. H. J. W.

Dokl-AN SSSR

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0

2

The composition of intermetallic compounds and the ionization potential of their components. O. E. Zvyagintsev. *Doklady Akad. Nauk S.S.S.R.* 61, 103-7(1948).—The theory is advanced that stable binary intermetallic compds. (BIC) satisfy the condition that the value of J/nV is equal for the 2 components, where J is the ionization potential, n the at. No. and V the at. vol. In order to predict successfully observed BIC, two addnl. conditions must be imposed, namely, that improbable ions, e.g., triply ionized Mg, shall be excluded from consideration and, secondly, that the requirements of crystal chemistry, e.g., exclusion of atomic ratios greater than 8, be fulfilled. The theory is shown to predict successfully (1) nearly all the BIC observed in the systems Hg-Na, Hg-K, Cd-Mg, Au-Mn, Au-Cu and (2) the nonexistence of BIC of Ag with Tl. The theory is capable of further refinement by taking account of the effect of the change in at. vol. with temp. and the effect of interaction on ionization potentials.

L. W. Perry

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0

9

Zvyagintsev, O. E.: The Refining of Gold, Silver, and Metals of the Platinum Group. (In Russian.) Moscow: Metallurgizdat. 1945. 214 pp.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

2

Applied chemistry in the Academy of Sciences of U.S.S.R. O. E. Zvyagintsev and A. E. Porai-Koshits. *J. Applied* Chem. (U.S.S.R.) 17, 101-11(1944).—Review.
G. M. Kosolapoff

Zhun-Paik-Khiun

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 "CIA-RDP86-00513R002065720009-0"

CA

13

Thirty years of Soviet applied chemistry. O. E. Zvyagintsev. *Zhur. Priklad. Khim.* (J. Gen. Chem.) 20, 1045-52(1947).

N. Thon

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-4

ZVYAGINTSEV, O. YE.

May 48

SR/Chemistry - Analysis, Organic
Chemistry - Analysis, Quantitative

"New Methods for Organic Analyses," O. Ye. Zvyagint-
ev, $\frac{1}{4}$ P

"Priroda" No 5

Describes M. O. Karshun's method whereby oxygen, hydrogen, carbon, halogen, <u>or</u> oxygen, hydrogen, carbon and sulfur can be determined in one step. Substance to be analyzed is burnt in rapid stream of oxygen (35 - 50 cc/min). Products pass through special metallic silver absorbent which retains

~~5/49T15~~
May 48

SR/Chemistry - Analysis, Organic (Contd)

sulfur above 750° and halogens above 450°; then enter usual absorbents for water and carbon dioxide.

5/49T15

ZVYAGINTSEV, O. YE.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

USSR/Academy of Sciences May 48
Bibliography

"Review of 'Science in Georgia for Twenty-Five Years (1921-1946),' a Bibliographical Index," O. Ye. Zvyagintsev, ½ p

"Zhur Prikl~~ad~~ Khim~~ii~~" Vol $\overset{21}{\text{XXI}}$, No 5

Lists published work of Georgian scientists. Gives Georgian equivalents of Russian technical terms. Published in Tbilisi, 1947.

[redacted] 11/49T2

USSR/Physics Oct 48
High Temperature Research
Furnaces

"New Method of Experimental Work at High Temperatures," O. Ye. Zvyagintsev, 1 p

"Priroda" No 10

Describes difficulties to be overcome when conducting experiments at temperatures of 2,000 to 2,500°C. Refers to article by Ya. I. Ol'shanskiy ("Dok Ak Nauk SSSR" Vol LIX, No 6) describing method for high-temperature research without use of crucibles. Zvyagintsev suggests that Ol'shanskiy's method will be widely adopted by Soviet industry.

[redacted] 9/49T103

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

CA

Ernest Khristianovich Fritsman. O. E. Zvyagintsev. *Izvest. Sektora Platiny i Drugikh Blagorodnykh Metal., Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.* No. 21, 12-18(1948).—An obituary. A list of 52 publications by Fritsman is appended. M. Hosch

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

CA

4

Rational phase analysis of slimes from nickel electrolysis. O. E. Zvyagintsev and L. D. Plaksina. *Izvest. Sektora Platiny i Drugikh Blagorodnykh Metal., Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.* No. 22, 93-110 (1948).—The object of this investigation was to det. the distribution of Ni in electrolytic slimes among free metal, sulfide, sulfate, and oxide. The dried and ground slime contained Fe 3.02, Cu 8.43, Ni 30.54, Pb 0.033, Ca 1.33, (Mg trace, Si 2.23, sulfidic S 3.27, and sulfate S 0.97%. A 0.1-g. sample was treated with 150 ml. of H_2O to remove $NiSO_4$. The residue was treated with 100 ml. of 2% $CuSO_4$ soln. at boiling temp. lasting 4 hrs., and this treatment was repeated until the filtrate was free of Ni. In this step all the metallic Ni and 17% of NiS were removed. The residue was boiled twice for 1 hr. with a mixt. of glacial AcOH 25, H_2O 120, and H_2O_2 5 ml. This removes the rest of the NiS. The residue was treated with aqua regia to dissolve oxidic Ni. Details of procedure are given. M. Hosch

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O. YE.

PA 47/49T101

USSR/Petroleum
Prospecting
Gas Deposits

Jan 49

"New Hydrochemical Method of Determining Petroleum and Gas Deposits," O. Ye. Zvyagintsev, 1 p

"Priroda" No 1

According to the analysis of M. S. Kaveyev, Sci Worker, Kazan Affiliate Geol Inst, subsurface waters near oil deposits change their usual composition. For example, waters of the Tatar ASSR usually have a pH equal to 7, and ratio of magnesium to calcium is about one. In oil-bearing regions, this ratio rises to 1.8, 2.5 and higher. The pH

47/49T101

USSR/Petroleum (Contd) Jan 49

of the water also changes in one direction or the other.

47/49T101

PA 37/49T5

ZVYAGINTSEV, O. E.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

USSR/Chemistry - Potassium Oxides Feb 49
Chemistry - Alkali Metal Oxides

"The New Potassium Oxide KO_3," O. E. Zvyagintsev, $\frac{1}{4}$ p

"Priroda" No 2

Describes how I. A. Kazarnovskiy, Corr Mem, Acad Sci USSR, discovered new oxide of potassium having formula KO_3.

37/49T5

ZVYAGINTSEV O. YE.

Mar 49

USSR/Metals
Metallurgy, Nonferrous

"Review of 'Russian Achievements in Nonferrous Metallurgy,' by A. I. Belyayev, V. A. Vanyukov, V. V. Danilevskiy, et al," O. Ye. Zvyagintsev, 1 p

"Priroda" No 3

Favorable review of subject collection of articles, read by authors at Conf on Hist of Eng, organized by Acad Sci USSR and Moscow Inst of Nonferrous Metals and Gold imeni M. I. Kalinin, 16 Nov 44. Includes following articles:

44/49T90

Mar 49

USSR/Metals (Contd)

V. V. Danilevskiy's "Discovery of Gold in the Urals," V. A. Vanyukov's "Role of Russian Engineers in Developing the Metallurgy of Copper," and A. I. Belyayev's "Role of Russian Engineers in Developing the Metallurgy of Aluminum."

44/49T90

ZVYAGINTSEV, O.

PA 67/49T102

USSR/Metals - Manganese
Alloys

Aug 49

"Recent Publications on Manganese Alloys," O. Zvyagintsev, ½ p

"Priroda" No 8

First volume of the "Works of the Institute of Metals and Mining," Acad Sci Georgian SSR, contains interesting articles on manganese and its alloys. F. N. Tabadze studies the manganese-carbon system by thermic analysis and establishes the existence of three manganese carbides: Mn_3C, Mn_4C and Mn_7C_3. Another article by Tabadze and

USSR/Metals - Manganese (Contd)

Aug 49

M. V. Batiyev studies the chromium-manganese system and solid chromium solutions in manganese.

67/49T102

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

USSR/Chemistry - Platinum Compounds Dec 49
Complex Compounds

"Crystalline Structure of L. A. Chugayev's Salts," O. Zvyagintsev, $\frac{1}{4}$ p

"Priroda" No 12

In 1915 L. A. Chugayev, professor at Leningrad U, obtained complex ammonium compound of tetravalent platinum with five ammonia molecules and at same time confirmed correctness of theory of complex compounds. Reports results of recent studies by G. B. Bokiya and L. A. Popova ("Doklady Akademii Nauk SSSR"

155T13

USSR/Chemistry - Platinum Compounds Dec 49
(Contd)

Vol LXVII, No 1) on crystalline structure of Chugayev's chlorides. Studies conducted with aid of X-rays. Presents diagram of crystalline structure of salts studied.

155T13

155T13

ZVYAGINTSEV, O.

ZVYAGINTSEV, O.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0

USSR/Chemistry - Laboratory Organization Aug 49
Technology

"Review of A. V. Vinogradov's 'Organization of Plant Laboratories in the Chemical Industry,'" O. Zvyagintsev, 1¼ pp

"Zhur Prik Khim" Vol XXII, No 8

Stresses importance of proper laboratory techniques from the production standpoint and in relation to the training of new student workers, and considers several phases of the industry. Published by Goskhimizdat, 1948, 192 pp.

67/49T59

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0

21779 ZUYAGINTSEV, O. YE. Pamyati zamechatel'nogo [illegible] Nikolaya Fedorovicha Fedorova. (1869 - 1945) Izvestiya Sektora platiny i drugikh blagorod. metallov (In-t obshchey i neorgan. khimii im. Kurnakova), vyp. 23, 1949, s. 5-8, s. portr.

SO: Letopis' Zhurnal'nykh Statey, No. 29, Moskva, 1949

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

6

Chloridation of platinum metals with ammonium chloride. O. E. Zvyagintsev and L. D. Plaksina. *Izvest. Sektora Platiny i Drugikh Blagorod. Metal. Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.* No. 24, 121-8(1949).—Pt and Pd were chloridated with NH_4Cl 1:2 at 250-400°. The reaction is more effective when metals are finely divided and in the presence of Fe and Cu but not Ni. Excess NH_4Cl gave no advantage. Chloridation dropped sharply at temps. above 450°. Pd is chloridized more easily than Pt.

M. Hosch

ZVYAGINTSEV, O. Ye.

12 to 15 May 1948, Moscow, first conference was held on history of Soviet chemistry, convened by Commission on the History of Chemistry, Acad Sci USSR. Many papers were presented by (ostensibly) members of this Commission.

"Studies of Platinum Group Metals in the USSR." (Inst Gen and Inorgan Chem imeni N.S. Kurnakov, Acad Sci USSR).

"Materials on the History of Soviet Chemical Science," published by Acad Sci USSR in Moscow-Leningrad 1950. #283498.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

Ruthenium geochemistry. O. E. Zvyagintsev. Izvest. Sektora Platiny i Drug. Blagorod. Metal., Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R. 25, 120-32 (1950). The geochem. history of Ru cannot at present be traced from beginning to end. Complete data for such work are not as yet available. Its locations in the earth crust, its distribution, and its position among the Pt metals group are defined in general. The results are summarized in a diagram. W. M. Sternberg

Ceo

ZVYAGINTSEV, O. Ye.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

"Works on Chemistry in Publications of Soviet Institutes and Universities," Zhurnal Prikladnoy Khimii, Vol. 24, No. 12, 1951, pp 1326-1328; (W-22576, 2 May 52)

(ARTICLES LISTED with comments)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYA

Metal ②

Chemical Abstracts
Vol. 48 No. 5
Mar. 10, 1954
General and Physical Chemistry

Vladimir Aleksandrovich Nemilov. O. E. Zvyagintsev. *Izvest. Sektora Platiny i Drug. Blagorod. Metal., Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.* 26, 7-16 (1951).—A detailed chronological listing of his investigations. His work on the ternary alloy systems of the precious metals is emphasized.

I. R. Behrman

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

Platinum

L. A. Chugayev's chloropentaminoplatino-chloroplatinate. Izv. Sekt. plat. i blag. met. no 26, '51.

Monthly List of Russian Accessions, Library of Congress, May 1952. Unclassified.

ZVYAGINTSEV, O. Ye., PROF

PA 174T14

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

USSR/Chemistry - Silicon Jan 51

"Silicon Monoxide," Prof O. Ye. Zvyagintsev

"Priroda" Vol XL, No 1, p 52

Reviews USSR work on SiO and states M. S. Beletskiy and M. B. Rappoport, "Dok Ak Nauk SSSR" Vol LXXII, No 4, 699, 1950, have confirmed roentgenologically the existence of SiO. Points out importance of this compd in electrothermic processes and states 22% of silicon is lost in form of SiO in production of Al-Si alloys.

LC 174T14

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYA

3

① Geo

Meteorological Abst.
Vol. 4 No. 3
March 1953
Climatology and Bioclimatology

4.3-257

Zviagintsev, O. E., Radioaktivnost' i teplovoi rezhim zemli. [Radioactivity and heat 551.583.7:539.16
regime of the earth.] *Priroda*, Moscow, 40(12):44, Dec. 1951. DWB—At present the solar
energy absorbed by the earth amounts to 1.9×10^{18} cal/hr and the energy from radioactive
elements amounts to 0.47×10^{18} cal/hr. In past geologic ages the energy derived from radio-
active decay was considerably greater and can be calculated by the equation $Q_0 = Q_t \times e\lambda^t$,
where Q_t = quantity of heat of radioactive origin t years ago; Q_0 = quantity of heat produced
by any radioactive element at present; λ = condition of radioactive decay in cal/hr. Data
on quantity of heat in cal/hr produced by radioactive elements at present and in the past are
given in a table. *Subject Headings:* 1. Geological climates 2. Radioactivity of the earth.—
I.L.D.

TRANS - 2524467, 30 Apr. 54

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.

Chemistry - Bibliography

Works on chemistry published by scientific-research institutes and higher technical schools
Zhur. prikl. khim. 25 no. 4 (1952).

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

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O. YE.

Grinberg, Aleksandr Abramovich, 1898-

"Introduction to the chemistry of complex compounds." A. A. Grinberg. Reviewed by O. Ye Zvyagintsev. Zhur. prikl. khim., 25, no. 7, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 1952 1953, Uncl.

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.

USSR/Czechoslovakia, Chemistry - Bibliography Aug 52

"Khimiya" (Chemistry), Russian-Language Periodical of the Czechoslovak Central Chemical and Polarographic Institutes, Prague," O. Zvyagintsev

"Zhur Prik Khim" Vol 25, No 8, p 903

Reference is made to "Khimiya," 1st published in Prague in mid-1951, to create intimate cooperation between Czech scientists and Soviet scholars. The periodical is to be published 6 times yearly and comprise 1,000 pp per yr. Vol I, No 1 and 2

228T14

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appeared in 1951, with the latter including a bibliography, for 1950, of work done in polarography throughout the world. Most of the articles deal with org chemistry. Some articles treat of analytical chemistry, and others are in the field of polarography. (Czechoslovakia, as the birthplace of polarography, is carrying on extensive work in that field, according to Zvyagintsev.) An original article by J. Heyrovsky and M. Matias, "The Action of Surface Films on the Polarization of Capillary Electrodes," is mentioned.

228T14

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

1. ZVYAGINTSEV, O. Ya.

2. USSR (600)

4. Metallography

7. Metallic state of an element. (A. I. Gorbov's priority in concepts of the nature of metals). Zhur. prikl. khim. 25, No. 9, 1952.

9. <u>Monthly List of Russian Accessions</u>, Library of Congress, January 1953. Unclassified.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

1. ZVYAGINTSEV, O. Ye.

2. USSR (600)

4. Chemistry - Bibliography

7. Transactions of research institutes. Reviewed by O. Ye. Zvyagintsev. Zhur. prikl. khim. 25, No. 12, 1952.

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

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ARBUZOV, A.Ye., akademik; KAZANSKIY, B.A., akademik; PETROV, A.D., chlen-korrespondent AN SSSR; NIKITIN, N.I., chlen-korrespondent AN SSSR; FIGUROVSKIY, N.A., professor, otvetstvennyy redaktor; POGODIN, S.A., professor; ZVYAGINTSEV, O.Ye., professor; YEVTEYEVA, P.M., uchenyy sekretar'.

[Materials on the history of Soviet chemistry; reports given at the 2nd All-Union Conference on the History of Soviet Chemistry, 21-26 April 1951] Materialy po istorii otechestvennoi khimii; sbornik dokladov na vtorom Vsesoiuznom soveshchanii po istorii otechestvennoi khimii, 21-26 aprelia 1951 g. Moskva, Izd-vo Akademii nauk SSSR, 1953. 318 p. (MLRA 7:4)
(Chemistry--History)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.

Bibliography. Zhur.prikl.khim. no.11:1231-1232 N '53. (MLRA 6:11)
(Chemistry--Periodicals) (Chemistry, Technical--Periodicals)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O. [reviewer].

"Transactions of the Voronezh State University, vol. 23. Collection of papers of the Department of Chemistry." "Transactions of the All-Union Institute of the Soda Industry, vol. 6." Reviewed by O.Zviagintsev. Zhur.prikl.khim. 26 no.9:1003-1004 S '53. (MLRA 6:10)

(Chemistry) (Soda industry)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye. [reviewer]; VOL'FKOVICH, S.I.; YEGOROV, A.P.; EPSHTEYN, D.A. [authors].

"General chemical technology." S.I.Vol'fkovich, A.P.Egorov, D.A.Epshtein. Reviewed by O.E.Zviagintsev. Zhur.prikl.khim. 26 no.12:1323-1324 D '53. (MLRA 6:11)

(Chemistry, Technical) (Vol'fkovich, Semen Isaakovich) (Egorov, A.P.) (Epshtein, D.A.)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

1. ZVYAGINTSEV, O. YE, Prof.

2. USSR 600

4. Rocks, Crystalline and Metamorphic

7. Recrystallization of rocks, Briroda, 42, No. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye.

[redacted]

Transactions of scientific research institutes. Zhur.prikl.khim.
27 no.2:227-228 F '54. (MLRA 7:2)
(Technology) (Science)

ZVYAGINTSEV, O. Ye.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

AID - P-103

Subject : USSR/Chemistry

Card : 1/1

Authors : Dobryanskiy, A. F., and Zvyagintsev, O. Ye.

Title : Bibliography

Periodical : Zhur. Prikl. Khim. 27, no. 4, 466-468, 1954

Abstract : A book *Chemical Refining of Petroleum* by R. Goldstein (translated into Russian by N. S. Dabagov) is reviewed. Some articles from *Transactions of the Scientific Research Institute of Glass*, no. 32, 1953. *Transactions of the Moscow Institute of Fine Chemical Technology im. M. V. Lomonosov*, no. 3, 1952, and *Transactions of the Khar'kov Polytechnic Institute im. V. I. Lenin*. Vol. 1, Chemical-technological Series, no. 1, 1952 are listed.

Institution : None

Submitted : No date

ZVYAGINTSEV, O.E.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

4

✓ I. Ya. Bashilov, K. A. Bol'shakov, O. E. Zvyagintsev, and N. P. Sazhin. J. Appl. Chem. U.S.S.R. [illegible] (1953)(Engl. translation). See C.A. 48, 11125d.

B. M. R.

②

[illegible]

ZVYAGINTSEV, O. Ye.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

"The Chemistry of Ruthenium," a paper presented at the Atoms for Peace Conference, Geneva, Switzerland, 1955

ZVYAGINTSEV, O.Ye.

[Chemistry of ruthenium] Khimiia ruteniia. Moskva, 1955.
4 p. (MIRA 14:6)

(Ruthenium)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye.

I.V. Avdeev's research on gold nuggets and the metallurgy of gold. Trudy Inst.ist.est.i tekh. vol.6:152-159 '55. (MLRA 9:5)
(Avdeev, Ivan Vasil'evich, d. 1865) (Gold--Metallurgy)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye.

History of Ural platinum. Trudy Inst.ist.est.i tekh. vol.6: 160-204 '55. (MLRA 9:5)
(Ural Mountain region--Platinum)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYA[illegible]

AID P - 1571

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 1/21

Authors : Vol'fkovich, S. I., Zvyagintsev, O. Ye., and Yegorova, Ye. N.

Title : Yuriy Vitaliyevich Marachevskiy
On the occasion of his 60th birthday and the 35th anniversary of his scientific and teaching activities

Periodical : Zhur. prik. khim., $\overset{28}{\underline{24}}$, no.1, 3-6, 1955

Abstract : Biographic sketch with photograph.

Institution: None

Submitted : No date

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

2

AID P - 2273

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 18/19

Author : Zvyagintsev, O. Ye.

Title : Zelikman, A. N., G. V. Samsonov, and O. Ye. Kreyn
Metallurgiya redkikh metallov (Metallurgy of Rare Metals)
Moscow, 1954. (Book review)

Periodical: Zhur. prikl. khim., 28, no.2, 226-227, 1955

Abstract : Critical review. According to the reviewer, Part I of the book gives general information on metallurgy, rare metals and the rare metals industry. Part II is devoted to the description of tungsten, molybdenum, tantalum, niobium, titanium, and zirconium.

Institution: None

Submitted : No date

ZVYAGINTSEV, O. YE.

AID P - 2274

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 19/19

Authors : Zvyagintsev, O. Ye.

Title : Tananayev, I. V., S. A. Pogodin, Ye. Ya. Rode, V. G. Tronev, and I. B. Mizetskaya, eds., Khimiya redkikh elementov. Vypusk I (Chemistry of Rare Elements. Issue I) Academy of Sciences, USSR. 1954. (Book review)

Periodical: Zhur. prikl. khim., 28, no.2, 228, 1955

Abstract : The reviewer states that the book consists of 13 papers on rare elements. Titles of some of the papers are given.

Institution: Academy of Sciences of the U.S.S.R.

Submitted : Published in 1954 (Moscow)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye.; VALYASHKO, M.G.

Fedor Aleksandrovich Toropov; 1884-1953. Zhur.prikl.khim. 28 no.12: 1345-1346 D '55. (MLRA 9:3)
(Toropov, Fedor Aleksandrovich, 1884-1953)

ZVYAGINTSEV, O.Ye.; SUDARIKOV, B.N.

[redacted]

Complex metal salicylates. Part 1. Izv.Sekt.plat.i blag.met. no.31: 78-94 '55. (MLRA 9:5)

(Salicylates) (Compounds, Complex)

ZVYAGINTSEV, O. E.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

USSR/Chemistry - Physical chemistry

Card 1/1 Pub. 22 - 24/51

Authors : Zvyagintsev, O. E., and Karandasheva, E. F.

Title : About the trans-activity of certain intra-spheral substitutes in complex divalent Pt compounds

Periodical : Dok. AN SSSR 101/1, 93-95, Mar 1, 1955

Abstract : Experiments were conducted to determine the kinetics of the formation of cisdiamines of divalent platinum from triacidomonoamino potassium platoates and the trans-activity of intra-spheral substitutes in the complex divalent Pt compounds. The constants of the reaction rate were computed according to a formula intended for reactions of the second order. The time of the semireaction period was found to be inversely proportional to the initial concentration which is also characteristic of the second line reaction. The experimental results obtained during four bimolecular reactions are tabulated. Five USSR references (1927-1954). Tables.

Institution : Acad. of Sc., USSR, The N. S. Kurnakov Institute of Gen. and Inorg. Chem.

Presented by : Academician I. I. Chernyaev, September 24, 1954

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

BUSEV, Aleksey Ivanovich; ZVYAGINTSEV, O.Ye., professor, doktor khimicheskikh nauk, otvetstvennyy redaktor; SHEVCHENKO, G.N., tekhnicheskiy redaktor

[Analytical chemistry; literature in Russian (1941-1952)] Analiticheskaia khimiia; literatura na russkom iazyke (1941-1952gg). Moskva, Izd-vo Akademii nauk SSSR, 1956. 403 p. (MLRA 9:7)
(Bibliography--Chemistry, Analytical)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye.; SUDARIKOV, B.N.

Complex salicylates of certain metals. Part 2. Zhur.neorg.khim.1 no.1:69-75 '56. (Salicylates) (MIRA 9:10)

ZVYAGINTSEV, O.Ye.

Development of A.M. Butlerov's theory of chemical structure in inorganic chemistry. Vop. ist.est. i tekh. no.1:70-81 '56. (MLRA 9:10)

(Chemistry, Inorganic)
(Butlerov, Aleksandr Mikhailovich, 1828-1886)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye.; NIKOLAYEV, A.V.

Abram Mikhailovich Rubinshtein; obituary. Zhur.neorg.khim.1 no.4: 609-614 Ap '56. (MIRA 9:10)

1.Institut obshchey i neorganicheskoy khimii Akademii nauk SSSR. (Rubinshtein, Abram Mikhailovich, 1909-1955) (Bibliography--Compounds, Complex)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye.

"Collected works" of the M.I. Kalinin Institute of Nonferrous Metals and Gold in Moscow. Zhur.neorg.khim. 1 no.2:349-350 F '56. (MLRA 9:10)

(Metals)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye., professor.

"History of chemical industries in Russia" by P.M.Luk'ianov. Vol.4
Reviewed by O.E.Zviagintsev. Khim.nauka i prom. 1 no.6:723 '56.
(MIRA 10:3)

(Chemical industries--History)
(Luk'ianov, P.M.)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye.

Boris Alekseevich Muromtsev; obituary. Zhur. neorg. khim. 1 no.12: 2649-2651 D '56. (MLRA 10:6)
(Muromtsev, Boris Alekseevich, 1898-1956)

ZVYAGINTSEV, O.Ye.

"The metallurgy of rare metals" by G.A. Meerson and A.N. Zelikman. Reviewed by O. E. Zviagintsev. Zhur.prikl.khim. 29 no.8:1303-1304 Ag '56. (MIRA 10:10)

(Metals, Rare and minor--Metallurgy)
(Meerson, G.A.) (Zelikman, A.N.)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.YE.

C.

USSR/ Inorganic Chemistry. Complex Compounds

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11468

Author : Zvyagintsev O.Ye., Karandasheva Ye.F.
Inst : Academy of Sciences USSR
Title : Concerning Quantitative Characteristics of Trans-Effect in Complex Compounds of Tetravalent Platinum

Orig Pub : Dokl. AN SSSR, 1956, 108, No 3, 477-480

Abstract : Studied was the kinetics of halogen replacement by C_5H_5N in compounds of Pt(4+). Objects of investigation were triamines $[(NH_3)_3PtCl_2X]$ Cl, $[EnPt\text{-}NH_3NO_2ClX]$ Cl and salts of Blomstrand type $[(NH_3NO_2)_2PtClX]$, where X -- Cl, Br, NO_2. In all instances the reactions take place only on coordinate Cl - Pt - Cl (Br) or Cl - Pt - NO_2. All reactions are bimoleculer. Data obtained show that replacement of Cl by Br causes increase of velocity constant k in the case of $[(NH_3)_3PtClBrCl]$ Cl and $[(NH_3NO_2)_2PtBrCl]$ almost by 3 times, and in the case of $[EnPtNH_3NO_2BrCl]$ by 2.3

1/2

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

C.

USSR/ Inorganic Chemistry. Complex Compounds

Abs Jour : Referat Zhur- Khimiya, No 4, 1957, 11468

times. Replacement reactions on NO_2 - Pt - Cl coordinates proceed very slowly. Values of k for compounds of this coordinate are 3 times smaller than the k values of the corresponding compounds of reactive coordinates Cl - Pt - Cl. On use of acetone as the solvent, in lieu of water, the values of k remain almost unchanged. On the basis of a comparison of the values of k for compounds of Pt(4+) and Pt2+) the conclusion is reached that the same NO_2-substituent behaves differently in Pt(2+)- and Pt(4+)-series.

2/2

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

AUTHOR: Zvyagintsev, O. Ye.

78-3-34/35

TITLE: VII All-Union Conference on the Chemistry of Complex Compounds, 9-13 October, 1956. (VII Vsesoyuznoye soveshchaniye po khimii kompleksnykh soyedineniy 9-13 oktyabrya 1956 g.)

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1957, Vol.II, Nr.3, pp. 704-708. (USSR)

ABSTRACT: In this article very brief abstracts are given of matter presented at the VII All-Union Conference on the Chemistry of Complex Compounds, organised by the Institute of General and Inorganic Chemistry imeni N. S. Kurnakova, of the Academy of Sciences of the USSR from 9-13 October, 1956. The meetings were held at the Leningrad Technological Institute, imeni Lensoveta, and were attended by 250 scientists from Leningrad, 220 representatives from research establishments from other towns in the USSR, and also by scientists from Czechoslovakia, Poland and Hungary. Altogether 57 reports were presented. At the con-

Card 1/2

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

USSR/General Problems. Methodology. History. Scientific Institutions and Conferences. Teaching. Problems of Bibliography and Scientific Documentation. A

Abs Jour : Ref Zhur-Khimiya, No 6, 1958, 16703

Author : Zvyagintsev O.
Inst : Institute of General and Inorganic Chemistry Academy of Science USSR.
Title : Vyacheslav Vasil'yevich Lebedinskiy

Orig Pub : Zh. neorganicheskoy khimii, 1957, 2, No 8, 1713-1719

Abstract : Obituary of V. V. Lebedinskiy, (1888-1956) a corresponding member of the Academy of Sciences USSR, and outstanding researcher in the field of complex compounds (Institute of General and Inorganic Chemistry Academy of Sciences USSR). A list of scientific work is given.

Card 1/1

Letter to the editors; in connection with A.F. Kapustinskii's erroneous assumption on the discovery of ruthenium by A. Sniadetskii. Zhur. neorg. khim. 2 no.12:2839-2840 D '57. (MIRA 11:2)

(Ruthenium)

(Kapustinskii, A.F.) (Sniadetskii, A.)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

AUTHOR: ZVYAGINTSEV, O. 89-9-25/32

TITLE: Nitrose Oxalate Compounds of Ruthenium. (Nitroso-oksalatnyye soyedineniya ruteniya)

PERIODICAL: **Atomnaya Energiya**, 1957, Vol 3, Nr 9, pp 272-273 (U.S.S.R.)

ABSTRACT: At the Institute for General and Anorganic Chemistry of the Academy of Science of the U.S.S.R. the following synthetization and investigation was carried out:
1.) $(NH_4)_2 [RuNO (C_2O_4)_2]$; 2.) $Mg [RuNO (C_2O_4)_2]$;
3.) $Ca [RuNO (C_2O_4)_2].6H_2O$; 4.) $H_2 [RuNO (C_2O_4)_2]$.

ASSOCIATION: Not given
PRESENTED BY:
SUBMITTED:
AVAILABLE: Library of Congress

Card 1/1

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye.

"Transactions of the technical conference on the calcination of materials in the boiling layer". Zhur.prikl.khim. 30 no.7:1118-1119 Jl '57. (MIRA 10:10)

(Thermochemistry)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye.

LEONIDOV, N.K.

25(5) PHASE I BOOK EXPLOITATION SOV/1497

Akademiya nauk SSSR. Institut nauchnoy i tekhnicheskoy informatsii

Metallurgiya SSSR, 1917-1957, t. 1 (Metallurgy of the USSR, 1917 - 1957, Vol. 1) Moscow, Metallurgizdat, 1958. 745 p. 3,000 copies printed.

Ed. (Title page): I. P. Bardin, Academician; Ed. (Inside book): G. V. Popova; Tech. Ed.: O. G. Bakher.

PURPOSE: The book is intended for scientific workers and engineers in metallurgical plants and in the machine-building industry. It may also be used by students in advanced courses in metallurgical vuzes.

COVERAGE: This collection of articles covers extensively practical and theoretical developments in Soviet metallurgy during the last 40 years. The material deals with the discovery and development of the major ore deposits and the growth of the metal industry in various parts of European and Asiatic USSR. Research institutes, laboratories, their location, and the names of the scientists and engineers involved are listed. Many papers contain so many references and names of various personalities that it was considered beyond the scope of the coverage of each article to list them. The authors claim that the processes, methods and theories described in this book reflect the most recent developments in Soviet metallurgy.

Card 1/21

Metallurgy of the USSR (Cont.) SOV/1497

litically high purity metallic titanium comparable to that produced by the thermic method. There is 1 Soviet reference.

Petrov, D.A. Metallurgy of Semiconductors 638

Germanium and silicon are regarded as the two most important semiconductor materials. As the properties of semiconductors are related to impurities, new methods had to be developed to obtain high-purity crystals of Si and Ge. One method used was to break up by thermal processes the less stable compounds of these elements, in this case SiJ, and SiX, the latter being easier to split at lower temperatures. Another method involves the reduction of the compound by an active element such as hydrogen. Other approaches such as crystallization are mentioned. A method of obtaining monocrystals proposed by Chokhral'skiy in Poland is explained as is its application in the construction of a composition diagram. In conclusion it is pointed out that further experiments in this field are necessary to discover the properties of new materials, their compounds and solid solutions. There are 15 references, 13 Soviet, 1 English, and 1 French.

Zvyagintsev, O.Ye. The Metallurgy of Noble Metals 656

The article deals with the extraction and processing of gold, platinum and several other rare metals. Experimental work of this nature is

Metallurgy of the USSR (Cont.) SOV/1497

presently centered in Moscow at the Nigrizoloto Institute. Gold extracting is done by amalgamation, cyaniding, and chlorination. Another method involves the smelting of gold-bearing copper, lead, and nickel ores with subsequent extraction of gold by electrolysis. Cyaniding is the chief method of gold extraction at present. Activated charcoal is used to precipitate noble metals from the solution and also to adsorb metals which are later recovered by flotation. To obtain high-purity platinum powder, metallurgical methods are most commonly used. Platinum wire for thermocouples, wires and sheets of iridium, rhodium, and ruthenium are manufactured by this method. One of the future tasks is the discovery of new applications for platinum, ruthenium, and palladium in the field of chemistry as catalysts, in electrical engineering as semiconductors and in other fields. There are 53 Soviet references.

Vol'skiy, A.N. Theoretical Principles of Nonferrous Metallurgy 668

Many theoretical aspects of nonferrous metallurgy have been investigated by Soviet engineers and technicians. Over a hundred personalities are mentioned who have made contributions to this field of metallurgy. Some of the work includes studies of the thermodynamics of reactions of nonferrous metals, the theory of roasting, smelting, and the reduction of metals. Other investigators explored the chemical and physical properties

Card 19/21

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0

ZVYAGINTSEV, O. YE., NIKOLSKIY, V. D., STAROSTIN, S. N., [illegible], A. and SHMIDT, V. S.

"Chemistry of Radiortuthenium,"

paper to be presented at 2nd UN Intl. Conf. on the preaceful uses of Atomic Energy, 1 - 13 Sept 58.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye., prof.

Advances in the chemistry of complex compounds. Khim. nauka i prom. 3 no.1:93-97 '58. (MIRA 11:3)

(Complex compounds)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

78-3-4-26/38

AUTHORS: Zvyagintsev, O. Ye., Sudarikov, B. N.

TITLE: Plutonium Salicylates (Salitsilaty plutoniya)

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1958, Vol. 3, Nr 4, pp. 975-985 (USSR)

ABSTRACT: The reaction of tri- and tetravalent plutonium in solutions
with salicylic acid and ammonium salicylate were investigated.
It was found that tetravalent plutonium salicylate of the
following composition is formed in weakly acidous medium:
$PuO(Sal^-)_2$.
Under the same conditions plutonium-(III) precipitates as Pu^{3+}
$(Sal^-)_3 \cdot 1{,}5\ H_2O$.
The optimum conditions for the precipitation of the sali-
cylates of tri- and tetravalent plutonium were determined.
A quantitative precipitation of plutonium salicylate was
determined at pH = 4 - 5.
The salicylates of plutonium-(IV) precipitated at pH = 1-5
contain only Pu-(IV) as an ion and the salicylate ion.
Also the reaction of plutonium salicylates of different
reagents was determined.

Card 1/2

Plutonium Salicylates

On the action of strong acids the plutonium salicylates decompose with the corresponding acid. On the action of concentrated lyes plutonium hydoxides are formed. Plutonium salicylate dissolves with ammonium carbonate solution under the formation of carbonate complexes. Plutonium salicylate is soluble in the following organic solvents: alcohol, acetone, ether, amylacetate. It is, however, insoluble in chloroform and carbon tetrachloride.
The comparative investigations of the tendency to form complexes between plutonium-(III) and plutonium-(IV) show that the salicylates of trivalent plutonium are less stable than the tetravalent ones. On the action of ammoniacal solutions on the salicylates of tri-, tetra- and hexavalent plutonium always oxysalicylates of plutonium-(IV) precipitate on heating. This fact was also proved by chemical, thermographical and radiometric analyses. The optimum conditions for the precipitation of plutonium oxysalicylate were determined. There are 25 tables and 4 references, 2 of which are Soviet.

SUBMITTED: November 16, 1957

Z V

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

AUTHORS: Zvyagintsev, O. Ye., Shubochkina, Ye. F. 78-3-5-15/39

TITLE: A Study of the Kinetics of the Reactions of Substitution in Bivalent Platinum Compounds (Izucheniye kinetiki reaktsiy vnutrisfernogo zameshcheniya v soyedineniyakh dvukhvalentnoy platiny)

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1958, Vol 3, Nr 5, pp 1139-1148 (USSR)

ABSTRACT: The paper in question goes into the kinetics of substitution in the inner sphere of platinum II-compounds.
The effect of pyridine onmonamines of bivalent platinum was observed. The kinetics of the reaction of substitution in monamines of platinum II was investigated at temperatures of 2o,25,3o and 35°C. All the analysed reactions are of second grade. The constants of the velocity of reaction and the activity of energy were computed. From kinetic investigations it was found that the coordination NO_2-Pt-Cl was the most reactive and that the coordination Cl-Pt-Cl was the least. According to their activity in reaction, the coordinations can be classified as follows:

Card 1/3

$NO_2{-}Pt{-}Cl > NO_2{-}Pt{-}NO_2 > Br{-}Pt{-}Cl > Cl{-}Pt{-}Cl$.

From research of the kinetics of compensation of groups in the inner sphere of complex compounds of platinum II, one is also able to **estimate** the displacement of the individual coordinative groups quantitatively. By means of the constant of velocity of the reaction of displacement, it was found that the bromine-ion in the inner sphere is 3 times **more** displaceable than that of chlorine. The NO_2-groups are endowed with a capacity of displacement which is 10 times that of chlorine and 4 times greater than that of bromine. The reactions of displacement of chlorine in the inner sphere were investigated with pyridine in the following platinum II-compounds:

$K[PtNH_3NO_2ClNO_2]$, $K[PtNH_3ClBrCl]$, $K[PtNH_3ClNO_2Cl]$, $K[PtNH_3Cl_3]$, $K[PtC_2H_4Cl_3]$ and the NO_2-group in $K[PtNH_3ClNO_2NO_2]$.

There are 1 figure and 14 references, 14 of which are Soviet.

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A Study of the Kinetics of the Reactions of Substitution in Bivalent Platinum Compounds 78-3-5-15/39

SUBMITTED: June 1, 1957

AVAILABLE: Library of Congress

1. Platinum compounds--Substitution reactions 2. Pyridines --Substitution reactions

Card 3/3

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye.; SHUBOCHKINA, Ye.F.

Study of the kinetics of internal sphere substitution in tetravalent platinum compounds. Zhur. neorg. khim. 3 no.5:1149-1161 My '58. (MIRA 11:6)

1. Institut obshchey i neorganicheskoy khimii im. N.S. Kurnakova Akademii nauk SSSR.

(Platinum organic compounds)
(Complex compounds)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

PROCESSES AND PROPERTIES INDEX

VA

1/

The electroplating of platinum and palladium on copper. O. R. Zvyagintsev, L. K. Amosova, A. V. Vorobieva and N. M. Khananov. *J. Applied Chem.* (U. S. S. R.) 10, 1969-78 (in French 1978-9)(1937).—The following formulas (g./l.) are recommended: For Pt-plating on Cu: (a) H_2PtCl_6 4, Na_2HPO_4 100, $(NH_4)_2HPO_4$ 20 and NH_4Cl 25; c. d. 1 amp./sq. in., at 70-80°, for 3-4 min.; the thickness of the layer formed was 0.1-0.14 γ/sq. in.; (b) $Pt(NH_3)_2(NO_2)_2$ 10 and $NaNO_2$ 100; c. d. 1-2 amp./sq. in. at 70-80°, for 2 min.; recommended for very thin plates (0.04 γ/sq. in.). For Pd-plating on Cu: (a) Pd (as H_2PdCl_4) 1.2, $(NH_4)_2HPO_4$ 20, Na_2HPO_4 100 and NH_4Cl 25; c. d. 0.25 amp./sq. in. at 20° for 2 min.; thickness 0.04 γ/sq. in.; (b) $Pd(NH_3)_2(NO_2)_2$ 10.7, NH_4NO_3 100 and NH_4OH 25; c. d. 0.75 amp./sq. in. at 20° for 1-2 min.; thickness up to 5 γ/sq. in.

A. A. Podgorny

Zhur. Prik. Khim.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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BC

B-2

Gold in the Baleisk mine (Transbaikal). O. E. Zvyagintsev, V. A. Voronova, and E. L. [illegible]skaja (Bull. Acad. Sci. U.R.S.S., 1938, Sér. Chim., 509—518).—Up to 120 m. depth, the composition, microstructure, and Ag content of the Au are const. The K content is very high in comparison with granites. All the component elements and ions have V.E.K. 0·32—1·5 kg.-cal. per mol. L. J. J.

Izv. ak. Nauk SSSR, Ser. Khim.

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PROCESSES AND PROPERTIES INDEX

04

7

of Cb as sulfate. The results were satisfactory.

Remark on the memoir by M. S. Platonov, N. F. Krivoshlikov and A. A. Marakaev: "New quantitative reactions of columbium and tantalum." O. E. Zvyagintsev and Z. G. Namoradze. *J. Gen. Chem.* (U. S. S. R.) 8, 829 (1938); cf. *C. A.* 31, 4014⁹.—Reactions of Cb and Ta with resorcinol does not give a qual. test for these elements. S. L. Madorsky

Zhur. Obshch. Khim.,

COMMON ELEMENTS

MATERIALS INDEX

OPEN

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

BC

A-1

New reactions for detection of niobium and tantalum. O. E. Zvjagintsev and Z. G. Namoradze (J. Gen. Chem. Russ., 1938, 8, 829).—The reaction with resorcinol (Platonov *et al.*, A., 1937, I, 265) is not given by pure Nb salts, and cannot serve for detection of Nb or Ta. R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

BC

A-1

Dokl- AN SSSR

Osmiridium with a cubic crystalline lattice. O. E. Zvyagintsev (Compt. rend. Acad. Sci. U.R.S.S., 1940, 26, 650—651).—Auric osmiridium or aurosmirid, Ir 61·7, Os 21·6, Ru 5·5, and Au 10·3%, has the cubic lattice of Ir. A mineral, Ir 66·4, Os 31·9, Rh 1·6%, separated from Ural Pt residues also has a face-centered cubic structure (X-ray data given) with a parameter approaching that of Ir. The boundary of two solid solutions in the Os-Ir alloys thus lies between 35 and 31% Os; alloys with an Os content > this have the hexagonal Os lattice, and those with less have the cubic face-centred lattice of Ir. The system of natural Os-Ir alloys should be classified: Os 0—35%, minerals of the native Ir group; Os 35—60%, nevyanskite; Os 60—70%, sysertskite.

L. S. T.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

PROCESSES AND PROPERTIES INDEX

Ca

9

The action of sulfide minerals on solutions of gold chloride and cyanide. O. E. Zvyagintsev and E. L. Pisarzhevskaya. *Compt. rend. acad. sci. U. R. S. S.* **18**, 435-6(1938)(in English); cf. *C. A.* **31**, 927^8.—A soln. of HAuCl$_4$ (0.1090 g. Au in 100 ml.) was stirred at room temp. with 1 g. of finely ground sulfide. After two days the g. Au per 100 ml. was as follows: chalcopyrite, none; pyrite, none; galena, 0.006; sphalerite, 0.1380; and control sample, 0.1082. Similar expts. with a KAu(CN)$_2$ soln. 0.1830 g. Au in 100 ml.) gave the following results after 20 days: chalcopyrite, 0.0840; pyrite, 0.0870; galena, 0.1020; sphalerite, 0.1820; and control, 0.1820.

S. Bradford Stone

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

Action of minerals on gold solutions. O. E. Zvyagintsev and I. A. Paulsen. *Compt. rend. acad. sci. U.R.S.S.* 21, 176-8(1938)(in English).—An investigation of the reactions between sulfide minerals (galena, sphalerite, chalcopyrite, pyrite and arsenopyrite) and $AuCl_3$ or $NaAuO_2$ led to the following equations: (*a*) $3\ PbS + 2\ AuCl_3 = 3\ PbCl_2 + 2\ Au + 3\ S$, (*b*) $9\ FeS_2 + 40\ AuCl_3 + 6\ FeCl_3 + 72\ H_2O = 8\ FeSO_4 + 7\ FeCl_2 + 10\ H_2SO_4 + 40\ Au + 124\ HCl$, (*c*) $3\ FeCuS_2 + 7\ AuCl_3 + 6\ H_2O = 7\ Au + 3\ FeCl_2 + 3\ CuCl_2 + 1.5\ H_2SO_4 + 4.5\ S + 9\ HCl$, (*d*) $7\ (4\ ZnS \cdot FeS) + 20\ AuCl_3 + 10\ HCl + 26\ H_2O = 24.5\ H_2S + 0.5\ H_2SO_4 + 20\ Au + 28\ ZnCl_2 + 7\ FeCl_2 + 4\ S$, (*e*) $5\ FeAsS + 2.5\ Fe_2O_3 + 20\ AuCl_3 + 32.5\ H_2O = 4\ FeSO_4 + 6\ FeCl_3 + 20\ Au + 5\ H_3AsO_4 + H_2SO_4 + 48\ HCl$, (*f*) $3\ PbS + 8\ NaAuO_2 + 4\ NaOH = 8\ Au + 3\ Pb(NaO)_2 + 3Na_2SO_4 + 2H_2O$, (*g*) $1.5\ (4ZnS.FeS) + 17\ NaAuO_2 + 10H_2O = 17\ Au + 6\ Zn(OH)_2 + 1.5\ Fe(OH)_3 + 6\ Na_2SO_4 + 1.5\ S + 5\ NaOH$, (*h*) $2\ FeS_2 + 10\ NaAuO_2 + 4\ H_2O = 2\ Fe(OH)_3 + 4\ Na_2SO_4 + 10\ Au + 2\ NaOH$. It is unlikely that reactions *f*, *g* and *h* occur in nature. The other equations probably represent the processes of deposition of Au in the cementation zone. A. H. Kenne

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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PROCESSES AND PROPERTIES INDEX

C-4

7

Determination of gold in cyanide solutions of gold-extracting plants. O. E. Zvyagintsev. *Zolotaya Prom.* No. 3, 30(1939).—The following method was found satisfactory for detg. Au in cyanide solns. contg. not less than 0.0002% Au: To 100 ml. of the cyanide soln. add 5-10 ml. HNO_3, heat to boiling, add 1.0-1.5 g. $KClO_3$ in small portions during 15-20 min. Boil the soln. for $^1/_2$ hr., cool, neutralize with NaOH or KOH to weakly acid reaction (litmus test), and det. the Au by titrating with hydroquinone or colorimetrically by comparing with a standard scale the intensity produced by drops of the Au soln. on filter paper wetted with $Hg_2(NO_3)_2$.

B. Z. Kamich

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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C 1

38. **Wet method of determining gold in ores.** [illegible] V. A. Vorob'ev, and S. N. [illegible] (Zavod. Lab., 1938, 7, 609—610).—4% I in 4% KI is added with shaking to 10—60 g. of SiO_2 or oxide ore, to a permanent brown coloration, when the solution is filtered. 10 g. of Hg are added per 100 ml. of filtrate + washings, and the system is shaken for 1 hr. The washed amalgam is then dissolved in HNO_3, and the residual Au is washed and dissolved in aqua regia. The solution is evaporated to dryness, the residue of $AuCl_3$ dissolved in 1 ml. of H_2O, and 0·1 ml. of the solution placed on filter-paper impregnated with [illegible]. The intensity of coloration given is compared with that given by a series of standards. The error varies from 0 to —15%; in the case of sulphide ores the accuracy is very low, even with special pretreatment of the minerals.
R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

1. GOGORISHVILI, P.V., KULYINA, V.N., ZVYAGINTSEV, O.Ye.

2. USSR (600)

"High Oxygenous Compounds of Iron," Zhur. Obshch. Khim., 9, No 21, 1939. Chem Inst., Georgian Affil, of the Acad. of Sci. USSR. Received 9 June 1939.

9. [redacted] Report U-1626, 11Jan 1952.

Ca

Solubility of tantalum chloride and bromide in organic solvents. Z. G. Mamoradze and O. K. Zvyagintsev. *J. Applied Chem.* (U. S. S. R.) 12, 993-8(in French, 998) (1939).—TaCl$_5$ dissolves in CCl$_4$ (0.8375, 1.2404 and 1.6665 g./100 cc. of soln. at 20, 30 and 35°, resp.) and in CS$_2$ (1.2650, 2.6803, 3.1175 and 3.7430 g./100 cc. of soln. at 0, 14, 20 and 25°). It reacts with CHCl$_3$, EtBr, PhNO$_2$ and H$_2$NCH$_2$CH$_2$NH$_2$. At 0° it dissolves in EtBr much more readily than in CS$_2$ but at higher temp. the reaction was observed. TaBr$_5$ dissolves in CCl$_4$ (0.3931 and 1.4681 g./100 cc. of soln. at 20 and 30°) and in EtBr (0.2530, 0.3066 and 0.4277 g./100 cc. of soln. at 0, 20 and 35°); no reaction was observed. The reaction products were not investigated. Data are tabulated and plotted.

A. A. Podgorny

Zhur. Prik. Khim.,

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

MATERIALS INDEX

OPEN

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BC

A-1

Action of ultra-short waves on complex compounds. D. I. ERISTAVI and O. E. ZVJAGINTZEV (Ann. Sect. Platine, 1939, No. 16, 81—86).—The conductivity and temp. of aq. solutions of *cis*-$[Pt(NH_3)_2]Cl_2$, *trans*-$[Pt(NH_3)_2]Br_2$, $[Pt(NH_3)_4]Cl_2$, and $[Co(NH_3)_3(NO_2)_3]$ are raised by exposure to ultra-short waves (λ = 2—10 m.). Disruption of the mols. is supposed to occur. R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

BC

H-1

Reduction of solutions of gold salts with natural sulphides. O. E. Zvyagintsev and A. Pauluk (Ann. Sect. Platine, 19[illegible], No. 10, 109—137).—The following reactions are shown to take place between aq. $AuCl_3$ or $NaAuO_2$ and certain natural sulphides: $3PbS + 2AuCl_3 \rightarrow 3PbCl_2 + 2Au + 3S$; $3PbS + 8NaAuO_2 + 4NaOH \rightarrow 8Au + 3Na_2SO_4 + 3Na_2PbO_2 + 2H_2O$; $9FeS_2 + 40AuCl_3 + 6FeCl_3 + 7H_2O \rightarrow 8FeSO_4 + 7FeCl_2 + 10H_2SO_4 + 40Au + 120HCl$; $2FeS_2 + 10NaAuO_2 + 4H_2O \rightarrow 2Fe(OH)_3 + 4Na_2SO_4 + 10Au + 2NaOH$; $6FeCuS_2 + 14AuCl_3 + 12H_2O \rightarrow 14Au + 6FeCl_2 + 6CuCl_2 + 3H_2SO_4 + 9S + 18HCl$; $14(4ZnS,FeS) + 40AuCl_3 + 20HCl + 62H_2O \rightarrow 40H_2S + 40Au + 6S + 56ZnCl_2 + 14FeCl_2 + 12H_2SO_4$; $10FeAsS + 40AuCl_3 + 5Fe_2O_3 + 66H_2O \rightarrow 8FeSO_4 + 12FeCl_3 + 40Au + 10H_3AsO_4 + 2H_2SO_4 + 84HCl$; $3(4ZnS,FeS) + 34NaAuO_2 + 10H_2O \rightarrow 34Au + 12Zn(OH)_2 + 3Fe(OH)_3 + 12Na_2SO_4 + 3S + 10NaOH$. $NaAuO_2$ is very unstable in aq. alkaline solution, and probably could not exist under natural conditions. Deposition of Au in the cementation zone of natural sulphide deposits from $AuCl_3$ formed in the oxidation zone is quite possible. R. T.

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CA

2

Dokl. AN SSSR

Oxidation of copper sulfide and transference of copper into aqueous solution under air pressure. O. E. Zvyagintsev and V. G. Tronev. *Compt. rend. acad. sci. U. R. S. S.* 23, 537-40 (1939) (in English).—It is known that the soly. of Cu sulfides in water fluctuates within narrow limits of the order of 10^{-10} to 10^{-6} mols. per l. at normal temp. and pressure. This investigation gives preliminary data on the effect of high air pressure (up to 100 atm.) and temp. (up to 150°) on oxidation and soln. in water. The effect of partial pressure of oxygen on the soln. of Cu from CuS in water was detd. by using a weighed portion of CuS from a $CuSO_4$ soln. with H_2S and dried at 100° to const. weight. Under partial pressures of O in the system varying from 0.3 to 40 atm. the percentage Cu dissolved ranged from 6.0 to 87.0%. Expts. on the effect of temp. on the soln. of Cu from CuS in distd. water under air pressure show that first of all the CuS oxidation velocity and the passing of Cu into soln. increase as the temp. is raised until an optimum is reached, above which soln. decreases more or less pronouncedly depending on the initial weighed portion of CuS. This may be explained in terms of acceleration and strengthening of hydrolysis of the sulfate product. These data lead to the following conclusions: (1) CuS can be dissolved in distd. water in a few hrs. under air pressure at temps. from 100° to 200°. (2) The velocity with which Cu passes into aq. soln. is proportional to the partial pressure of O in the gaseous phase. (3) As a result of hydrolysis of the $CuSO_4$ which forms from the oxidation of CuS, basic copper sulfate, $CuSO_4 \cdot 2Cu(OH)_2$, remains undissolved in water. Its quantity depends upon the temp. R. K. Carleton

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

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PROCESSES AND PROPERTIES INDEX

Ca

6

The interaction of gold with telluric and selenic acids. O. E. Zvyagintsev and R. A. Yakovleva. *Compt. rend.* ~~*acad. sci. U. R. S. S.*~~ 25, 100-1(1939)(in English).—Metallic Au is unaffected by a 10% soln. of telluric or selenic acid at 25°, 60° or 100° during 240 hrs., or at 150° during 6 hrs. Hence, under natural conditions, these acids are not carriers of Au that tend to enrich Au deposits near the surface. Freshly pptd. and washed Au(OH)$_3$ was treated with less than the equiv. amt. of hot telluric acid; the yellow filtrate upon concn. in a desiccator over H$_2$SO$_4$ deposited yellow crystals (of indefinite compn.) which always contained more or less cryst. telluric acid and metallic Au as impurities and which showed Au:Te ratios varying from approx. 1:1 to approx. 3:1. G. A.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

7

Determination of the platinum-group metals and of gold. O. E. Zvyagintsev, S. K. Shabarin, V. A. Vorob'eva and A. P. Bochkareva. *Trudy Vsesoyuz. Konferentsii Anal. Khim., Akad. Nauk S. S. S. R.* 1, 575-83 (1939); *Khim. Referat. Zhur.* 1940, No. 2, 63-4; cf. *C. A.* 34, 1860^4.—The test-tube method was used for detg. Ir and Rh in ores. A large excess in the charge of Ag (5 times the ordinary amt.) and of Pt (exceeding 5-10 times the content of Ir) transforms nearly all Ir into the metallic state. A rapid method for detg. Au in ores has been developed. The method is applicable to field conditions. Pulverize the sample to 65 mesh, treat in a porcelain dish with 60-70 cc. of HNO$_3$ (d. 1.4) (avoiding a violent evolution of N oxides), dil. with 100 cc. of water, filter, wash the residue with hot water and proceed as in the analysis of quartz and oxidized ores. For the analysis of quartz and ocher ore place 10-50 g. of the ore in a porcelain dish or mortar, add gradually an I soln. (I$_2$ 2 g. + KI 4 g. in 100 cc. of water) until the brown color of the excess I$_2$ persists, let stand overnight or grind in the mortar after every 5-10 min. in the course of 60 min., filter the soln. and wash the ppt. until the wash water is clear. All Au is dissolved as AuI$_3$. Add to the Au soln. 40 g. of metallic Hg for each 100 cc. of liquid and shake for 60 min. Decant the soln. and wash the Au amalgam with water by decantation. Transfer the amalgam to a porcelain dish and dissolve the Hg in HNO$_3$ (1:2) with careful heating. Decant the soln. and wash the Au by decantation. Dissolve Au in 1 drop of aqua regia and evap. excess on a water bath. Dissolve the AuCl$_3$ in 1 cc. of water, place 0.1 cc. of the soln. on a filter paper satd. with Hg(NO$_3$)$_2$ soln. and compare the dark spot of reduced Au with the color scale. The following method is proposed for detg. Au in cyanide solns: To 100 cc. of the soln. add 5-10 cc. of HNO$_3$, heat to boiling, during boiling add 1.0-1.5 g. of KClO$_3$ in the course of 15-20 min., boil for 30 min., cool, neutralize with OH to a weakly acid reaction to litmus and det. Au by the drop or the volumetric method. In the volumetric method dil. the soln. with water to 50 cc., add 1 cc. of KHF$_2$ or NaHF$_2$ buffer soln. satd. in the cold and 2 cc. of *o*-dianisidine and titrate from the microburet with hydroquinone until the reddish color disappears. A min. of 2 mg. of Au in 1 l. of the soln. can be detd. Free Cl and Br interfere with the detn. because they also produce a pink color with *o*-dianisidine.

W. R. Henn

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PROCESSES AND PROPERTIES INDEX

5

*On the Pressing of Platinum [Powders] and Similar Metals. O. E. Zvyagintsev. (*Sbornik Nauch. Trudov Moskov. Inst. Tsvet. Metallov Zolota*, **1940**, (9), 420–430).—[In Russian]. Experiments were carried out on the pressing of platinum powders and subsequent annealing at 1000° C. for 1½ hr. The results show that platinum obtained in this way has a structure, density, and toughness superior to that of platinum obtained from molten metal.—N. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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CA

6

Compounds of manganese salts with pyridine and ethylenediamine. O. E. Zvyagintsev and M. Chkoniya. *J. Gen. Chem.* (U. S. S. R.) 10, 1647-52 (1940); cf. *C. A.* 32, 2902^1.—New compds. of Mn with C_5H_5N (I) and $(CH_2NH_2)_2$ (II) were obtained. $Mn(NO_3)_2.8II.4HNO_3.4H_2O$ (III) is obtained by treating a concd. $Mn(NO_3)_2$ soln. with strong HNO_3, adding II to slightly acid reaction and crystg. in a desiccator for a few days; $MnC_2O_4.10II.4C_2O_4H_2$ (IV), by boiling a soln. of MnC_2O_4 in concd. oxalic acid, filtering, adding to the filtrate EtOH and II and crystg. By similar methods there were prepd.: $MnCl_2.I.2HCl.H_2O$ (V); $5MnF_2.3II.3HF$ (VI); $Mn(OAc)_2.II.HOAc$ (VIII); $2MnF_2.2NH_4F.I$ (VII); III and IV are colorless crystals, V, VI, VII and VIII are pale-rose crystals. All are insol. in EtOH, Et_2O and benzene.

S. Kaganoff

Zhur. Obshch. Khim.,

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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BC

a-2

Dokl. AN SSSR

E 14

Theory of formation of vein gold deposits. O. E. ZVJAGINTSEV and I. A. PAULSEN (Compt. rend. Acad. Sci. U.R.S.S., 1940, 28, 447—451).—The velocity of dissolution of Au in solutions of Na_2S saturated with H_2S increases to a max. with increasing concn. and then decreases to a very low val. at high concn., in accordance with the view that the effective agent is NaHS, whereas the very conc. solutions contain mainly Na_2S. The dissolution is facilitated by the presence of finely ground quartz or pyrites but is hindered by carbonates. The solubility increases markedly with rising temp. over the range 70—300°, so that the pptn. of Au does not require the presence of any particular mineral but is simply the result of cooling. F. J. G.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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PROCESSES AND PROPERTIES INDEX

CA

8

New mineral species of the platinum group. O. E. Zvyagintsev. *Compt. rend. acad. sci. U. R. S. S.* 26, 788-91(1940)(in English).—A small quantity of placer Pt was found near the Norilsk Cu-Ni sulfide deposit. Considerable regular cubic crystals were present, some drawn out into rectangular prisms, others flattened. The sp. gr. was widely variable owing to inclusions. The Norilsk Pt differs from the Ural Pt by having high Pd content, much Fe and some Ni and Ag; Au is not a component of the alloy but is present in the deposit. The name *norilskite* is proposed for the end member which shows Pt 35.50, Fe 25.30, Ni 25.64, Pd 3.57, Cu 9.28, S 0.71 and insol. 0.40%. Ir and Rh were not discovered in any of the grains. It differs from the palladic Pt of S. Africa by its high Fe content. The geologic features, notably the presence of coal beds older than the deposits, permit the assumption that the metallic grains crystd. from a gaseous medium which may have consisted of carbonyls of the various metals formed at the contacts between sulfide and coal deposits. D. W. Pearce

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002" CIA-RDP86-00513R002065720009-0"

Crystallo-alcoholates of manganous chloride. O. E. Zvyagintsev and A. Z. Chkhenkeli. *J. Gen. Chem.* (U. S. S. R.) 11, 791-802(1941).—The authors investigated the formation of crystallo-alcoholates of $MnCl_2$ with ROH, from MeOH to AmOH. $MnCl_2$ was dried at 650° in dry HCl. The alcs. were dried by prolonged standing over calcined Na_2SO_4 or K_2CO_3, then distd. from Na or Ca. Benzene or petr. ether was used to aid the sepn. of the cryst. products, which were handled under anhyd. conditions. The prepn. of $MnCl_2.xMeOH$ was carried out by soln. of a known amt. of $MnCl_2$ in a sufficient amt. of anhyd. MeOH, followed by crystn. by: (a) accelerated pptn. from concd. cooled soln., (b) heating of the soln. followed by rapid cooling, (c) slow removal of excess MeOH in a desiccator followed by cooling, (d) removal of MeOH as above, followed by addn. of benzene, and (e) subjection of the mother liquors from the above expts. to partial removal of MeOH followed by cooling. The products obtained depended upon the method used for isolation, and only homogeneous products were analyzed and studied. Three compds. were definitely established: *$MnCl_2.2MeOH$*, in 2 forms, either needles frequently twinned, n 1.582-1.580, monoclinic, extinction angle 38°, pink; or plates stretched into needles, n 1.561, rhombic, straight extinction, weak birefringence, pink; *$MnCl_2.3MeOH$*, elongated prisms, rhombic, n 1.563-1.574, straight extinction, interference figure plainly biaxial with a wide angle of the optical axes, weakly pink; and *$MnCl_2.4MeOH$*, prismatic plates, monoclinic, n 1.572, inclined extinction, biaxial, colorless. Compds. with EtOH were prepd. in the same manner; 2 compds. were established: *$MnCl_2.2EtOH$*, cryst. grains of irregular shape, monoclinic, n 1.602-1.581, inclined extinction, pink; *$MnCl_2.3EtOH$*, prismatic plates, monoclinic, inclined extinction with high birefringence, n 1.602-1.592, pink. Two compds. with PrOH were prepd. A satd. soln. of $MnCl_2$ in PrOH was heated on a water bath for 4 hrs. under reflux, cooled in ice, placed in a desiccator with $CaCl_2$, followed by addn. of petr. ether, and the small amt. of pptd. *$MnCl_2.PrOH$* was filtered off: thin prisms, monoclinic, n 1.593-1.580, inclined extinction, light pink. The same compd. was obtained on prolonged standing in a desiccator over H_2SO_4 of 21 g. $MnCl_2$ in 150 cc. PrOH. $MnCl_2$ (10.5 g.) in 75 cc. cool PrOH was kept in a desiccator with $CaCl_2$, then with H_2SO_4, for several months, yielding a ppt. of *$2MnCl_2.3PrOH$*, which was filtered by squeezing between filter papers, followed by washing with Et_2O; large prisms, monoclinic, inclined extinction, but some crystals have straight extinction, biaxial interference figure, n 1.580-1.583, light pink. Two compds. with BuOH were prepd. A satd. soln. of $MnCl_2$ in BuOH prepd. by boiling under reflux was cooled, kept in a $CaCl_2$ desiccator, then in a H_2SO_4 desiccator; after 3 months the mass was treated with petr. ether, pptg. *$4MnCl_2.3BuOH$*, small grains, monoclinic, n 1.572-1.589, inclined extinction,

AND L. A. QUILL

Zhur. Obshch. Khim.

6

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

colorless. $MnCl_2$ (10.6 g.) in 90 cc. cold BuOH was kept in a $CaCl_2$ desiccator for a month, then for 4 months in a H_2SO_4 desiccator, yielding *$MnCl_2.2BuOH$*, plates or needles, *n* 1.580-1.577, monoclinic, inclined extinction. Two compds. with AmOH were prepd. $MnCl_2$ (12 g.) in 30 cc. AmOH in the cold yielded on standing *$MnCl_2.2AmOH$*, bluish cryst. aggregates, *n* 1.602-1.590, monoclinic with inclined extinction; the mother liquor treated with petr. ether, filtered, the petr. ether distd. from the filtrate and the residue placed in a desiccator for 3 months yielded, on washing with Et_2O, *$MnCl_2.3AmOH$*, irregular grains, *n* 1.494-1.490, rhombic with straight extinction. Two compds. were prepd. with *d-sec*-AmOH. $MnCl_2$ (21 g.) in 240 cc. cold *d-sec*-AmOH, filtered and let stand in a desiccator for 8 months, pptd. *$MnCl_2.3C_5H_{11}OH$*, rhombic, *n* 1.614, biaxial crystals with straight extinction. $MnCl_2$ (9 g.) in 40 g. *d-sec*-AmOH on prolonged standing deposited *$MnCl_2.3C_5H_{11}OH$*, after removal of *$MnCl_2.2C_5H_{11}OH$* which pptd. in about 1 month; *$MnCl_2.3C_5H_{11}OH$*, rhombic, *n* 1.614-611, straight extinction. All of these compds. are poorly stable and decomp. either at room temp. or at slightly elevated temp.; all are decompd. by H_2O.

G. M. Kosolapoff

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

CA

22

Sodium-tungsten bronzes. A. A. Kalandiya and O. E. ~~Zvyagintsev~~. *J. Gen. Chem.* (U.S.S.R.) 11, 1181-6 (1941). See *C.A.* 37, 6478^9. G. M. Kosolapoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Chem. Inf. [illegible]

[illegible] compds., [illegible] of them new, were prepd. from anhyd.
CoCl$_2$, CoBr$_2$, CoI$_2$, and anhyd. MeOH and EtOH by two
methods of slow crystn. in a desiccator, (I) from a satd.
soln. in the alc. at low temp. (down to −4°) for 25–30
days, (II) from a supersatd. soln. obtained by reducing the
vol. of the satd. soln. to $^1/_2$; method I gives compds.
richer in alc. The compds., method of prepn., color, d.,
mp., and crystal system, are listed: compds. of CoCl$_2$ with
(1) 3 MeOH, II, purple-blue, 1.55, 1.682 ± 0.005, mono-
clinic; (2) 4 MeOH (new), I, purple-blue, 1.39, 1.719 ±
0.005, cubic; (3) 3 EtOH, I, blue-purplish, 1.05, 1.702 ±
0.005, rhombic; (4) 2 EtOH, I, blue-pinkish, 1.42,
1.702 ± 0.005, rhombic; (5) 1 EtOH (new), from the
mother liquor of the foregoing, blue-purplish, 1.70, 1.702
± 0.005, rhombic; compds. of CoBr$_2$ with: (6) 4 MeOH
(new), I, light blue, 1.41, 1.700 ± 0.005, triclinic; (7)
2 MeOH, from the mother liquor of the foregoing, purp-
lish-blue, 2.09, 1.70 ± 0.05, rhombic; (8) 3 MeOH, II,
purplish-blue, 1.76, 1.65 ± 0.05, rhombic; (9) 3 EtOH,
I, azure blue, 1.07, 1.61 ± 0.05, triclinic; (10) 1 EtOH
(new), II, sky blue, 2.50, 1.72 ± 0.05, cubic; (11) 2 EtOH,
from the mother liquor of the foregoing, dark blue, 1.60,
1.73 ± 0.05, not detd.; compds. of CoI$_2$ with (12) 6
MeOH (α) (new), I, amber, 1.63, 1.729 ± 0.005, hex-
agonal; (13) 6 MeOH (β) (new), from the mother liquor
of the foregoing, 14–16 days, yellow-brown, 1.68, 1.73 ±
0.05, quadratic; (14) 5 MeOH (new), II, dark brown,
1.74, 1.73 ± 0.05 hexagonal. CoI$_2$ ethylates could not
be obtained, as the soln. of CoI$_2$ in EtOH is viscous
and does not crystallize on standing or cooling. All
the above compds. decomp. on heating and in humid air

exchange alc. for H$_2$O; are insol. in ether and in ligroin,
very sparingly sol. in benzene (decomp.); alc. solns. show
a good elec. cond., better for the methylates than for the
ethylates. The glass electrode shows a weak acidic pH,
the weaker the greater the no. of alc. mols. bound, pos-
sibly indicating repulsion of the H$^+$ of alc. by Co^{++}.

N. Thon

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

Nickel and cobalt in the manganese ores of Chiatura (Georgia). O. E. Zvjagintzev (*Compt. rend. Acad. Sci. U.R.S.S.*, 1942, [illegible], 180—181).—Recent analyses of the Mn ores of the Chiatura district having an accuracy of 0·0005% of the sample wt. show that both oxide and carbonate ores contain nearly const. amounts of Ni and Co slightly >, and in the ratio of, their Clarke nos. The concn. is independent of the type of ore and the Mn content. J. O'M-B.

Dokl-AN SSSR

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0

PROCESSES AND PROPERTIES INDEX

M

2

Solid Solutions in Native Minerals of the Platinum Group. O. E. Zvyagintsev (*Izvest. Sekt. Fiziko-Khim. Anal.*, 1943, 16, (1), 220-228).—[In Russian]. Native platinum of the Norilsky deposits is a solid solution of palladium (3·57%), copper (9·5%), iron (25·3%), and nickel (25·0%) in platinum. Minerals containing osmium and iridium are solid solutions. Iridium can dissolve up to 32% osmium; at higher concentrations the osmium lattice prevails.—D. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ZVYAGINTSEV, Orest Yevgenyevich

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

"Energy Coefficients of crystalline lattices (VEC) and the Structure of Binary Metallic Alloys," Compt. Rend. Acad. Sci. URSS, 38, 28-32, 1943 -- in English) Dokl. AN SSSR

The valency energy coeffs. (VEC) of the ions of the components furnish a very convenient means of comparing ions of different valencies and revealing some regularities in the formation of intermetallic phases of binary systems. Inadequate accuracy in calculating the VEC and lack of clearness in some of the determinations of the valency of metals restrict present consideration to the qual. regularity.

SO: C.A. Vol. 38, Jan, 10--Jun 20, 44

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0

PROCESSES AND PROPERTIES INDEX

***Interdiffusion of Platinum and Iridium in the Solid State.** O. E. Zvyagintsev, A. G. Raikhstadt, and M. A. Vladimirova (*Zhur. Priklad. Khim.*, 1944, 17, 22-30; *C. Abs.*, 1945, 39, 1126).—(In Russian.) Platinum-iridium alloys, containing 10, 25, 35, and 50% of iridium, were prepared from powdered components, and interdiffusion therein was studied at 1300, 1400, and 1500°C. Very rapid diffusion occurs; after 10 hr. at 1300°C. all alloys studied showed the presence of solid solutions. The moment of the formation of homogeneous solid solution was noted by the appearance of a max. in the curves of specific electrical conductivity, and by microscopic and X-ray examination. The diffusion of iridium into platinum is slower than that of platinum into iridium. The ready formation of solid solutions permits the use of powder-metallurgical methods of manufacture at fairly low temperatures.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

Composition of intermetallic compounds as determined from ionisation potentials of their components. O. E. Zvjagintsev. (*Compt. rend. Acad. Sci. U.R.S.S.*, 1944, 43, 159—162).—It is suggested that the possible proportions of the components in binary intermetallic compounds are in the same ratio as the vals. of J/V, where J = ionisation potential and V = at. vol. The possible proportions determined by this rule are further restricted by factors such as ionic stability and the necessity of arranging the complex in a stable cryst. lattice. Results are tabulated for the systems Hg–Na, Hg–K, Cd–Mg, Cu–Au, and Au–Mn, and comparison is made with observation. H. J. W.

Dokl-AN SSSR

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0

2

The composition of intermetallic compounds and the ionization potential of their components. O. M. Zvyagintsev. *Doklady Akad. Nauk S.S.S.R.* 61, 103-7(1948).—The theory is advanced that stable binary intermetallic compds. (BIC) satisfy the condition that the value of J/nV is equal for the 2 components, where J is the ionization potential, n the at. No. and V the at. vol. In order to predict successfully observed BIC, two addnl. conditions must be imposed, namely, that improbable ions, e. g., triply ionized Mg, shall be excluded from consideration and, secondly, that the requirements of crystal chemistry, e. g., exclusion of atomic ratios greater than 8, be fulfilled. The theory is shown to predict successfully (1) nearly all the BIC observed in the systems Hg-Na, Hg-K, Cd-Mg, Au-Mn, Au-Cu and (2) the nonexistence of BIC of Ag with Tl. The theory is capable of further refinement by taking account of the effect of the change in at. vol. with temp. and the effect of interaction on ionization potentials.

I. W. Perry

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0

9

Zvyagintsev, O. E.: The Refining of Gold, Silver, and Metals of the Platinum Group. (In Russian.) Moscow: Metallurgizdat. 1945. 214 pp.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

2

Applied chemistry in the Academy of Sciences of U.S.S.R. O. E. Zvyagintsev and A. E. Poral-Koshits. *J. Applied Chem.* (U.S.S.R.) [illegible], 101-11(1944).—Review.
G. M. Kosolapoff

Zhun-Paik-Khiun

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

"APPROVED FOR RELEASE: Thursday, September 26, 2002" CIA-RDP86-00513R002065720009-0

13

Thirty years of Soviet applied chemistry. O. E. Zvyagintsev. *Zhur. Priklad. Khim.* (J. Gen. Chem.) 20, 1045-52(1947).

N. Thon

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-1

ZVYAGINTSEV, O. YE.

May 48

SR/Chemistry - Analysis, Organic
Chemistry - Analysis, Quantitative

"New Methods for Organic Analyses," O. Ye. Zvyagint-
sev, $\frac{1}{4}$ p

"Priroda" No 5

Describes M. O. Karshun's method whereby oxygen, hydrogen, carbon, halogen, <u>or</u> oxygen, hydrogen, carbon and sulfur can be determined in one step. Substance to be analyzed is burnt in rapid stream oxygen (35 - 50 cc/min). Products pass through special metallic silver absorbent which retains

5/49T15 ~~May 48~~

[illegible]R/Chemistry - Analysis, Organic (Contd)

sulfur above 750° and halogens above 450°; then enter usual absorbents for water and carbon dioxide.

5/49T15

ZVYAGINTSEV, O. YE.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

USSR/Academy of Sciences
Bibliography

May 48

"Review of 'Science in Georgia for Twenty-Five Years (1921-1946),' a Bibliographical Index," O. Ye. Zvyagintsev, ½ p

"Zhur Prikl~~ad~~ Khim~~ii~~" Vol 21 XXI, No 5

Lists published work of Georgian scientists. Gives Georgian equivalents of Russian technical terms. Published in Tbilisi, 1947.

[redacted]

11/49T2

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

USSR/Physics Oct 48
High Temperature Research
Furnaces

"New Method of Experimental Work at High Temperatures," O. Ye. Zvyagintsev, 1 p

"Priroda" No 10

Describes difficulties to be overcome when conducting experiments at temperatures of 2,000 to 2,500°C. Refers to article by Ya. I. Ol'shanskiy ("Dok Ak Nauk SSSR" Vol LIX, No 6) describing method for high-temperature research without use of crucibles. Zvyagintsev suggests that Ol'shanskiy's method will be widely adopted by Soviet industry.

[redacted] 9/49T103

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

CA

Ernest Khristianovich Fritzman. O. E. Zvyagintsev. *Izvest. Sektora Platiny i Drugikh Blagorodnykh Metal., Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.* No. 21, 12-15(1948).—An obituary. A list of 52 publications by Fritzman is appended. M. Hosch

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

CA

4

Rational phase analysis of slimes from nickel electrolysis. O. E. Zvyagintsev and L. D. Plaksina. *Izvest. Sektora Platiny i Drugikh Blagorodnykh Metal., Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.* No. 22, 93-110 (1948).—The object of this investigation was to det. the distribution of Ni in electrolytic slimes among free metal, sulfide, sulfate, and oxide. The dried and ground slime contained Fe 3.02, Cu 8.43, Ni 30.54, Pb 0.033, Ca 1.33, Mg trace, Si 2.23, sulfidic S 3.27, and sulfate S 0.97%. A 0.1-g. sample was treated with 150 ml. of H_2O to remove $NiSO_4$. The residue was treated with 100 ml. of 2% $CuSO_4$ soln. at boiling temp. lasting 4 hrs., and this treatment was repeated until the filtrate was free of Ni. In this step all the metallic Ni and 17% of NiS were removed. The residue was boiled twice for 1 hr. with a mixt. of glacial AcOH 25, H_2O 120, and H_2O_2 5 ml. This removes the rest of the NiS. The residue was treated with aqua regia to dissolve oxidic Ni. Details of procedure are given. M. Hosch

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O. YE.

PA 47/49T101

USSR/Petroleum Jan 49
Prospecting
Gas Deposits

"New Hydrochemical Method of Determining Petroleum and Gas Deposits," O. Ye. Zvyagintsev, 1 p

"Priroda" No 1

According to the analysis of M. S. Kaveyev, Sci Worker, Kazan Affiliate Geol Inst, subsurface waters near oil deposits change their usual composition. For example, waters of the Tatar ASSR usually have a pH equal to 7, and ratio of magnesium to calcium is about one. In oil-bearing regions, this ratio rises to 1.8, 2.5 and higher. The pH

47/49T101

USSR/Petroleum (Contd) Jan 49

of the water also changes in one direction or the other.

47/49T101

PA 37/49T5

ZVYAGINTSEV, O. E.

USSR/Chemistry - Potassium Oxides Feb 49
Chemistry - Alkali Metal Oxides

"The New Potassium Oxide KO_3," O.E. Zvyagintsev, $\frac{1}{4}$ p

"Priroda" No 2

Describes how I. A. Kazarnovskiy, Corr Mem, Acad Sci USSR, discovered new oxide of potassium having formula KO_3.

37/49T5

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV O. YE.

Mar 49

USSR/Metals
Metallurgy, Nonferrous

"Review of 'Russian Achievements in Nonferrous Metallurgy,' by A. I. Belyayev, V. A. Vanyukov, V. V. Danilevskiy, et al," O. Ye. Zvyagintsev, 1 p

"Priroda" No 3

Favorable review of subject collection of articles, read by authors at Conf on Hist of Eng, organized by Acad Sci USSR and Moscow Inst of Nonferrous Metals and Gold imeni M. I. Kalinin, 16 Nov 44. Includes following articles:

44/49T90

[redacted]

Mar 49

USSR/Metals (Contd)

V. V. Danilevskiy's "Discovery of Gold in the Urals," V. A. Vanyukov's "Role of Russian Engineers in Developing the Metallurgy of Copper," and A. I. Belyayev's "Role of Russian Engineers in Developing the Metallurgy of Aluminum."

44/49T90

[redacted]

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

USSR/Metals - Manganese Alloys

Aug 49

"Recent Publications on Manganese Alloys," O. Zvyagintsev, ½ p

"Priroda" No 8

First volume of the "Works of the Institute of Metals and Mining," Acad Sci Georgian SSR, contains interesting articles on manganese and its alloys. F. N. Tabadze studies the manganese-carbon system by thermic analysis and establishes the existence of three manganese carbides: Mn_3C, Mn_4C and Mn_7C_3. Another article by Tabadze and

PA 67/49T102

USSR/Metals - Manganese (Contd)

Aug 49

M. V. Batiyev studies the chromium-manganese system and solid chromium solutions in manganese.

67/49T102

ZVYAGINTSEV, O.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

USSR/Chemistry - Platinum Compounds Dec 49
Complex Compounds

"Crystalline Structure of L. A. Chugayev's Salts," O. Zvyagintsev, $\frac{1}{4}$ p

"Priroda" No 12

In 1915 L. A. Chugayev, professor at Leningrad U, obtained complex ammonium compound of tetravalent platinum with five ammonia molecules and at same time confirmed correctness of theory of complex compounds. Reports results of recent studies by G. B. Bokiya and L. A. Popova ("Doklady Akademii Nauk SSSR"

155T13

USSR/Chemistry - Platinum Compounds Dec 49
(Contd)

Vol LXVII, No 1) on crystalline structure of Chugayev's chlorides. Studies conducted with aid of X-rays. Presents diagram of crystalline structure of salts studied.

155T13

155T13

ZVYAGINTSEV, O.

ZVYAGINTSEV, O.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0

USSR/Chemistry - Laboratory Organization Aug 49
Technology

"Review of A. V. Vinogradov's 'Organization of Plant Laboratories in the Chemical Industry,'" O. Zvyagintsev, 1¼ pp

"Zhur Prik Khim" Vol XXII, No 8

Stresses importance of proper laboratory techniques from the production standpoint and in relation to the training of new student workers, and considers several phases of the industry. Published by Goskhimizdat, 1948, 192 pp.

67/49T59

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0

21779 ZUYAGINTSEV, O. YE. Pamyati zamechatel'nogo [illegible] Nikolaya Fedorovicha Fedorova. (1869 - 1945) Izvestiya Sektora platiny i drugikh blagorod. metallov (In-t obshchey i neorgan. khimii im. Kurnakova), vyp. 23, 1949, s. 5-8, s. portr.

SO: Letopis' Zhurnal'nykh Statey, No. 29, Moskva, 1949

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

6

Chloridation of platinum metals with ammonium chloride. O. E. Zvyagintsev and L. D. Plaksina. *Izvest. Sektora Platiny i Drugikh Blagorod. Metal. Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.* No. 24, 121-8(1949).—Pt and Pd were chloridated with NH_4Cl 1:2 at 250-400°. The reaction is more effective when metals are finely divided and in the presence of Fe and Cu but not Ni. Excess NH_4Cl gave no advantage. Chloridation dropped sharply at temps. above 480°. Pd is chloridized more easily than Pt.

M. Hosch

ZVYAGINTSEV, O. Ya.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

12 to 15 May 1948, Moscow, first conference was held on history of Soviet chemistry, convened by Commission on the History of Chemistry, Acad Sci USSR. Many papers were presented by (ostensibly) members of this Commission.

"Studies of Platinum Group Metals in the USSR." (Inst Gen and Inorgan Chem imeni N.S. Kurnakov, Acad Sci USSR).

"Materials on the History of Soviet Chemical Science," published by Acad Sci USSR in Moscow-Leningrad 1950. #283498.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

Ruthenium geochemistry. O. E. Zvyagintsev. Izvest. Sektora Platiny i Drug. Blagorod. Metal., Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R. 25, 120-31 (1950). The geochem. history of Ru cannot at present be traced from beginning to end. Complete data for such work are not as yet available. Its locations in the earth crust, its distribution, and its position among the Pt metals group are defined in general. The results are summarized in a diagram.

W. M. Sternberg

ZVYAGINTSEV, O. Ye.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

"Works on Chemistry in Publications of Soviet Institutes and Universities," Zhurnal Prikladnoy Khimii, Vol. 24, No. 12, 1951, pp 1326-1328; (W-22576, 2 May 52)

(ARTICLES LISTED with comments)

ZVYA

Metal ②

Chemical Abstracts
Vol. 48 No. 5
Mar. 10, 1954
General and Physical Chemistry

Vladimir Aleksandrovich Nemilov. O. E. Zvyagintsev. *Izvest. Sektora Platiny i Drug. Blagorod. Metal., Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.* 26, 7-16 (1951).—A detailed chronological listing of his investigations. His work on the ternary alloy systems of the precious metals is emphasized.
I. R. Behrman

Platinum

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

L. A. Chugayev's chloropentaminoplatino-chloroplatinate. Izv. Sekt. plat. i blag. met. no 26, '51.

<u>Monthly</u> <u>List</u> <u>of</u> <u>Russian</u> <u>Accessions</u>, Library of Congress, May 1952. Unclassified.

ZVYAGINTSEV, O. Ye., PROF

PA 174T14

USSR/Chemistry - Silicon Jan 51

"Silicon Monoxide," Prof O. Ye. Zvyagintsev

"Priroda" Vol XL, No 1, p 52

Reviews USSR work on SiO and states M. S. Beletskiy and M. B. Rappoport, "Dok Ak Nauk SSSR" Vol LXXII, No 4, 699, 1950, have confirmed roentgenologically the existence of SiO. Points out importance of this compd in electrothermic processes and states 22% of silicon is lost in form of SiO in production of Al-Si alloys.

LC 174T14

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.

3

① Geo

Meteorological Abst.
Vol. 4 No. 3
March 1953
Climatology and Biocl i-
matology

4.3-257

Zviagintsev, O. E., Radioaktivnost' i teplovoi rezhim zemli. [Radioactivity and heat 551.583.7:539.16
regime of the earth.] *Priroda*, Moscow, 40(12):44, Dec. 1951. DWB—At present the solar
energy absorbed by the earth amounts to 1.9×10^{18} cal/hr and the energy from radioactive
elements amounts to 0.47×10^{18} cal/hr. In past geologic ages the energy derived from radio-
active decay was considerably greater and can be calculated by the equation $Q_0 = Q_t \times e^{\lambda t}$,
where Q_t = quantity of heat of radioactive origin *t* years ago; Q_0 = quantity of heat produced
by any radioactive element at present; λ = condition of radioactive decay in cal/hr. Data
on quantity of heat in cal/hr produced by radioactive elements at present and in the past are
given in a table. *Subject Headings:* 1. Geological climates 2. Radioactivity of the earth.—
I.L.D.

TRANS - 2524467, 30 Apr. 54

ZVYAGINTSEV, O.

Chemistry - Bibliography

Works on chemistry published by scientific-research institutes and higher technical schools
Zhur. prikl. khim. 25 no. 4 (1952).

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

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O. YE.

Grinberg, Aleksandr Abramovich, 1898-

"Introduction to the chemistry of complex compounds." A. A. Grinberg. Reviewed by O. Ye Zvyagintsev. Zhur. prikl. khim., 25, no. 7, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 1952 1953, Uncl.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.

[illegible]

USSR/Czechoslovakia, Chemistry - Bibliography Aug 52

"Khimiya' (Chemistry), Russian-Language Periodical of the Czechoslovak Central Chemical and Polarographic Institutes, Prague," O. Zvyagintsev

"Zhur Prik Khim" Vol 25, No 8, p 903 [illegible]

Reference is made to "Khimiya," 1st published in Prague in mid-1951, to create intimate cooperation between Czech scientists and Soviet scholars. The periodical is to be published 6 times yearly and comprise 1,000 pp per yr. Vol I, No 1 and 2

228T14

appeared in 1951, with the latter including a bibliography, for 1950, of work done in polarography throughout the world. Most of the articles deal with org chemistry. Some articles treat of analytical chemistry, and others are in the field of polarography. (Czechoslovakia, as the birthplace of polarography, is carrying on extensive work in that field, according to Zvyagintsev.) An original article by J. Heyrovsky and M. Matias, "The Action of Surface Films on the Polarization of Capillary Electrodes," is mentioned.

228T14

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

1. ZVYAGINTSEV, O. Ye.

2. USSR (600)

4. Metallography

7. Metallic state of an element. (A. I. Gorbov's priority in concepts of the nature of metals). Zhur. prikl. khim. 25, No. 9, 1952.

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

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

1. ZVYAGINTSEV, O. Ye.

2. USSR (600)

4. Chemistry - Bibliography

7. Transactions of research institutes. Reviewed by O. Ye. Zvyagintsev. Zhur. prikl. khim. 25, No. 12, 1952.

9. <u>Monthly List of Russian Accessions.</u> Library of Congress. March, 1953. Unclassified

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ARBUZOV, A.Ye., akademik; KAZANSKIY, B.A., akademik; PETROV, A.D., chlen-korrespondent AN SSSR; NIKITIN, N.I., chlen-korrespondent AN SSSR; FIGUROVSKIY, N.A., professor, otvetstvennyy redaktor; POGODIN, S.A., professor; ZVYAGINTSEV, O.Ye., professor; YEVTEYEVA, P.M., uchenyy sekretar'.

[Materials on the history of Soviet chemistry; reports given at the 2nd All-Union Conference on the History of Soviet Chemistry, 21-26 April 1951] Materialy po istorii otechestvennoi khimii; sbornik dokladov na vtorom Vsesoiuznom soveshchanii po istorii otechestvennoi khimii, 21-26 aprelia 1951 g. Moskva, Izd-vo Akademii nauk SSSR, 1953. 318 p. (MLRA 7:4)
(Chemistry--History)

ZVYAGINTSEV, O.

Bibliography. Zhur.prikl.khim. no.11:1231-1232 N '53. (MIRA 6:11)
(Chemistry--Periodicals) (Chemistry, Technical--Periodicals)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O. [reviewer].

"Transactions of the Voronezh State University, vol. 23. Collection of papers of the Department of Chemistry." "Transactions of the All-Union Institute of the Soda Industry, vol. 6." Reviewed by O.Zviagintsev. Zhur.prikl.khim. 26 no.9:1003-1004 S '53. (MLRA 6:10)

(Chemistry) (Soda industry)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye. [reviewer]; VOL'FKOVICH, S.I.; YEGOROV, A.P.; EPSHTEYN, D.A.
[authors].

"General chemical technology." S.I.Vol'fkovich, A.P.Egorov, D.A.Epshtein.
Reviewed by O.E.Zviagintsev. Zhur.prikl.khim. 26 no.12:1323-1324 D '53.
(MLRA 6:11)

(Chemistry, Technical) (Vol'fkovich, Semen Isaakovich) (Egorov, A.P.)
(Epshtein, D.A.)

1. ZVYAGINTSEV, O. YE, Prof.

2. USSR 600

4. Rocks, Crystalline and Metamopphic

7. Recrystallization of rocks, Briroda, 42, No. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye.

[redacted]

Transactions of scientific research institutes. Zhur.prikl.khim.
27 no.2:227-228 F '54. (MIRA 7:2)
(Technology) (Science)

ZVYAGINTSEV, O. Ye.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

AID - P-103

Subject : USSR/Chemistry

Card : 1/1

Authors : Dobryanskiy, A. F., and Zvyagintsev, O. Ye.

Title : Bibliography

Periodical : Zhur. Prikl. Khim. 27, no. 4, 466-468, 1954

Abstract : A book Chemical Refining of Petroleum by R. Goldstein (translated into Russian by N. S. Dabagov) is reviewed. Some articles from Transactions of the Scientific Research Institute of Glass, no. 32, 1953. Transactions of the Moscow Institute of Fine Chemical Technology im. M. V. Lomonosov, no. 3, 1952, and Transactions of the Khar'kov Polytechnic Institute im. V. I. Lenin. Vol. 1, Chemical-technological Series, no. 1, 1952 are listed.

Institution : None

Submitted : No date

ZVYAGINTSEV, O. E.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

4

I. Ya. Bashilov, K. A. Bol'shakov, O. E. Zvyagintsev, and N. P. Sazhin. J. Appl. Chem. U.S.S.R. [illegible] (Engl. translation). See C.A. 48, 11125d.

B. M. K.

②

ZVYAGINTSEV, O. Ye.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

"The Chemistry of Ruthenium," a paper presented at the Atoms for Peace Conference, Geneva, Switzerland, 1955

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye.

[Chemistry of ruthenium] Khimiia rutenia. Moskva, 1955.
4 p. (MIRA 14:6)

(Ruthenium)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye.

I.V. Avdeev's research on gold nuggets and the metallurgy of gold. Trudy Inst.ist.est.i tekh. vol.6:152-159 '55. (MLRA 9:5)
(Avdeev, Ivan Vasil'evich, d. 1865) (Gold--Metallurgy)

ZVYAGINTSEV, O.Ye.

[redacted]

History of Ural platinum. Trudy Inst.ist.est.i tekh. vol.6: 160-204 '55. (MLRA 9:5)

(Ural Mountain region--Platinum)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O. YE.

AID P - 1571

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 1/21

Authors : Vol'fkovich, S. I., Zvyagintsev, O. Ye., and Yegorova, Ye. N.

Title : Yuriy Vitaliyevich Marachevskiy
On the occasion of his 60th birthday and the 35th anniversary of his scientific and teaching activities

Periodical : Zhur. prik. khim., ~~24~~ 28, no.1, 3-6, 1955

Abstract : Biographic sketch with photograph.

Institution: None

Submitted : No date

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

2 Zvyagintsev, O. Ye.

AID P - 2273

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 18/19

Author : Zvyagintsev, O. Ye.

Title : Zelikman, A. N., G. V. Samsonov, and O. Ye. Kreyn
Metallurgiya redkikh metallov (Metallurgy of Rare Metals)
Moscow, 1954. (Book review)

Periodical: Zhur. prikl. khim., 28, no.2, 226-227, 1955

Abstract : Critical review. According to the reviewer, Part I of the book gives general information on metallurgy, rare metals and the rare metals industry. Part II is devoted to the description of tungsten, molybdenum, tantalum, niobium, titanium, and zirconium.

Institution: None

Submitted : No date

ZVYAGINTSEV, O. YE.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

AID P - 2274

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 19/19

Authors : Zvyagintsev, O. Ye.

Title : Tananayev, I. V., S. A. Pogodin, Ye. Ya. Rode, V. G. Tronev, and I. B. Mizetskaya, eds., Khimiya redkikh elementov. Vypusk I (Chemistry of Rare Elements. Issue I) Academy of Sciences, USSR. 1954. (Book review)

Periodical: Zhur. prikl. khim., 28, no.2, 228, 1955

Abstract : The reviewer states that the book consists of 13 papers on rare elements. Titles of some of the papers are given.

Institution: Academy of Sciences of the U.S.S.R.

Submitted : Published in 1954 (Moscow)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye.; VALYASHKO, M.G.

Fedor Aleksandrovich Toropov; 1884-1953. Zhur.prikl.khim. 28 no.12: 1345-1346 D '55. (MLRA 9:3)
(Toropov, Fedor Aleksandrovich, 1884-1953)

ZVYAGINTSEV, O.Ye.; SUDARIKOV, B.N.

Complex metal salicylates. Part 1. Izv.Sekt.plat.i blag.met. no.31: 78-94 '55. (MLRA 9:5)

(Salicylates) (Compounds, Complex)

ZVYAGINTSEV, O. E.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

USSR/Chemistry - Physical chemistry

Card 1/1	Pub. 22 - 24/51
Authors :	Zvyagintsev, O. E., and Karandasheva, E. F.
Title :	About the trans-activity of certain intra-spheral substitutes in complex divalent Pt compounds
Periodical :	Dok. AN SSSR 101/1, 93-95, Mar 1, 1955
Abstract :	Experiments were conducted to determine the kinetics of the formation of cisdiamines of divalent platinum from triacidomonoamino potassium platoates and the trans-activity of intra-spheral substitutes in the complex divalent Pt compounds. The constants of the reaction rate were computed according to a formula intended for reactions of the second order. The time of the semireaction period was found to be inversely proportional to the initial concentration which is also characteristic of the second line reaction. The experimental results obtained during four bimolecular reactions are tabulated. Five USSR references (1927-1954). Tables.
Institution :	Acad. of Sc., USSR, The N. S. Kurnakov Institute of Gen. and Inorg. Chem.
Presented by :	Academician I. I. Chernyaev, September 24, 1954

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

BUSEV, Aleksey Ivanovich; ZVYAGINTSEV, O.Ye., professor, doktor khimicheskikh nauk, otvetstvennyy redaktor; SHEVCHENKO, G.N., tekhnicheskiy redaktor

[Analytical chemistry; literature in Russian (1941-1952)] Analiticheskaia khimiia; literatura na russkom iazyke (1941-1952gg). Moskva, Izd-vo Akademii nauk SSSR, 1956. 403 p. (MLRA 9:7)
(Bibliography--Chemistry, Analytical)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye.; SUDARIKOV, B.N.

Complex salicylates of certain metals. Part 2. Zhur.neorg.khim.1 no.1:69-75 '56. (Salicylates) (MIRA 9:10)

ZVYAGINTSEV, O.Ye.

Development of A.M. Butlerov's theory of chemical structure in inorganic chemistry. Vop. ist.est. i tekh. no.1:70-81 '56. (MLRA 9:10)

(Chemistry, Inorganic)
(Butlerov, Aleksandr Mikhailovich, 1828-1886)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye.; NIKOLAYEV, A.V.

Abram Mikhailovich Rubinshtein; obituary. Zhur.neorg.khim.1 no.4: 609-614 Ap '56. (MIRA 9:10)

1.Institut obshchey i neorganicheskoy khimii Akademii nauk SSSR. (Rubinshtein, Abram Mikhailovich, 1909-1955) (Bibliography--Compounds, Complex)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye.

"Collected works" of the M.I. Kalinin Institute of Nonferrous Metals and Gold in Moscow. Zhur.neorg.khim. 1 no.2:349-350 F '56. (MLRA 9:10)

(Metals)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye., professor.

[redacted]

"History of chemical industries in Russia" by P.M.Luk'ianov. Vol.4
Reviewed by O.E.Zviagintsev. Khim.nauka i prom. 1 no.6:723 '56.
(MIRA 10:3)

(Chemical industries--History)
(Luk'ianov, P.M.)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye.

Boris Alekseevich Muromtsev; obituary. Zhur. neorg. khim. 1 no.12: 2649-2651 D '56. (MIRA 10:6)

(Muromtsev, Boris Alekseevich, 1898-1956)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye.

"The metallurgy of rare metals" by G.A. Meerson and A.N. Zelikman. Reviewed by O. E. Zviagintsev. Zhur.prikl.khim. 29 no.8:1303-1304 Ag '56. (MIRA 10:10)

(Metals, Rare and minor--Metallurgy)
(Meerson, G.A.) (Zelikman, A.N.)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.YE.

C.

USSR/ Inorganic Chemistry. Complex Compounds

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11468

Author : Zvyagintsev O.Ye., Karandasheva Ye.F.
Inst : Academy of Sciences USSR
Title : Concerning Quantitative Characteristics of Trans-Effect in Complex Compounds of Tetravalent Platinum

Orig Pub : Dokl. AN SSSR, 1956, 108, No 3, 477-480

Abstract : Studied was the kinetics of halogen replacement by C_5H_5N in compounds of Pt(4+). Objects of investigation were triamines $[(NH_3)_3PtCl_2X]$ Cl, $[EnPt\text{-}NH_3NO_2ClX]$ Cl and salts of Blomstrand type $[(NH_3NO_2)_2PtClX]$, where X -- Cl, Br, NO_2. In all instances the reactions take place only on coordinate Cl - Pt - Cl (Br) or Cl - Pt - NO_2. All reactions are bimolecular. Data obtained show that replacement of Cl by Br causes increase of velocity constant k in the case of $[(NH_3)_3PtClBrCl]$ Cl and $[(NH_3NO_2)_2PtBrCl]$ almost by 3 times, and in the case of $[EnPtNH_3NO_2BrCl]$ by 2.3

1/2

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

C.

USSR/ Inorganic Chemistry. Complex Compounds

Abs Jour : Referat Zhur- Khimiya, No 4, 1957, 11468

times. Replacement reactions on NO_2 - Pt - Cl coordinates proceed very slowly. Values of k for compounds of this coordinate are 3 times smaller than the k values of the corresponding compounds of reactive coordinates Cl - Pt - Cl. On use of acetone as the solvent, in lieu of water, the values of k remain almost unchanged. On the basis of a comparison of the values of k for compounds of Pt(4+) and Pt2+) the conclusion is reached that the same NO_2-substituent behaves differently in Pt(2+)- and Pt(4+)-series.

2/2

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

AUTHOR: Zvyagintsev, O. Ye.

TITLE: VII All-Union Conference on the Chemistry of Complex Compounds, 9-13 October, 1956. (VII Vsesoyuznoye soveshchaniye po khimii kompleksnykh soyedineniy 9-13 oktyabrya 1956 g.)

78-3-34/35

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1957, Vol.II, Nr.3, pp. 704-708. (USSR)

ABSTRACT: In this article very brief abstracts are given of matter presented at the VII All-Union Conference on the Chemistry of Complex Compounds, organised by the Institute of General and Inorganic Chemistry imeni N. S. Kurnakova, of the Academy of Sciences of the USSR from 9-13 October, 1956. The meetings were held at the Leningrad Technological Institute, imeni Lensoveta, and were attended by 250 scientists from Leningrad, 220 representatives from research establishments from other towns in the USSR, and also by scientists from Czechoslovakia, Poland and Hungary. Altogether 57 reports were presented. At the con-

Card 1/2

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.

USSR/General Problems. Methodology. History. Scientific Institutions and Conferences. Teaching. Problems of Bibliography and Scientific Documentation. A

Abs Jour : Ref Zhur-Khimiya, No 6, 1958, 16703

Author : Zvyagintsev O.
Inst : Institute of General and Inorganic Chemistry Academy of Science USSR.
Title : Vyacheslav Vasil'yevich Lebedinskiy

Orig Pub : Zh. neorganicheskoy khimii, 1957, 2, No 8, 1713-1719

Abstract : Obituary of V. V. Lebedinskiy, (1888-1956) a corresponding member of the Academy of Sciences USSR, and outstanding researcher in the field of complex compounds (Institute of General and Inorganic Chemistry Academy of Sciences USSR). A list of scientific work is given.

Card 1/1

Letter to the editors; in connection with A.F. Kapustinskii's erroneous assumption on the discovery of ruthenium by A. Sniadetskii. Zhur. neorg. khim. 2 no.12:2839-2840 D '57. (MIRA 11:2)

(Ruthenium)

(Kapustinskii, A.F.) (Sniadetskii, A.)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

AUTHOR: ZVYAGINTSEV,O. 89-9-25/32

TITLE: Nitrose Oxalate Compounds of Ruthenium. (Nitroso-oksalatnyye soyedineniya ruteniya)

PERIODICAL: Atomnaya Energiya, 1957, Vol 3, Nr 9, pp 272-273 (U.S.S.R.)

ABSTRACT: At the Institute for General and Anorganic Chemistry of the Academy of Science of the U.S.S.R. the following synthetization and investigation was carried out:

1.) $(NH_4)_2 [RuNO (C_2O_4)_2]$; 2.) $Mg [RuNO (C_2O_4)_2]$;

3.) $Ca [RuNO (C_2O_4)_2].6H_2O$; 4.) $H_2 [RuNO (C_2O_4)_2]$.

ASSOCIATION: Not given

PRESENTED BY:

SUBMITTED:

AVAILABLE: Library of Congress

Card 1/1

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye.

"Transactions of the technical conference on the calcination of materials in the boiling layer". Zhur.prikl.khim. 30 no.7:1118-1119 Jl '57. (MIRA 10:10)

(Thermochemistry)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

ZVYAGINTSEV, O.Ye.

LEONIDOV, N.K.

25(5) PHASE I BOOK EXPLOITATION SOV/1497

Akademiya nauk SSSR. Institut nauchnoy i tekhnicheskoy informatsii

Metallurgiya SSSR, 1917-1957, t. 1 (Metallurgy of the USSR, 1917 - 1957, Vol. 1) Moscow, Metallurgizdat, 1958. 745 p. 3,000 copies printed.

Ed. (Title page): I. P. Bardin, Academician; Ed. (Inside book): G. V. Popova; Tech. Ed.: O. G. Bakher.

PURPOSE: The book is intended for scientific workers and engineers in metallurgical plants and in the machine-building industry. It may also be used by students in advanced courses in metallurgical vuzes.

COVERAGE: This collection of articles covers extensively practical and theoretical developments in Soviet metallurgy during the last 40 years. The material deals with the discovery and development of the major ore deposits and the growth of the metal industry in various parts of European and Asiatic USSR. Research institutes, laboratories, their location, and the names of the scientists and engineers involved are listed. Many papers contain so many references and names of various personalities that it was considered beyond the scope of the coverage of each article to list them. The authors claim that the processes, methods and theories described in this book reflect the most recent developments in Soviet metallurgy.

Card 1/21

Metallurgy of the USSR (Cont.) SOV/1497

litically high purity metallic titanium comparable to that produced by the thermic method. There is 1 Soviet reference.

Petrov, D.A. Metallurgy of Semiconductors 638

Germanium and silicon are regarded as the two most important semiconductor materials. As the properties of semiconductors are related to impurities, new methods had to be developed to obtain high-purity crystals of Si and Ge. One method used was to break up by thermal processes the less stable compounds of these elements, in this case SiJ, and SiI, the latter being easier to split at lower temperatures. Another method involves the reduction of the compound by an active element such as hydrogen. Other approaches such as crystallization are mentioned. A method of obtaining monocrystals proposed by Chokhral'skiy in Poland is explained as is its application in the construction of a composition diagram. In conclusion it is pointed out that further experiments in this field are necessary to discover the properties of new materials, their compounds and solid solutions. There are 15 references, 13 Soviet, 1 English, and 1 French.

Zvyagintsev, O.Ye. The Metallurgy of Noble Metals 656

The article deals with the extraction and processing of gold, platinum and several other rare metals. Experimental work of this nature is

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Metallurgy of the USSR (Cont.) SOV/1497

presently centered in Moscow at the Nigrizoloto Institute. Gold extracting is done by amalgamation, cyaniding, and chlorination. Another method involves the smelting of gold-bearing copper, lead, and nickel ores with subsequent extraction of gold by electrolysis. Cyaniding is the chief method of gold extraction at present. Activated charcoal is used to precipitate noble metals from the solution and also to adsorb metals which are later recovered by flotation. To obtain high-purity platinum powder, metallurgical methods are most commonly used. Platinum wire for thermocouples, wires and sheets of iridium, rhodium, and ruthenium are manufactured by this method. One of the future tasks is the discovery of new applications for platinum, ruthenium, and palladium in the field of chemistry as catalysts, in electrical engineering as semiconductors and in other fields. There are 53 Soviet references.

Vol'skiy, A.N. Theoretical Principles of Nonferrous Metallurgy 668

Many theoretical aspects of nonferous metallurgy have been investigated by Soviet engineers and technicians. Over a hundred personalities are mentioned who have made contributions to this field of metallurgy. Some of the work includes studies of the thermodynamics of reactions of nonferrous metals, the theory of roasting, smelting, and the reduction of metals. Other investigators explored the chemical and physical properties

Card 19/21

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0

ZVYAGINTSEV, O. YE., NIKOLSKIY, V. D., STAROSTIN, S. N., KUZHANOV, A. and SHMIDT, V. S.

"Chemistry of Radiortuthenium,"

paper to be presented at 2nd UN Intl. Conf. on the preaceful uses of Atomic Energy, 1 - 13 Sept 58.

ZVYAGINTSEV, O.Ye., prof.

Advances in the chemistry of complex compounds. Khim. nauka i prom. 3 no.1:93-97 '58. (MIRA 11:3)

(Complex compounds)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

78-3-4-26/38

AUTHORS: Zvyagintsev, O. Ye., Sudarikov, B. N.

TITLE: Plutonium Salicylates (Salitsilaty plutoniya)

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1958, Vol. 3, Nr 4, pp. 975-985 (USSR)

ABSTRACT: The reaction of tri- and tetravalent plutonium in solutions with salicylic acid and ammonium salicylate were investigated.
It was found that tetravalent plutonium salicylate of the following composition is formed in weakly acidous medium: $PuO(Sal^-)_2$.
Under the same conditions plutonium-(III) precipitates as $Pu^{3+}(Sal^-)_3 \cdot 1,5\ H_2O$.
The optimum conditions for the precipitation of the salicylates of tri- and tetravalent plutonium were determined.
A quantitative precipitation of plutonium salicylate was determined at pH = 4 - 5.
The salicylates of plutonium-(IV) precipitated at pH = 1-5 contain only Pu-(IV) as an ion and the salicylate ion.
Also the reaction of plutonium salicylates of different reagents was determined.

Card 1/2

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Plutonium Salicylates

On the action of strong acids the plutonium salicylates decompose with the corresponding acid. On the action of concentrated lyes plutonium hydoxides are formed. Plutonium salicylate dissolves with ammonium carbonate solution under the formation of carbonate complexes. Plutonium salicylate is soluble in the following organic solvents: alcohol, acetone, ether, amylacetate. It is, however, insoluble in chloroform and carbon tetrachloride.

The comparative investigations of the tendency to form complexes between plutonium-(III) and plutonium-(IV) show that the salicylates of trivalent plutonium are less stable than the tetravalent ones. On the action of ammoniacal solutions on the salicylates of tri-, tetra- and hexavalent plutonium always oxysalicylates of plutonium-(IV) precipitate on heating. This fact was also proved by chemical, thermographical and radiometric analyses. The optimum conditions for the precipitation of plutonium oxysalicylate were determined. There are 25 tables and 4 references, 2 of which are Soviet.

SUBMITTED: November 16, 1957

Z V

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720009-0"

AUTHORS: Zvyagintsev, O. Ye., Shubochkina, Ye. F. 78-3-5-15/39

TITLE: A Study of the Kinetics of the Reactions of Substitution in Bivalent Platinum Compounds (Izucheniye kinetiki reaktsiy vnutrisfernogo zameshcheniya v soyedineniyakh dvukhvalentnoy platiny)

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1958, Vol 3, Nr 5, pp 1139-1148 (USSR)

ABSTRACT:

The paper in question goes into the kinetics of substitution in the inner sphere of platinum II-compounds.
The effect of pyridine onmonamines of bivalent platinum was observed. The kinetics of the reaction of substitution in monamines of platinum II was investigated at temperatures of 2o,25,3o and 35°C. All the analysed reactions are of second grade. The constants of the velocity of reaction and the activity of energy were computed. From kinetic investigations it was found that the coordination NO_2-Pt-Cl was the most reactive and that the coordination Cl-Pt-Cl was the least. According to their activity in reaction, the coordinationscan be classified as follows:

Card 1/3

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NO_2-Pt-Cl > NO_2-Pt-NO_2 > Br-Pt-Cl > Cl-Pt-Cl.

From research of the kinetics of compensation of groups in the inner sphere of complex compounds of platinum II, one is also able to estimate the displacement of the individual coordinative groups quantitatively. By means of the constant of velocity of the reaction of displacement, it was found that the bromine-ion in the inner sphere is 3 times more displaceable than that of chlorine. The NO_2-groups are endowed with a capacity of displacement which is 10 times that of chlorine and 4 times greater than that of bromine. The reactions of displacement of chlorine in the inner sphere were investigated with pyridine in the following platinum II-compounds:
$K[PtNH_3NO_2ClNO_2]$, $K[PtNH_3ClBrCl]$, $K[PtNH_3ClNO_2Cl]$, $K[PtNH_3Cl_3]$, $K[PtC_2H_4Cl_3]$ and the NO_2-group in $K[PtNH_3ClNO_2NO_2]$.
There are 1 figure and 14 references, 14 of which are Soviet.

Card 2/3

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A Study of the Kinetics of the Reactions of Substitution in Bivalent Platinum Compounds 78-3-5-15/39

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1. Platinum compounds--Substitution reactions 2. Pyridines --Substitution reactions

Card 3/3

ZVYAGINTSEV, O.Ye.; SHUBOCHKINA, Ye.F.

Study of the kinetics of internal sphere substitution in tetravalent platinum compounds. Zhur. neorg. khim. 3 no.5:1149-1161 My '58. (MIRA 11:6)

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(Platinum organic compounds)
(Complex compounds)