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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Heteropoly compounds. III. Crystallohydrates of phosphotungstates and phosphomolybdates. A. V. Rakovskii and E. A. Nikitina. *J. Gen. Chem.* (U. S. S. R.) 2, 681-90(1932); cf. *C. A.* 26, 4883.—The individual properties of the heteropoly compds. of phosphotungstates and phosphomolybdates possess inconst. water contents, which are difficult to bring into stoichiometric relation. The character of the water in these compds. was investigated by the detn. of the vapor tension at const. temps. by the van Bemmelen method, and at different temps. by the tensimetric method.

Chas. Blanc

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CA

6

Equilibrium in the system NH_4NO_3, $NaNO_3$, H_2O
B. A. Nikitina. *J. Gen. Chem.* (U. S. S. R.) 3, 513-18 (1933). A systematic study of the systems NH_4NO_3, $NaNO_3$, H_2O, NH_4NO_3-H_2O and $NaNO_3$, H_2O, in the temp. interval 0-98°. The results are compared with those of other investigators. S. L. Madorsky

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PROCESSES AND PROPERTIES INDEX

Preparing potassium nitrite by double decomposition reactions. E. A. Nikitina. *J Applied Chem U S S R* 6, 12-15(1933). The reaction $NaNO_2 + KCl = KNO_2 + NaCl$ gives a product contg 88.59-97% KNO_2. The admixed NaCl cannot be eliminated by recrystn. Removal by means of Ag salts is not economical. Double decompn. of $NaNO_2$ and K_2CO_3 gives a yield of 72% and more. This method is commercially suitable. A. A. Boehtlingk

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1ST AND 2ND ORDERS

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Composition and properties of potassium phosphotungstate. E. A. Nikitina. *J. Gen. Chem.* (U. S. S. R.) 9, 1133-6(1935).—Analyses show that the compn. of H_2O-free K phosphotungstate is $3K_2O \cdot P_2O_5 \cdot 24WO_3$; the H_2O-contg. mol. is $K_3H_4[P(W_3O_9)_4]$. Its properties were studied with a view to utilizing the formation of this compd. as a method of quant. analysis for K. The ppt. formed in the reaction of a K salt soln. with $H_7[P(W_3O_9)_4]$ is microcryst. It is difficult to filter and it settles very slowly. The salt is sol. in H_2O but difficultly sol. in HCl soln. Its soly. in 18% HCl is 0, 0, 0, 0.10, 0.44, 0.67 and 0.80 g. per 100 g. soln., at 0, 20, 43, 53, 70, 80 and 90°, resp. $H_7[P(W_3O_9)_4]$ can be used for the detn. of K in the absence of Na or for detection of K in the presence of Na. S. L. Madorsky.

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Heteropoly compounds. V. The solubilities of some heteropoly compounds. A. V. Rakovskii and E. A. Nikitina. *J. Gen. Chem.* (U. S. S. R.) 6, 50-4(1936). cf. *C. A.* 28, 2635[1].—The solubilities of the following complex compds. in water are detd. at temps. from 0° to 98°: phosphotungstic acid and its di- and tri-Na salts and phosphomolybdic acid and its tri-Na salt. The soly. method, as well as the vapor-pressure method, indicates that these compds. do not form well-defined hydrates but rather have metastable hydrate regions. The soly. of tri-Na phosphotungstate (I) in the presence of NaCl, studied in the range 0–98°, decreases greatly with increase in NaCl concn. At 20°, the soly. of pure I is 47.39%; in a soln. contg. 5.17% NaCl it is 10.50% and in one contg. 26.19% it is only 0.14%.

John Livak

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A-3

BC

Salts of phosphotungstic and metatungstic acids with organic bases. E. A. Nikitina (J. Gen. Chem. Russ., 1936, 6, 1634—1641).—The salts R_2HX, R'_2H_2X, R''_2X, R_2H_2X', R'_2H_2X', and R''_2H_2X', nH_2O (R = quinoline, R' = C_5H_5N, R'' = NH_2Et, $X = [P(W_3O_{10})_4]_3$, $X' = [H_2(W_3O_{10})_6]$) are described. The solubility of the salts in 14% HCl at 0—100° is determined; R_2HX and R_2H_2X' are insol. R. T.

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6

Preparation and some properties of phosphotungstic

acid. E. A. Nikitina. J. Gen. Chem. (U. S. S. R.) 7, 2000-12(in French 2012)(1937). Various methods for the prepn. of $H_3[P(W_3O_9)_4]$ were tested exptly. Dexel's Ber. 20, 1452, 1887) method, $2Na_3H_4[P(W_3O_9)_4]$ + $2BaCl_2$ = $2BaH_2[P(W_3O_9)_4]$ + 4NaCl and then pptg Ba with H_2SO_4 to obtain the acid was found to be the best. The successful prepn. of this acid in pure state depends on many details, particularly on its recrystn. from aq. soln followed by dissolution in H_2O and extn. with ether.

S. L. Madorsky

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1ST AND 2ND ORDERS

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18

Preparation of phosphomolybdic acid. E. A. Nikitina. *J. Applied Chem.* (U. S. S. R.) 10, 1194-8(in French 1198)(1937).—The Debray and Drechsel methods were investigated. The best yield (80-85%) was obtained by direct synthesis, with H_3PO_4 and MoO_3 in water. Nine references. A. A. Podgorny

COMMON ELEMENTS

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3RD AND 4TH ORDERS

BC

1

Ice-field in the system $FeCl_3$-HCl-H_2O. N. S. KURNAKOV and E. A. MIRITINA (Bull. Acad. Sci. U.R.S.S., 1938, Sér. Chim., 433—436).—The rectilinear isotherms found are ascribed to the absence of undissociated compounds in the system. L. J. J.

CHEMICAL ELEMENTS

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CA

6

Composition and properties of silicomolybdic acid. E. A. Nikitina. *J. Gen. Chem. (U. S. S. R.)* 8, 751-8 (1938). The best methods of prepg. silicomolybdic acid, $H_4[SiMo_{12}O_{40}]$, were found to be those which follow the reactions: (1) $12Na_2MoO_4 + Na_2SiO_3 + 13H_2SO_4 = 13Na_2SO_4 + H_4[SiMo_{12}O_{40}] + 9H_2O$ and (2) $H_2SiO_3 + 6Na_2O \cdot 12MoO_3 + 10HCl = H_4[SiMo_{12}O_{40}] + 10NaCl + 2H_2O$. Soly. of silicomolybdic acid in H_2O was studied in the interval 24.7°-60°. At 50° the acid decomps. in H_2O. A study was also made of the vapor pressure of the hydrate at room temp. Seventeen references. S. I. Madorsky

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

Structure of iso- and hetero-poly compounds F. A. Nikitina. *Uspekhi Khim.* 8, 880-930(1930). Theoretical and review. N. discusses equil. in isopoly compds. of the types $Na_2Cr_2O_7$, R_2MoO_4, $5R_2O \cdot 12WO_3$, H, H_2VO_4, isopoly columbates, tantalates, silicates, etc., of their state in aq. solns. and their Raman spectra. The structure of heteropoly compds. is considered from the point of view of Werner's theory, Röntgen data and the properties of their solns. 76 references. F. H. Rathmann.

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A

2

Equilibrium in the system Na_2Cl_2-$PtCl_4$-H_2O. N. S. Kurnakov and E. A. Nikitina. *J. Gen. Chem.* (U. S. S. R.) 10, 577-88(1940).—Solv. in the system Na_2Cl_2-$PtCl_4$-H_2O was investigated at 40, 60, 80, 90 and 98°. The solid phases at these temps. were (1) $PtCl_4.5H_2O$, $PtCl_4.5H_2O$ + $Na_2PtCl_6.6H_2O$ and $Na_2PtCl_6.6H_2O$; (2) $PtCl_4.4H_2O$, $PtCl_4.4H_2O$ + $Na_2PtCl_6.6H_2O$; (3) $PtCl_4.3H_2O$, $PtCl_4.3H_2O$ + $Na_2PtCl_6.6H_2O$, $Na_2PtCl_6.6H_2O$, $Na_2PtCl_6.6H_2O$ + NaCl and NaCl; (4) $PtCl_4.3H_2O$, $PtCl_4.3H_2O$ + $Na_2PtCl_6.6H_2O$, $Na_2PtCl_6.6H_2O$ and NaCl; and (5) $PtCl_4.2H_2O$, $PtCl_4.2H_2O$ + $Na_2PtCl_6.6H_2O$, $Na_2PtCl_6.6H_2O$, NaCl + $Na_2PtCl_6.6H_2O$ and NaCl. An increase of the $PtCl_4$ concn. with a decrease of the Na_2PtCl_6 concn. was observed on the 60-98° isotherms. Two modifications of $PtCl_4$ were srpd. that were yellow and red, resp. The systems Na_2PtCl_6-H_2O and $PtCl_4$-H_2O also were investigated at 80-98°. The 1st system had a solid phase $Na_2PtCl_6.6H_2O$; the 2nd system had a considerable variety of solid phases which have not been investigated.

A. A. Podgorny

Inst Gen + Inorg Chem, AS USSR

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Highly substituted sodium salts of phosphotungstic acid E. A. Nikitina *J. Gen. Chem.* (U. S. S. R.) 10, 779-84 (1940). Highly substituted Na salts of phosphotungstic acid are prepd. from $Na_3H_4[P(W_3O_7)_6]$ by successive stages of treating with 1 mol. NaOH and crystg. the concd. soln. in a vacuum desiccator (*C. A.* 26, 4003). The tetra- and penta-Na salts are cryst. compds., hexa-Na salt is a glass-like substance and hepta-Na salt is a viscous mass. All these salts show an acid reaction to litmus. A table showing their solubilities in H_2O at 0.98° is given. **Highly substituted sodium salts of phosphomolybdic acid.** *Ibid.* 997-1006. See *C. A.* 34, 5773[1]. Chas. Blanc

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3RD AND 4TH ORDERS

DC

A-1

Highly substituted sodium salts of phosphomolybdic acid. E. A. Nikitina (*J. Gen. Chem. Russ.*, 1940, 10, 987—1000).—Salts of the composition $nNa_2O,P_2O_5,24MoO_3$ ($n = 4$—11) have been prepared by adding the theoretical amount of NaOH to $Na_2[PO_4,Mo_{12}O_{36}.20OH]$. $11Na_2O,P_2O_5,24MoO_3$ and aq. NaOH yield Na_2HPO_4 and $5Na_2O,12MoO_3$. The structure of 24-phosphomolybdic acid is discussed in the light of these findings.

R. T.

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Multiple substituted sodium phosphomolybdates E. A. Nikitina. *Compt. rend. acad. sci. U. R. S. S.* 26, 370-1 (1940); in German. A number of salts of phosphomolybdic acids were obtained in which 4-11 H atoms were replaced by Na. They crystallize easily and are easily water-sol. The aq. solns. have an acid reaction. One of the, under-sodium phosphomolybdate, decomposes on being kept for 6 weeks. On attempting to substitute Na for the 12th H atom, the anion decomposed. A. H. Kraus

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CA

18

Recovery of rubidium and cesium from Solikamsk carnallite with silicomolybdic acid. E. A. Nikitina and A. G. Kogan. *J. Gen. Chem.* (U. S. S. R.) 11, 877-83 (1941).—To det. the possibility of recovery of Rb and Cs, a synthetic mixt. of solns. contg. 0.01 g. RbCl per ml., 10 g. K_2SO_4 in 100 ml. and 8 g. $MgSO_4$ in 5 ml. was gradually concentrated on a water bath; most of the K_2SO_4 was pptd.; the ppt. was washed with water cooled with ice. The soln. was acidified with H_2SO_4 and treated with a satd. soln. of silicomolybdic acid. The ppt. was filtered off and washed 5 times with H_2SO_4 (d. 1.22) and once with H_2O cooled to 0°, and then heated to incandescence to form $2Rb_2O.SiO_2.12MoO_3$. This was decomposed by soln. in NH_4OH on the water bath; the SiO_2 residue was filtered off, and the MoO_4 ion in soln. was pptd. by means of quinoline acetate soln. The filtrate from the quinoline molybdate was evapd. to dryness, the residue dissolved in H_2O, filtered, acidified with formic acid and pptd. with H_2S to remove the last traces of Mo. The MoS_2 precipitate was filtered off, the filtrate boiled to disappearance of H_2S odor and concentrated. Chloride or nitrate of Rb was obtained by treatment with HCl or HNO_3. Up to 83% of the RbCl was recovered from the synthetic carnallite mixt. The raw material contg. Rb and Cs salts was the spent electrolyte left after the electrolysis of carnallite for the extn. of metallic Mg. It contained KCl 76.80, $MgCl_2$ 4.51, $CaCl_2$ 2.90, NaCl 9.02, H_2O 5.15, SO_4 ions 0.002, insol. substances 0.97 and chlorides of rare alkalies 0.057%. This spent electrolyte was dissolved in H_2O, filtered, treated with H_2SO_4, and the soln. concd. to crystallize K_2SO_4, $CaSO_4$ and 0.1 to 0.2% of Mg compds. The soln. was acidified with H_2SO_4 and Rb was pptd. by free silicomolybdic acid in 10 hrs. The K_2SO_4 recovered can be used as fertilizer after the removal of HCl. Up to 93% of $MgCl_2$ was recovered after sepn. of $2Rb_2O.SiO_2.12MoO_3$.

A. A. Boehtlingk

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

BC

B 1

Separation of rubidium and cesium from the electrolyte residues of Solikamsk by means of silicomolybdic acid. E. A. Nikitina and A. G. Kogan (*Compt. rend. Acad. Sci. U.R.S.S.*, 1941, [illegible], 509—510).—RbCl and CsCl are obtained from the residues of the electrolysis of artificial carnallite for the production of Mg. The raw material has the composition: [illegible] 70-8, $MgCl_2$ 4-51, $CaCl_2$ 2-90, NaCl 9-[illegible], RbCl + CsCl [illegible], SO_4'' [illegible]. The Cl' is converted into SO_4'', thus bringing about a considerable decrease in solubility of the K, Ca, and Na salts without greatly affecting that of the Rb and Cs salts. The solution is slowly evaporated and most of the K, Na, and Ca salts are separated in 2—3 fractions. Rb and Cs are pptd. from the mother-liquor by silicomolybdic acid. The silicomolybdates are treated with aq. NH_3 and the H_2SiO_3 is filtered off. MoO_4'' is pptd. as the quinoline salt, from which the MoO_3 is obtained. Rb and Cs acetates are converted into the carbonates. From the carbonate solution, acidified with HCO_2H, traces of Mo are pptd. as MoS_2. HNO_3 or HCl is added to the filtrate, which is then evaporated to dryness, giving nitrates and chlorides of Rb and Cs. A. J. M.

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PROCESSES AND PROPERTIES INDEX

6

Synthesis of highly substituted sodium salts of heteropolyacids. E. A. Nikitina. *J. Gen. Chem.* (U.S.S.R.) 14, 700-71(1944)(English summary). The article is essentially a review of literature data. The formation of highly substituted salts of heteropolyacids disproves the idea of the tribasic nature of heteropolyacids with P as the complex-forming element. In the formation of these salts there is not observed the transfer of WO_3 or MoO_3 from the inner sphere into the outer. The formation of Na salts of luteo acids was shown to be impossible in the course of the formation of highly substituted salts of satd. heteropolyacids. The nature of these salts may be interpreted from several points of view. H bonding, berthollide compounds, intrusion structures, and solid solns. formed from satd. phosphomolybdates and phosphomolybdates with P_2O_5-MoO_3 ratio of 1:11. The author feels that the latter is the correct point of view. 9 references. G. M. Kosolapoff

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6

Coördination compounds of boron trifluoride and boron richloride E. A. Nikitina. *Uspekhi Khim.* 13, 707-20 (1940). A crit. review with 42 references. N. Thon

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A

Theory of structure of heteropolyacids. E. A. Nikitina. *Izvest. Sektora Platiny i Drug. Blagorod. Met. Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.* No. 21, 231-3 (1948); cf. *C.A.* 44, 6758b.— Brief review. M. Hosch

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NIKITINA, Ye. A.; SOKOLOVA, O. N.; ANGELOV, I. I.

Acids, Inorganic

Obtaining lute inphosphorousmolybdenum acid, Izv. Sekt. Plat. i. Blag. met., Nov. 25, 1950.

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

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CA

6

Reduction of silicotungstates with hydrogen. I. Potassium tungsten bronze. B. A. Nikitina and A. S. Kokurina (Soviet Elec. Lamp Plant, Moscow). *Zhur. Obshchei Khim.* (*J. Gen. Chem.*) 20, 1340-3(1950).—The compd., first described by Laurent (*Ann. chim. phys.* 67, 210 (1838)) and subsequently studied by Zettnow (*Pogg. Ann.* 150, 282), Knorre (*J. prakt. Chem.* 27, 63(1883), Halloqueau (*Ann. chim.* 19, 100(1900)), and Schaefer (*Z. anorg. Chem.* 36, 144(1904)), was prepd. by 1-hr. reduction with dry H_2 at 620° of a K paratungstate of the compn. WO_3 80.8, K_2O 13.51, H_2O 4.6, Cl^- 1.09%. The product, fine violet crystals with a metallic luster, was washed with H_2O to complete elimination of Cl^-, and dried at 200°. The analysis confirmed exactly the previously assumed formula $K_2W_4O_{11}$. X-ray examn. of the bronze shows a tetragonal lattice, with $a = 4.67$, $c = 6.81$ A. Reduction with H_2 according to $K_2W_4O_{11} + 4H_2 \rightarrow K_2WO_4 + 3W + 8H_2O$ is significant at 700° (1 hr.), and almost complete at 800° (1 hr.). N. T.

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The reduction of silicotungstates with hydrogen. I. Potassium tungsten bronze. E. A. Nikitina and A. S. Korkina (Moscow Electrolamp Factory). J. Gen. Chem. U.S.S.R. 20, 1437-40(1950)(Engl. translation). See C.A. 45, 1904d.
R. M. S.

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NIKITINA, Ye. A. 191T15

USSR/Chemistry - Wolfram Jul 51

"Reduction of Silicowolframates With Hydrogen. II. Reduction of Cis-Silicowolframic Acid and Its Potassium Salts," Ye. A. Nikitina, A. S. Kokurina, Lab of Moscow Elec Lamp Factory

"Zhur Obshch Khim" Vol XXI, No 7, pp 1181-1197

Reduction of cis-silicowolframic acid and its 8 K salts with H_2 proceeds 1st by dehydration of 1-, 2-, and 3-substituted salts, then reduction to metallic W. One product of reduction of 4- and higher-substituted K salts at 500° C is violet K bronze. Found 600° optimum temp for formation of metallic K bronze. Discusses mechanisms.

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USSR/Chemistry - Wolfram Compounds Aug 51

"Reduction of Silicowolframates With Hydrogen. III. Reduction of Unsaturated Potassium Silicowolframates," Ye. A. Nikitina, M. S. Kokurina, Lab of Moscow Elec Lamp Factory

"Zhur Obshch Khim" Vol XXI, No 8, pp 1395-1405

188T10

Solid solns of 11th and 12th order unsatd K silicowolframates form max amt of bronzes when reduced with H_2 at 600°C; at 700° bronze is partially reduced to metallic W. K silicowolframates of 5th and 6th order form bronzes only at 600°, no traces being observed at 500 or 700°. Ability to obtain bronzes from K silicowolframates be-

188T10

USSR/Chemistry - Wolfram Compounds (Contd) Aug 51

tween 12th and 5th orders supports general systematization of heteropolyacids based on coordination studies.

188T10

NIKITINA, Ye. A.

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Reduction of silicotungstates with hydrogen. IV. Sodium bronze and reduction of sodium silicotungstate. E. A. Nikitina and A. S. Kokurina. *Zhur. Obshchei Khim.* (J. Gen. Chem.) 21, 1940-46(1951); cf. *C.A.* 45, 1894d — Reduction of Na paratungstate (WO_3 80.04, Na_2O 9.70, H_2O 10.95%) with H_2 gave a golden Na bronze of the compn. Na_2O 11.79, W 72.85% (calcd. for $Na_2W_7O_{18}$, 12.32 and 72.16%). X-ray analysis showed a cubic lattice with a = 3.87 A. Further reduction of this bronze with H_2, at 700, 760, and 800°, increased the amt. of leachable alkali from an initial 0.02, to 3.06, 9.75, and 10.95%, resp. (at const. total Na_2O content, 11.79%). A coarse-cryst. Na silicotungstate was prepd., of the compn. WO_3 86.94, SiO_2 1.85, Na_2O 3.98, H_2O 7.01, Cl 0.18%, or recalcd. for an anhyd. and impurity-free salt, WO_3 93.87, SiO_2 2.01, Na_2O 4.12, i.e. practically $2Na_2O.SiO_2.12WO_3$. Its reduction with H_2 gave, along with an increase of leachable Na_2O, increased amts. of a golden bronze, confirmed by x-ray examn., the amts. of leachable Na_2O, after reduction at 500, 600, 700, and 800°, were, resp., 3.70, 1.88, 2.26, and 3.34%. At 500°, after complete dehydration of the salt, the heteropolyanion decomposes, and the lattice begins to undergo reconstruction to a bronze lattice. The bronze formation is most intense at 600°. Decompn. of the bronze begins at 700°. Silicon is found to a large extent in the leached-out alkali, probably in the form of Na_2SiO_3. The reduction of the silicotungstate can thus be represented schematically by $Na_2[Si(W_3O_9)_4] + 3H_2 = 3Na_2W_4O_{13} + Na_2SiO_3 + 3H_2O$. N. Thon

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

USSR/Chemistry - Molybdenum Compounds, Rubidium and Cesium — Jul 52

"Concerning the Derivation of Potassium Silicomolybdates," Ye. A. Nikitina, Chair of Gen Chem, Second Moscow Med Inst imeni I. V. Stalin

"Zhur Obshch Khim" Vol 22, No 7, pp 1085-1088

Describes earlier work (together with A. G. Kogan) on the sepn of rubidium and cesium from Solikamsk carnallites with the aid of silicomolybdic acid. Potassium mono-, di-, tri-, and tetrasubstituted salts of silicomolybdic acid were prepd. The introduction of the 5th equiv of potassium

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hydroxide into silicomolybdic acid resulted in the pptn of potassium paramolybdate with an admix of K_2SiO_3. The potassium silicomolybdates appeared to be acidic salts of silicomolybdic acid having 8 replaceable protons.

NIKITINA, Ye. A.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, Ye.A.; KOKURINA, A.S.

Internal structure of heteropolyacids. Izv.Sekt.plat.i blag.met. no.27: 106-126 '52. (MLRA 7:5)

1. Vtoroy Moskovskiy gosudarstvennyy meditsinskiy institut im. I.V. Stalina. (Heteropolyacids) (Silicotungstates)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, E.A.

Preparation and properties of sodium metatungstate and metatungstic acid. E. A. Nikitina (I. V. Stalin 2nd Med. Inst., Moscow). ~~Sbornik Statei Obshchei Khim., Akad. Nauk S.S.S.R.~~ 1, 44-52(1953).—Na metatungstate was prepd. by 2 methods: (1) To a soln. of Na paratungstate (40 g. in 600 ml. of warm H_2O) tungstic acid was added drop by drop and the mixt. boiled for 1.0-1.5 hrs. until 0.3 ml. HCl (d. 1.12) failed to ppt. H_2WO_4. The soln. was concd. on a H_2O bath and finally over H_2SO_4; yield 70% (cf. Copaux, *C.A.* 3, 2008). (2) Moistened tungstic acid was added to a satd. soln. of Na paratungstate (1 g. to 1 ml. H_2O) and the salt crystd. out over H_2SO_4; yield 87-88% (cf. Leontovich, *J. Russian Physicochem. Soc.* 37, 130 (1905)). Metatungstic acid was prepd. from the Na salt (100 g./100 ml. H_2O) to which 100 ml. Et_2O and 40 ml. HCl (d. 1.19) were added at 0°. The heavy, oily etherate of metatungstic acid was sepd. in a separatory funnel and evapd. on a watch glass. Excellent needle-like crystals were obtained; the metatungstic acid decomposed after 12-16 hrs. to the yellow tungstic acid. The soly. of Na metatungstate in the range 0-55° indicates 3 solid phases with 23.94, 22.50, and 21.64 mol. H_2O; at 60° a vitreous solid is formed. The K salt in the range 0-80° gives 4 solid phases with 23.33, 22.40, 13.72, and 12.71 mols. H_2O. The soly. of the Na salt at 55° and that of the K salt at 80° are 81.5 and 84.80 g./100 g. soln. The formula of these salts is considered to be that of Pfeifer (*C.A.* 14, 241), but tentatively that of Rosenheim, *et al.* (*C.A.* 25, 468) is given, $Na_2H_4[H_2(W_2O_7)_6].xH_2O$.

I. Bencowitz

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, YE. A.

4

Preparation of phosphomolybdic acid without the aid of ether. E. A. Nikitina, O. N. Sokolova, and I. I. Angelov. *Sbornik Statei Obshchei Khim., Akad. Nauk S.S.S.R.* 1, 53-7(1953); cf. *C.A.* 32, 2040[1].—Soins. of 160 g. MoO_3, 8.8 ml. H_3PO_4 (d. 1.511), and 0.5 l. H_2O were boiled (at const. vol.) for 3 hrs., filtered, evapd. on a H_2O bath until a film of crystals formed, and cooled to room temp. The 2nd crystn. yielded pure acid; 75% of the MoO_3 reacted. Doubling the dilu. and the period of digestion did not increase the yield. A 400% excess of MoO_3 increased the yield to 90% based on MoO_3 reacting. Recovery of the acid from the mother liquor yielded only 10-12% of the acid after 3 recrystns. Crystn. could be carried out from 80° to the b.p., 103°. I. Bencowitz

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

Some physicochemical properties of [illegible]molybdic acid and its ammonium salt. B. A. [illegible] and O. N. Sokolova. *Soobshcheniya o Nauch.* [illegible] *Vsesoyuz. Khim. Obshchestva im. Mendeleeva*, 1953, No. 1, 54-8; *Referat. Zhur., Khim.* 1954, No. 16165.—The soly. of $H_{12}[P_2O_5(Mo_2O_7)_6].xH_2O$ was studied from the beginning of its decompn. (35°) to the eutectic point (−31°). The solidification curve of the acid was studied in the concn. interval of 31.60–68.73 wt. %. The existence of 3 hydrates of the acid contg. approx. 33, 36, and 39 mols. H_2O was established. A method for obtaining the hexa-substituted ammonium luteophosphomolybdate $(NH_4)_6H_4[P_2O_5(Mo_2O_7)_6].H_2O$ was worked out. The soly. of this salt was studied from 0 to 45°. In this interval, the solid phase is a hydrate with approx. 28 mols. H_2O. The system luteophosphomolybdic acid $-H_2O$ was studied viscometrically at 20°. The relation between viscosity and concn. in this system was linear. M. Hosch

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, E. A.

Stability of the structure of soils in relation to their content of different forms of humus. N. M. Lazarev and E. A. Nikitina. *Trudy Vsesoyuz. Nauch.-Issledovatel. Inst. Sel'skokhoz. Mikrobiol.* 8, 33-41(1953).—The formation of H_2O-impermeable soil aggregates is closely assocd. with the process of formation and decompn. of soil humus, according to which soils can be classified in relation to their structure stability as (1) primary, in which the α-humates predominate, and (2) secondary, in which the β-humates predominate. In relation to the soils' ability to absorb and retain H_2O both types play an equal role, but their effect on plant nutrition is different. The adhesive and cementive properties of soil of type 1 predominate in acid soils, the humus of which is easily attacked by the soil microflora; it is rich in N totally available to the plant nutrition via the root system. Aggregate structures of soils of type 2 are predominant in base-satd. soils. Its humus is free of protein-contg. complexes and is ineffectively attacked by soil microflora, which in turn explains the high stability of the structure of soils of type 2; its value as a nutritional medium is low. In most black soil, aggregates of soil structure type 1 far exceed those of 2, hence their high fertility. As a result of harrowing and continuous cultivation of arable black-soil the α-humus part is first to undergo decompn. resulting in the general reduction of its structural aggregates and in a sharp rise in the sp. gr. of the β-humus aggregates. Most valuable from the agricultural viewpoint is the soil structure consisting of mixed α-β aggregates which predominate in virgin soils and in grass-growing base-satd. soils.

B. S. Levine

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

LAZAREV, N.M.; NIKITINA, Ye.A., kandidat biologicheskikh nauk.

Solidity of soil structure in relation to the content of different forms of humus. Trudy Vses.inst.sel'khoz.mikrobiol. 13:33-41 '53.
(Soil physics) (Humus) (MLRA 8:1)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, Ye.A.; KOKURINA, A.S.

Reduction of silicotungstates with hydrogen. Part 5. Methods for the analysis of silicotungstates and tungsten bronzes. Zhur.ob.khim. 23 no.8:1263-1265 Ag '53. (MLRA 6:8)

1. 2-y Moskovskiy meditsinskiy institut im. I.V.Stalina. Kafedra obshchey khimii. (Silicotungstates) (Tungsten bronze)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, E. A.

Chemical Abst.
Vol. 48
Apr. 10, 1954
Inorganic Chemistry

4

(3)

The preparation of phosphotungstic acid from phosphoric and tungstic acids. E. A. Nikitina, O. N. Sokolova, and I. I. Angelov. *Zhur. Obshchei Khim.* 23, 1437–42(1953).—$H_3[P(W_3O_9)_4]$ was obtained by dissolving 110 g. of freshly prepd. tungstic acid in 500 ml. of 1% H_3PO_4. H_2WO_4 was prepd. from Na_2WO_4 and HNO_3 without use of ether. The soln. of the phosphotungstic acid was evapd. to about $^1/_4$ of its original vol., and quickly filtered through a layer of fresh, carefully washed H_2WO_4 to eliminate colloidal suspension of WO_3. The filtrate was subsequently slowly evapd. to beginning crystn. The ability of the H_2WO_4 to dissolve in the soln. of dil. H_3PO_4 decreases rapidly with aging; a three-day-old prepn. showed an efficiency of 28% as compared to 92% obtained with freshly prepared material.

M. O. Holowaty

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, E. A.

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
Inorganic Chemistry

(3) Chem

Preparation of silicomolybdic acid from molybdenum oxide and silicic acid. E. A. Nikitina, G. N. Pyatnitskaya, and I. I. Angelov. Zhur. Obschet. Khim. 23, 1617-22(1953); cf. C.A. 33, 493'.—$H_2[Si(MoO_3)_4]$ was prepd. for the first time without the use of a volatile solvent. An excess of SiO_2 up to 500%, 16 hrs.' heating at 90-95°, and H_2O 8 l. per 500 g. MoO_3 are required. The yield is 80-90% on the basis of MoO_3 reacting and 50% on the basis of the oxide initially taken. The unchanged oxide is used over again but the SiO_2 must be replaced; after drying it loses its reactivity. Materials used should be of the highest purity since it is almost impossible to sep. the silicomolybdic acid from impurities.

I. Bencowitz

9-2-54

Lab. Inorg. Chem., Inst. Chemical Reactions

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

Nikitina, Ye. A.

7733 Zadaniya I Metodicheskiye kazaniya Po Kursu ((Ekpluatatsiya Gidromeli Orativnykh Sistem)) Dlya Zaoch. Otd-niy S.-Kh. Tekhnikumov Po Spetsial'nosti ((Gidromelioratsiya)) Utv. 13/VII 1954 G. (M., 1954), 85.; Il. Chert. 20 Sm. (Upr. chel. Zavedeniy Glav. Upr. Podgotovki Kadrov M-Va Sel'skogo Khozyaystva ss r. Vsesoyuz. Zaoch. S.-kh. Tehknikum) 2.000 Ekz. B. Ts. V Kontse Teksta Avt: Ye. A. Nikitina. -Bez Tit. L. I OBL.- (55-3338)
631.6:626.8(071.4)

SO. Knizhnaya Letopis', Vol. 7,1955

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, E.A.

4

Preparation and some properties of phospho-9-molybdates (luteophosphomolybdates) of rubidium and cesium. E. A. Nikitina and O. N. Sokolova. *J. Gen. Chem. U.S.S.R.* 24, 1117-18 (1954).—See C.A. 49, 1466a. B. M. R.

CH (1)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, E. A.

USSR/ Chemistry Quantitative analysis

Card : 1/1 Pub. 151 - 6/35

Authors : Nikitina, E. A., and Sokolova, O. N.

Title : About the derivation and certain properties of phospho-9-molybdates (luteophosphomolybdates) of rhubidium and cesium

Periodical : Zhur. ob. khim. 24, Ed. 7, 1123 - 1127, July 1954

Abstract : The derivation and certain chemical properties of hexa-substituted Rb and Cs salts of luteophosphomolybdic acid, are described. The solubility of above salts was established at 25°. It was also found that plain luteophosphomolybdic acid cannot be used as a reagent for quantitative determination of Rb and Cs. Saturated phosphomolybdic acid, without any potassium salt admixtures, is considered a suitable reagent for Rb and Cs. Four USSR and 1 English reference. Tables.

Institution : Institute of Chemical Reagents

Submitted : December 30, 1953

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, E. A.

USSR/Chemistry Titration processes

Card : 1/1 Pub. 151 - 4/33

Authors : Nikitina, E. A., and Sokolova, O. N.

Title : The structure of phospho-9-molybdic (luteophosphomolybdic) acid

Periodical : Zhur. ob. khim. 24/8, 1286 - 1293, August 1954

Abstract : The experiments on potentiometric titration of a luteophosphomolybdic (LPhM) acid solution with NaOH, in the presence of a quinhydrone electrode, are described. LPhM-acid appears to be a dodeca-basic acid and its structure is identical to that of oxo-compounds. Aqueous solutions of sodium salts of LPhM-acid reveal an acid reaction, the salts are well soluble in water and alcohol and the viscosity of the solutions is similar with the theoretical. Six references: 3 USSR, 1 German and 2 English (1915 - 1951). Tables; graphs.

Institution : Institute of Chemical Reagents

Submitted : March 19, 1954

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, Ye.A. ; SOKOLOVA, O.N.

Study of the kinetics of the reciprocal conversion of saturated phosphomolybdic and luteophosphomolybdic acids. Zhur. ob.khim. 25 no.3:425-433 Mr '55 (MLRA 8:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov. (Phosphomolybdic acid)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, Ye.A.; SOKOLOVA, O.N.

Preparation and certain physicochemical properties of ammonium luteophosphomolbdate. Zhur.ob.khim.25 no.7:1285-1289 Jl'55. (MLRA 8:12)

1. Institut khimicheskikh reaktivov.
(Ammonium salts)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITIN, E. A.

The preparation of phosphotungstic acid without the use of ether. E. A. Nikitina and N. E. Kulakova. *J. Gen. Chem. U.S.S.R.* 25, 2287-9(1955)(English translation).—See *C.A.* 50, 4090h. B. M. R.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, E. A.

5

The preparation of phosphotungstic acid without the use of ether. E. A. Nikitina and N. E. Kulakova (I. V. Stalin 2nd Med. Inst., Moscow). *Zhur. Obshchei Khim.* 25, 2388-91(1955).—To prep. $H_3[P(W_3O_7)_4]$, mix 1.3 g. $BaWO_4$ (prepd. by pptg. Na_2WO_4 with $BaCl_2$) with 2.031 l. of boiling H_2O, add 28 ml. H_3PO_4 (87.9%) to the suspension, boil for 15 min., add 812.5 ml. of concd. HCl, and stir for ~2 hrs. Dissolve the $Ba_3H_4[P(W_3O_7)_4]_2$ in boiling H_2O (1 kg.:5 l.) add 27 ml. of concd. H_2SO_4, boil with stirring for 1 hr., and filter off the $BaSO_4$. Evap. the filtrate to dryness *in vacuo*. The yield is 76%. J. Rovtar Leach

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

Nikitina, E. A.

3

The production of silicotungstic acid without the use of ether. E. A. Nikitina, G. N. Pystnitskaya, and I. I. Angelov. Zhur. Obshchei Khim. 26, 10-17(1956).—Attempts at direct reaction of silicic and tungstic acids in aq. suspension at pressures up to 63.5 atm., and temps. up to 185-200°, failed to produce silicotungstic acid. It was produced as follows: $5(NH_4)_2O.12WO_3$ with KOH gives $5K_2O.12WO_3$; this is mixed with K_2SiO_3 and H_2SiF_6 at a temp. below 35°: $5K_2O.12WO_3 + K_2SiO_3 + 4H_2SiF_6 = K_4F_4[Si(W_3O_7)_4] + 4K_2SiF_6 + 2H_2O$. H_2SiO_3 can be substituted for the K_2SiO_3. $K_4H_4[Si(W_3O_7)_4]$ with 25% $BaCl_2$ soln. forms $Ba_4[Si(W_3O_7)_4].xH_2O$. This can be formed also from the Na or the NH_4 salt. The Ba salt with 50% H_2SO_4 yields silicotungstic acid. The theory of heteropoly acids is discussed in terms of the capacity of metals to substitute for the numerous H atoms. C. H. Fuchsman

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

Nikitina, Ye. A.

USSR/Inorganic Chemistry. Complex Compounds. C

Abs Jour : Referat Zhur - Khimiya, No. 8, 1957, 26472.

Author : Nikitina, Ye.A., Buris, Ye.V.
Inst :
Title : Thermographic Study of Most Important Saturated Heteropolyacids.

Orig Pub : Zh. obshch. khimii, 1956, 26, No. 3, 621 - 625.

Abstract : The curves of heating of phosphomolybdic (I), phosphotungstic (II), silicomolybdic (III) and silicotungstic (IV) acids were recorded by a pyrometer of Kurnakov with regular and differential recording. The initial substances were prepared by methods developed earlier (Nikitina Ye.A., Zh. obshch. khimii, 1937, 7, 2609; 10, 1194). It was

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, E. A.

3600

Thermographic investigation of important saturated heteropolyacids. E. A. Nikitina and E. V. Buris. Gen. Chem. U.S.S.R. 26, 717-20(1956) (English translation). —See C.A. 50, 16922a. B. M. R.

Chem

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, Ye.A.; BURIS, Ye.V.

Obtaining sodium phosphortungstate from tungstic acid and sodium phosphate. Zhur. ob. khim. 26 no.10:2661-2663 O '56. (MIRA 11:3)

1. Institut khimicheskikh reaktivov.
(Tungstic acids) (Sodium phosphates)
(Sodium phosphotungstate)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, E.A.

3

27

Preparation of sodium phosphomolybdates from molybdenum anhydride and the sodium phosphates. E. A. Nikitina and E. V. Buris. *Zhur. Obshchei Khim.* 26, 2945-7 (1956).—A method is described for prepg. the di- and tri-substituted sodium phosphomolybdates from MoO_3 and Na_2HPO_4 or Na_3PO_4. The reaction yields are 70%. The methods which are described are simple and have good yields. J. Rovtar Leach

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, Ye. A.

AUTHORS: Nikitina, Ye. A., and Buris, Ye. V. 78-3-4/35

TITLE: The Coordination Theory and X-Ray Structural Analysis in the Study of the Structure of Heteropoly-Compounds. (Koordinatsionnaya Teoriya i Rentgenostrukturnyy Analiz v Voprose Izucheniya Stroyeniya Geteropolisoyedineniy).

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1957, Vol.II, Nr.3, pp. 510-514. (USSR)

ABSTRACT: Analysis of data from X-ray structural investigations has shown that most of the main discrepancy between these data and the coordination theory for dealing with the double-layer structure of heteropolycompounds, the coordination number of the central atom, the basicity and the composition of intra-sphere substitutes, can be removed. A thermographic investigation of the most important saturated heteropolyacids has been carried out. On the basis of the data obtained a difference has been found in the bond strength of hydrate, salt-forming and intra-sphere water. It is shown on the basis of previous work that in heteropolycompounds which contain the H_2 group as the central atom, the intra-sphere water is

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, Ye.A.; SOKOLOVA, O.N.

Equilibria in systems of silicotungstic acid, silicomolybdic acid, and water. Zhur.neorg.khim. 2 no.9:2231-2234 S '57. (MIRA 10:12)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov.

(Silicotungstic acids)
(Silicomolybdic acids)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

440

AUTHORS: Nikitina, YE. A., and Sokolova, O. N.

TITLE: Derivation of Cis-Barium Borotungstate (O poluchenii tsis-borovol'framata bariya).

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, No. 1, pp. 10-14 (U.S.S.R.)

ABSTRACT: Sodium borotungstate was used as the basic substance for the synthesis of other borotungstates. Barium cis-borotungstate was obtained during the reaction of $BaCO_3$ with a sodium borotungstate solution; the almost insoluble trans-barium borotungstate settles in the residue and only the sodium carbonate and the cis-acid salt which crystallizes during evaporation remained in the solution. Repeated recrystallization of the salt is necessary to obtain pure barium borotungstate. In order to find the optimum conditions favorable for the formation of barium borotungstate, the salt was separated from the acid solutions of various concentrations. The methods of obtaining sodium borotungstate, by using stochiometric amounts of H_3BO_3 and sodium tungstate, and barium cis-borotungstate, are described. The physico-chemical properties of barium borotungstate solutions and crystals are listed in tables. Experiments showed that the new methods make

Card 1/2

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, Ye. A.

Nikitina, Ye. A. - "Phosphorus stock of various soils inconnection with the formation of their bio-organomineral complexes," Trudy Vsesoyuz. nauch.-issled. in-ta s.-kh. mikrobiologii, Issue 1 (for 1941-1945), 1949, p. 46-58, - Bibliog: 8 items

SO: U-5240, 17, Dec. 53, (Letopis 'Zhurnal 'nykh Statey, No. 25, 1949).

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, Ye. A. Co-author

XXXXXXXXXXXXXXXXXXXXXX

Nikitina, Ye. A. and Kukurina, A. S. - "On the study of the structure of heteropolyacids in connection with the investigation of potassium silicotungstates", [illegible], [illegible] o [illegible], rapotakh chlenov Vsesoyuz. Khim. [illegible] Mendeleyeva, [illegible], issue 2, p. 4-5.

SO: [illegible] 30, 1[illegible] Sept. 53, [illegible] Statey, No. 23, [illegible].

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, E. A.

22994 K poluchaniyu soley zhirnykh kislot. (soobshch.) Zhurnal obshchey khimii, 1949, Vyp. 6, c. 1108-14. - Bibliogr: C. 1114

SO: LETOPIS' NO. 31, 1949

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

The structure of heteropoly acids by data on potassium silicotungstates K. A. Nikitina and A. S. Kokurina *Zhur. Obshchei Khim.* (J. Gen. Chem.) 10, 907-79(1940). Methods were worked out for obtaining α-silicotungstic acids and tetrasubstitution products of α K silicotungstates. Potassium salts of silicotungstic acid were obtained in which from one to 8 atoms of H were substituted by metal. All the K salts obtained in aq. soln. had acid reactions detd. by pH measurements. The K salts obtained of silico-11-, 10-, 9-, 7-, 6-, and 5-tungstic acids had alk. reactions. The K salts of silico-0-, 7-, 6-, 5 series were obtained for the first time. The decomp. products of K silico-5-tungstate show it to be a double salt. Potassium salts of silico 9-, 6-, 5-tungstic acids are unst. The structure of α-silicotungstic acid, its salts, and all other synthesized silicotungstates can be fully explained by the theory of Miolati-Rosenheim. The completely satd. heteropoly acids are polybasic, forming, apparently, only acid salts. The coordination no. of the central atom in heteropoly acids is six. F. W. Bunker

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

CA

The preparation of salts of aliphatic acids. I. E. A. Nikitina and S. N. Maksimova (Moscow State Med Inst.). J. Gen. Chem. U.S.S.R. 19, 1101-7(1949)(Engl translation).—See C.A. 44, 1019a. E. J. C.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

Preparation of salts of aliphatic acids. I. E. A. Nikitina and S. N. Makarova. *Zhur. Obshchei Khim.* [illegible] Gen. Chem. 19, [illegible] Oleic acid [illegible] g. in [illegible] ml. EtOH, neutralized with [illegible] ml. [illegible] NaOH and pptd. at room temp. with [illegible] g. $Bi(NO_3)_3 \cdot 5H_2O$ in 40 g. glycerol and 20 H_2O, gave, on washing the product with EtOH, 72.38%, *Bi trioleate*, a yellow white creamy mass; in a less satisfactory procedure, giving [illegible] of this product, [illegible] g. oleic acid was treated with 1.1 g. yellow Bi oxide in 1 ml. H_2O, heated [illegible] hrs. on a steam bath, extd. with warm CCl_4, the ext. evapd., and the CCl_4 insol. matter suspended in CCl_4, decanted from the Bi_2O_3, and filtered; the residue on the filter was a grey yellow mass [illegible] g. [illegible] insol. in CCl_4, C_6H_6, or EtOH. The 1st procedure was used for the prepn. of [illegible] *palmitate* [illegible] a yellowish solid [illegible] in CCl_4, [illegible] C_6H_6, somewhat sol. in EtOH and EtO_2, and [illegible] yellowish powder, somewhat contaminated by the basic salt, similar in soly. to the above. The soly. of all Bi salts in transformer oil is low, 0.45-0.[illegible]%, at [illegible], and less at lower temps.; all have wide melting ranges. Oleic acid [illegible] g. warmed with [illegible] g. NaOH in MeOH, then freed of water by evapn. with much MeOH, followed by soln. in Et_2O and addn. of 1.2 g. $SbCl_3$, refluxing [illegible] hrs., filtration, and evapn. gave [illegible]%, *Sb oleate*, $SbO(C_{18}H_{33}O_2)$, a pinkish powder, m. [illegible], poorly sol. in Et_2O, MeOH, CCl_4, C_6H_6, and EtOH; the *palmitate* prepd. by this method was $Sb(C_{16}H_{31}O_2)_3$, a white powder, m. [illegible], decomp. 120°, sol. only in MeOH, other solvents giving only partial soln.; *Sb tristearate*, made similarly, m. [illegible], has similar soly. Oleic acid [illegible] g. with 2 g. Sb_2O_3 gave 1 g. heavy oil, which on extn. with Et_2O gave 0.9 g. oil, b. [illegible] 9° [illegible], m. 4-5°, which analyzed fairly well for *Sb trioleate*.

[illegible] M. Kosolapoff

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

79-2-5/58

AUTHORS: Nikitina, Ye. A., and Sokolova, O. N.

TITLE: About Certain Physico-Chemical Properties of cis-Barium, Cobalt and Copper-Borotungstates (O nekotorykh fiziko-khimicheskikh svoystvakh tsis-borovol'framatov bariya, kobal'ta i medi).

PERIODICAL: Zhurnal Obshchey Khimii, 1957, vol 27 No 2, pp. 299-304 (U.S.S.R.)

ABSTRACT: Cobalt and copper borotungstates were obtained by double decomposition of barium borotungstates with cobalt and copper sulfates. The solubility of barium and cobalt borotungstates was investigated at temperatures ranging from 1 to 80°. The existence of barium borotungstate hydrates with 51.14, 50.14, 43.59 and 38.38 moles of H_2O was established by the solubility method. The cobalt borotungstate hydrates contained 60.9, 59.15, 54.87, 47.13 and 44.12 moles of H_2O. The existence of barium borotungstate hydrates with 32.20 and 3 moles of H_2O and cobalt borotungstate hydrate with 3 moles H_2O was established thermographically.

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2 tables, 4 graphs. There are 5 references, of which 3 are Slavic.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

79-2-5/58

About Certain Physico-Chemical Properties of cis-Barium, Cobalt and Copper-Borotungstates

ASSOCIATION: All-Union Scientific Research Institute of Chemical Reagents

PRESENTED BY:

SUBMITTED: February 28, 1956

AVAILABLE: Library of Congress

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

AUTHORS: Nikitina, Ye. A., Sokolova, O. N. SOV/78-3-8-[illegible]

TITLE: The Balance in the System of Copper-Boro-wolframate-water (Ravnovesiye v sistheme borovol'framat medi - voda)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol. 3, Nr 8, pp. 1976-1978 (USSR)

ABSTRACT: The equilibrium in the system $Cu_3H_8[B(W_2O_7)_5]_2$ - H_2O within the temperature range of 0 - 70° centigrade was studied. First of all the compound $Cu_3H_3[B(W_2O_7)_5]_2$ 75 H_2O was formed. This salt is comparatively easily soluble in water. Based on the studies on the solubility of copper-boro-wolframate in water the solubility diagram was plotted. The existence of five new crystallization hydrates of copper-boro-wolframate with 77, 74, 69, 63, and 57 mol. water was observed. The aqueous solutions of copper-boro-wolframate showed an acid reaction and confirms the conception that this salt is to be considered as acid salt. There are 1 figure, 1 table, [illegible] references, 2 of which are Soviet.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

SOV/78-3-9-4/48

The Balance in the System of Copper-Boro-wolframate water

ASSOCIATION: 2-y Moskovskiy meditsinskiy institut i. N. I. Pirogova (2nd Medical Institute imeni N. I. Pirogov, Moscow)

SUBMITTED: January 13, 1958

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

SOV/78-3-12-15/36

AUTHOR: Nikitina, Ye. A., Buris, Ye. V.

TITLE: The Preparation of Sodium Silicon Molybdates and Their Investigation by the Solubility Method (Polucheniye kremnemolibdatov natriya i issledovaniye ikh metodom rastvorimosti)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 12, pp 2687-2694 (USSR)

ABSTRACT: By neutralizing silico-molybdic acid with sodium hydroxide the mono-, di-, tri-, tetra-, and penta-sodium silico-molybdates were prepared in purest crystalline form. The preparation of hexa-, hepta-, and octa-sodium salts of silico-molybdic acid in the crystalline state always leads to the inclusion of impurities from the decomposition products of molybdic and silicic acids. The neutralization reaction was carried out at lowered temperature by slowly adding equivalent amounts of sodium hydroxide to the silico-molybdic acid. A quick method was developed for synthesizing trisodium silico-molybdate from sodium silicate and molybdenum oxide with a yield of 92%. All the salts prepared are easily soluble in water and alcohol. The aqueous solutions behave as acids. The pH values of 0.1 molar aqueous solutions of these salts are:

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The Preparation of Sodium Silicon Molybdates and Their Investigation by the Solubility Method SOV/78-3-12-15/36

Salt	pH
$NaH_7[Si(Mo_2O_7)_6]$	1,9
$Na_2H_6[Si(Mo_2O_7)_6]$	2,4
$Na_3H_5[Si(Mo_2O_7)_6]$	2,7
$Na_4H_4[Si(Mo_2O_7)_6]$	3,4
$Na_5H_3[Si(Mo_2O_7)_6]$	4,4

The solubilities of the mono- through tetra-sodium molybdates were investigated. The solubility increases slowly with an increase in the sodium content in the silico-molybdates. The solubility of the penta-sodium salt was determined at 0°, 20°, and 40° C. and was found to be 68.6 grams salt per 100 ml solution. The tetra-sodium salt is the most soluble. It was found for the first time that in the mono-sodium salt hydrates form with 30, 28, 25, 27, and 2 moles of water.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

The Preparation of Sodium Silicon Molybdates and Their Investigation by the Solubility Method SOV/78-3-12-15/36

The di-sodium salts form hydrates with 21 and 13.5 moles of water and tetra-sodium molybdate salts with 25 and 17 moles of water were prepared. There are 1 figure, 3 tables, and 4 references, 1 of which is Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov (All-Union Scientific Research Institute of Chemical Reagents)

SUBMITTED: August [illegible], 1957

Card 3/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

AUTHORS: Nikitina, Ye. A., Buris, Ye. V. SOV/78-3-12-16,36

TITLE: Thermographic Investigation of the Sodium Silico-Molybdates, Phosphoro-Tungstates, and Phosphoro-Molybdates (Termograficheskoye issledovaniye kremnemolibdatov, fosfornovol'framata i fosfornomolibdata natriya)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 12, pp 2694-2697 (USSR)

ABSTRACT: Thermograms for the mono-, di-, tri-, tetra-, and penta-sodium salts of the silico-molybdic acids and for the di-sodium salts of the phosphoro-molybdic and phosphoro-tungstic acids were plotted for the first time. The thermographic analyses show that in the case of all sodium salts of the silico-molybdic acids new hydrated forms were found: mono-sodium salt hydrates were found with 14 and 16 molecules of water; di-sodium salts formed hydrates with 11 and 8 molecules of water; tri-sodium salts gave hydrates with 6 and 2.5 molecules of water; tetra-sodium salts formed hydrates with 8 and 2 molecules of water; and penta-sodium salts formed hydrates with 9 and 15 molecules of water. The thermographic investigations of di-sodium phosphomolybdate and di-sodium phospho-tungstate showed the following:

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SOV/78-3-12-16/36

Thermographic Investigation of the Sodium Silico-Molybdates, Phosphoro-Tungstates, and Phosphoro-Molybdates

the $Na_2H_5[P(Mo_2O_7)_6]\cdot 11H_2O$ salt shows its first endothermic effect at 110°, losing 8 molecules of water to form $Na_2H_5[P(Mo_2O_7)_6]\cdot 3H_2O$. The dehydration is completed at 330°. The thermograms for $Na_2H_5[P(W_2O_7)_6]\cdot 10H_2O$ show the endothermic effect at 110°, and at 112° it has dehydrated to $Na_2H_5[P(W_2O_7)_6]\cdot 2H_2O$. A comparison of the thermograms of the sodium salts and the free molybdic and tungstic acids shows that the thermal stabilities of the free acids are considerably higher than those of the di-sodium salts. The complete dehydration of $H_7[P(Mo_2O_7)_6]$ and $H_7[P(W_2O_7)_6]$ takes place at 450° and [illegible]°. The decomposition of the di-sodium salts occurs at 330° and 340°. In aqueous solution the free heteropoly acids decompose at much lower temperatures than do the sodium salts of these acids. All the salts prepared were observed as individual chemical compounds. There are 6 figures and 5 Soviet references.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

SOV/78-3-12-16/36

Thermographic Investigation of the Sodium Silico-Molybdates, Phosphoro-Tungstates, and Phosphoro-Molybdates

ASSOCIATION: Vsesoyuznyy Nauchno-issledovatel'skiy institut khimicheskikh reaktivov (All-Union Scientific Research Institute for Chemical Reagents)

SUBMITTED: August 20, 1957

Card 3/3

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

SOV/78-3-12-17/36

AUTHORS: Nikitina, Ye. A., Tsvetkov, N. A.

TITLE: Concerning the Preparation of Luteophosphorous Tungstate Ammonium (Phosphorous-9-Tungstate) (O poluchenii lyuteofosfornovol'framatov (fosforno-9-vol'framatov) ammoniya)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 12, pp 2698-2706 (USSR)

ABSTRACT: The method of Wu and Souchay for preparing luteophosphorous tungstate ammonium was tested and improved. With the improved method the yield of α- and β-forms of luteophosphorous tungstate is 98%. The product of this method of preparation is free from Cl and H_3PO_4 impurities, and has the composition $(NH_4)_6H_6[P_2O_2(W_2O_7)_9] \times H_2O$. The disadvantage of both methods is their exceptionally slow crystallization process (by the method of Wu two weeks, by the method of Souchay two to three months). A fast method for preparing 88% α-form and 11.8% β-form of luteophosphorous tungstate ammonium was developed. For separating the α- and β-forms fractional crystallization was used. In the first fraction the α-form crystallizes with a greater degree of impurity from the β-form. In the second

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SOV/78-3-12-17/36

Concerning the Preparation of Luteophosphorous Tungstate Ammonium (Phosphorous-9-Tungstate)

and third fraction the β-form precipitates. The α-form of the luteophosphorous tungstate ammonium is stable in the solid state as the hydrate with 9 molecules of water, while the β-form is a solid hydrate with 8 molecules of water. The α-form is irreversibly converted to the β-form in aqueous solution; an increase in temperature accelerates this [illegible]. The α- and β-forms crystallize out of the aqueous solution as the unstable hydrates with 15 and 11 molecules of water, respectively. The aqueous solutions of the α- and β-forms [illegible] inactive optically.
There are 4 tables and 13 references, 3 of which are [illegible].

ASSOCIATION: 2-y Moskovskiy meditsinskiy institut im. N. I. Pirogova (2nd Moscow Medical Institute imeni N. I. Pirogov)

SUBMITTED: October 23, 1957

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, Ye.A.

Effect of a partial oxygen pressure and preliminary soil desiccation on the accumulation of nitrates. Trudy Vses. inst. sel'khoz. mikrobiol. no.14:100-112 '58. (MIRA 15:4)
(Nitrification) (Soil aeration) (Soil moisture)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, Ye. A.; PARTASHNIKOVA, M.Z.

Determination of silicon and phosphorus in reagents without the use of organic solvents. Trudy IREA no.22:119-123 '58. (MIRA 14:6)

(Silicon--Analysis)
(Phosphorous--Analysis)
(Chemical tests and reagents)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

5(2)

AUTHORS: Nikitina, Ye. A., Kulakova, N. Ye. SOV/78-4-3-13/24

TITLE: On the Preparation of Mono-, Di-, and Tribarium Phosphotungstates (O poluchenii odno-, dvukh-, i trekhzameshchennykh fosfornovol'framatov bariya)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 3, pp 564-570 (USSR)

ABSTRACT: The conditions of producing mono-, di-, and tribarium phosphotungstates from free phosphotungstic acid and various barium salts, such as the carbonate, acetate and chloride, have been determined. The monobarium salt can be synthesized only with the aid of sodium chloride by isothermal crystallization in a solution having a certain p_H-value. More highly substituted salts are formed when barium carbonate and barium acetate are used. Monosubstituted salts do not form in solutions containing carbonic acid and acetic acid. The dibarium salt of phosphotungstic acid can be synthesized only with the aid of free acids and barium chloride solution. The microphotograph of the disubstituted salt shows that a transformation takes place in this salt at 41°. The tribarium salt of phosphotungstic acid is synthesized by the reaction

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On the Preparation of Mono-, Di-, and Tribarium Phosphotungstates SOV/78-4-3-13/24

$$2H_7\left[P(W_2O_7)_6\right]_2 + 3BaCO_3 = Ba_3H_8\left[P(W_2O_7)_6\right]_2 + 3H_2O + 3CO_2$$

with various barium salts and phosphotungstic acid. The temperature and the manner in which the barium salts are added are insignificant for the crystallization. The trisubstituted salt has the highest stability and is slightly soluble in water. There are 1 figure, 3 tables, and 11 references, 4 of which are Soviet.

ASSOCIATION: 2-oy Moskovskiy meditsinskiy institut im. N. I. Pirogova (Moscow Second Medical Institute imeni N. I. Pirogov)

SUBMITTED: October 30, 1957

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

5(2)

AUTHORS: [illegible], Ye. [illegible], [illegible], [illegible] Ye [illegible]/78-4-3-14/[illegible]

TITLE: On the Preparation of Higher-substituted Barium Phosphotungstates (O poluchenii vysokozameshchennykh fosfornovol - framatov bariya)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 3, pp 571-577 (USSR)

ABSTRACT: The syntheses of higher-substituted barium phosphotungstates have been found. Free phosphotungstic acid and various barium salts, such as the carbonate, acetate, and chloride were used. Tetrabarium phosphotungstate was produced from barium carbonate or acetate. Exact instructions for preparing $Ba_4H_6[P(W_2O_7)_6]_2$ are given. The salt is purified by a slow isothermal crystallization of the solution. The yield is about 50-65%. The pentasubstituted salt $Ba_5H_4[P(W_2O_7)_6]_2 \cdot xH_2O$ was produced by the action of free phosphotungstic acid on barium acetate or carbonate. The salt first forms a honeylike mass, which changes to the crystalline form when stored at room temperature. The hexasubstituted salt $Ba_6H_2[P(W_2O_7)_6]_2 \cdot xH_2O$

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

On the Preparation of Higher-substituted Barium Phosphotungstates SOV/78-4-3-14/34

was detected in the solution but has not been isolated in solid condition. To prepare the salt in crystalline condition a freezing-out of the solution or low-temperature crystallization is necessary. The crystal formation of the hexasubstituted salt was microphotographed. The heptasubstituted salt $Ba_7[P(W_2O_7)_6]_2 \cdot xH_2O$ was isolated by the action of 5 equivalents $BaCO_3$ on free phosphotungstic acid. The action of 7 equivalents barium acetate or carbonate on phosphotungstic acid results in the formation of the bertholyt compound. The bertholyt compound of the heptasubstituted salt is difficultly soluble in cold water and unstable when stored. The aqueous solutions of tetra-, penta-, hexa-, and heptasubstituted salts have an acid reaction. There are 1 figure, 2 tables, and 11 references, 8 of which are Soviet.

ASSOCIATION: 2-oy Moskovskiy meditsinskiy institut im. N. I. Pirogova (Moscow Second Medical Institute imeni N. I. Pirogov)

SUBMITTED: December 22, 1957

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

SOV/78-4-4-21-44

5(4)

AUTHORS: Nikitina, Ye. A., Tsvetkov, N. A.

TITLE: The Equilibria in the Systems: Isomeric α and β Forms of Ammonium Luteophosphotungstate - Water (Ravnovesiya v sistemakh: Izomernyye α- i β-formy lyuteofosfornovol'framata ammoniya voda)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 4, pp 839-844 (USSR)

ABSTRACT: The authors investigated the equilibria in systems composed of the isomeric α and β forms of ammonium luteophosphotungstic acid and water. The solubilities of the α and β forms of this compound were investigated at 0-90°. The results are summarized in table 1 and figure 1. At 80 and 90° a completely irreversible conversion of the α form into the β form takes place. From 0 to 90° the β form of the ammonium luteophosphotungstate forms four crystal hydrates: $H_6(NH_4)_6[P_2O_2\cdot(W_2O_7)_9]\cdot 10$; 1 ; 10 and $9H_2O$. The α form of this compound forms only as the hydrate: $(NH_4)_6H_6[P_2O_2(W_2O_7)_9]\cdot 15H_2O$. The α form is converted

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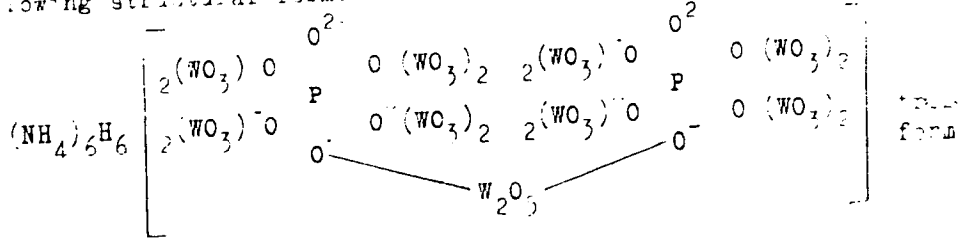
SOV/78-4-1-2[illegible]/44

The Equilibria in the Systems: Isomeric α and β Forms of Ammonium Lute[illegible] phosphotungstate - Water

at ~75° to the β form (actually, to the hydrate which at this temperature corresponds to the β form). The α form is less soluble than the β form. The existence of both forms of ammonium luteophosphotungstate is explained in terms of geometric isomerism. For the isomers of this compound the following structural formulas are suggested:



Card 2/4

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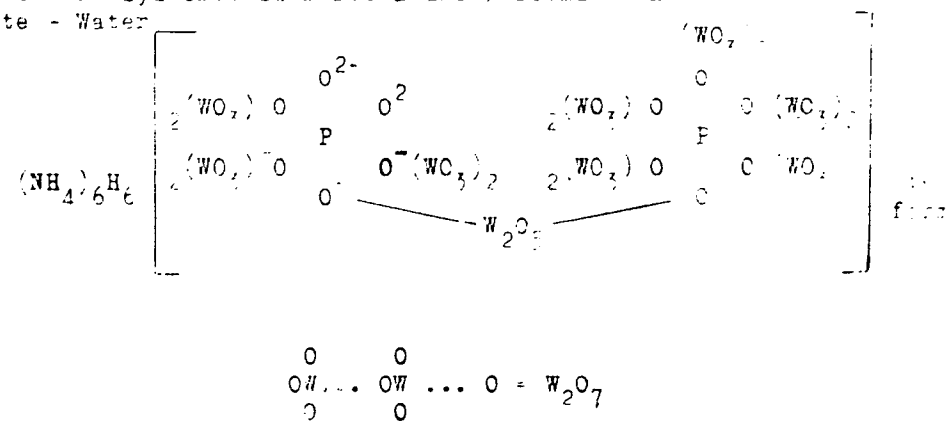
"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

SOV/[illegible]

The Equilibria in the Systems: Isomeric α and β Forms of Ammonium Dodecaphosphotungstate - Water



There are 1 figure, 1 table, and 13 references, [illegible] are Soviet.

ASSOCIATION: Vtoroy Moskovskiy meditsinskiy institut im. N. I. Pirogova (Second Moscow Medical Institute imeni N. I. Pirogov)

Card 3/4

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

5(2) SOV/78-4-10-10/40

AUTHORS: Nikitina, Ye. A., Kulakova, N. Ya.

TITLE: Thermographic Investigation of Barium-phosphotungstates

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 10, pp 2237-2241 (USSR)

ABSTRACT: In an earlier paper (Ref 1) the method of synthesizing the phosphotungstates (PT) of barium was described. Now, the compositions of the individual salts, their thermal stability and the formation of various hydrates were investigated. The thermograms (Figs 1-7) were plotted by means of the Kurnakov-pyrometer. The following mono- up to hepta-substituted salts were investigated: $BaH_{12}[P(W_2O_7)_6]_2 \cdot 10.53\ H_2O$; $Ba_2H_{10}[P(W_2O_7)_6]_2 \cdot 22.96\ H_2O$; $Ba_2H_8[P(W_2O_7)_6]_2 \cdot 20\ H_2O$; $Ba_4H_6[P(W_2O_7)_6]_2 \cdot 27.86\ H_2O$; $Ba_5H_4[P(W_2O_7)_6]_2 \cdot 36.39\ H_2O$; $Ba_7[P(W_2O_7)_6]_2 \cdot 34.24\ H_2O$ and its bertholide compound. The thermograms of the mono- up to tri-substituted salts exhibit 1-2 endothermic effects due to loss of water of hydration. The thermograms of the higher (tetra-, penta- and hepta-) substituted salts show endothermic effects of dehydration and exothermic effects which can be explained

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Thermographic Investigation of Barium-phosphotungstates SOV/78-4-10-10/40

by decomposition of (PT) under salt formation between the decomposition products. This assumption is based on the fact that the thermograms of the free phosphotungstic acid show no exothermic effects. All (PT) of barium are less affected by temperature changes than is the free phosphotungstic acid and the bi-substituted sodium-(PT). The least stable is the berthollide of the hepta-substituted salt. Four new hydrates were found: the bi-substituted barium-(PT) with 9.95 and 2.10 molecules H_2O, the penta-substituted Ba-(PT) with 7.02 molecules H_2O and the hepta-substituted Ba-(PT) with 4.28 molecules H_2O. There are 7 figures and 10 references, 4 of which are Soviet.

ASSOCIATION: Vtoroy Moskovskiy meditsinskiy institut im. N. I. Pirogova (Second Moscow Medical Institute imeni N. I. Pirogov)

SUBMITTED: May 16, 1958

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

AUTHORS: Nikitina, Ye. [illegible] Tsvetkov, N. A., Konyshev, [illegible] SOV/79-29-2-[illegible]/71

TITLE: On Compounds of Luteo Phosphotungstic Acid With Urea and Glycocoll (O soyedineniyakh lyuteofosfornovol'framovoy kisloty s mochevinoy i glikokolem)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 2, pp 357-364 (USSR)

ABSTRACT: The compounds of the above acid $H_{12}[P_2O_2(W_2O_7)_9] \cdot xH_2O$ (herein after called l.f.w.) with nitrogenous organic bases are only sparsely discussed in publications. Rosenheim and Jaenicke (Ref 1) synthesized the triple-substituted salt of guanidine from the empirical formula $3(CN_3H_6)O \cdot P_2O_5 \cdot 18WO_3 \cdot 10H_2O$, which was obtained in the form of yellow prisms. The action of 5 mol caustic soda and an excess of guanidine chloride upon the free acid yielded a difficultly soluble guanidine salt, which separated from the solution in the crystalline state as a compound of the empirical formula $5(CN_3H_6)_2O \cdot P_2O_5 \cdot 18WO_3 \cdot 18H_2O$. In this respect, the l.f.w. solution differs considerably from the phosphotungstic acid of the saturated series $H_7[P(W_2O_7)_6] \cdot xH_2O$, which has been often described as a filler

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of organic bases, amino acids and other compounds, and has been partially specified in the present paper (Ref 2). The purpose of the work under review was the synthesis of the compounds of the l.f.w. acid with urea and glycocoll, which have hitherto been unknown. The analogous compound phosphotungstic acid is not easily soluble in water and separates if the urea concentration in the solution exceeds the 2 % limit (Ref 3). As is known, urea yields salts with strong acids upon the reaction with an equivalent of acid. Well-known are its difficultly soluble salts of the formula $CO(NH_2)_2 \cdot HNO_3$, $2CO(NH_2)_2 \cdot H_2C_2O_4$ etc., which are decomposed by water (Ref 4) according to certain indications. Salts of the l.f.w. acid were thus synthesized with urea. On the basis of investigation results, these salts must be considered as products of the affiliation of urea to the l.f.w. acid. The crystalline salts of this acid were obtained with glycocoll. On the basis of the acid properties of the compounds obtained, the salts of glycocoll can be observed to form thanks to its alkaline properties. In the case of highly substituted salts

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, Ye.A.; TSVETKOV, N.A.

Viscosimetric study of the systems: isomeric α - and β-forms of ammonium luteophosphorotungstates - water. Zhur.neorg.khim. 5 no.2:474-476 F '60. (MIRA 13:6)

1. Vtoroy moskovskiy meditsinskiy institut im. N.I.Pirogova.
(Ammonium phosphotungstate)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, Ye. A.; SOKOLOVA, O.N.

Viscosimetric study of the system luteophosphomolybdic acid - water. Zhur. neorg. khim. 5 no.3:722-725 Mr '60. (MIRA 14:6)

1. Institut khimicheskikh reaktivov.
(Phosphomolybdic acid)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, Ye.A., KULAKOVA, N.Ye.

Equilibria in the systems barium phosphotungstates - water. Zhur. neorg. khim. 5 no.4:969-977 Ap '60. (MIRA 13:7)

1. Vtoroy Moskovskiy meditsinskiy institut im. N.I. Pirogova.
(Barium phosphotungstate)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, Ye.A.; TSVETKOV, N.A.

Study of the system β-luteophosphotungstic acid - water by solubility and viscosity methods. Zhur.neorg.khim. 5 no.6: 1304-1310 Je '60. (MIRA 13:7)

1. Vtoroy Moskovskiy meditsinskiy institut im. N.I.Pirogova.
(Phosphotungstic acid)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, Ye.A.; TSVETKOV, N.A.

Study of the system hexa-substituted sodium β-luteophosphotungstate - water by solubility and viscosity methods. Zhur.neorg.khim. 5 no.6:1311-1315 Je '60. (MIRA 13:7)

1. Vtoroy Moskovskiy meditsinskiy institut im. N.I.Pirogova.
(Phosphotungstic acid)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, Ye.A.; ABENOVA, M.U.

Studying microbiological conditions of soils influencing plant growth on reclaimed virgin and idle lands of the turf-Podzolic zone. Trudy Vses. inst. sel'khoz. mikrobiol. 16:5-14 '60. (MIRA 13:9)
(Soils--Bacteriology) (Reclamation of land)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

PERTSEVA, A.N.; NIKITINA, Ye.A.

Development of the microflora in the AMB peat-lime fertilizer produced by different methods. Trudy Vses. inst. sel'khoz. mikrobiol. 16:216-222 '60. (MIRA 13:9)

(Soil inoculation)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

S/079/60/030/05/05/074
B005/B002

AUTHORS: Nikitina, Ye. A., Prytkova, Ye. V.

TITLE: Equilibria in the Systems: Saturated Heteropolyacids - Organic Solvents

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 5, pp. 1410-14

TEXT: In the present paper the authors give the results of their systematic investigations of the solubility of 4 heteropoly acids (phosphotungstic acid, phosphomolybdic acid, silicotungstic acid, silicomolybdic acid) in alcohols (ethanol, propanol, isoamyl alcohol). They also give data on the solubility of the above heteropolyacids in ether and acetone. A separate section of the paper gives a report on the production and purification of heteropolyacids and alcohols, and on the methods of investigation. Table 1 shows the solubility of largely dehydrated phosphotungstic acid ($H_7[P(W_2O_7)_6]$) in ethanol and propanol at 20°. The composition of the deposit of the saturated solution is given with regard to both alcohols. Table 2 in the same way gives the solubility [illegible]

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dehydrated silicotungstic acid ($H_8[Si(W_2O_7)_6]$) in ethanol [illegible] heteropolyacids are easily soluble in alcohols In a largely dehydrated state the two heteropoly-molybdic acids together with alcohols gave extraordinarily viscous solutions Therefore it was impossible to investigate the solubility by means of this method Further investigations were made to determine the solubilities of nondehydrated heteropolyacids in alcohol. Table 3 gives a survey of the equilibria in the systems $H_7[P(Mo_2O_7)_6] \cdot 24\ H_2O$ - ethanol; $H_7[P(Mo_2O_7)_6] \cdot 24\ H_2O$ - propanol; $H_7[P(W_2O_7)_6] \cdot 21\ H_2O$ - ethanol; $H_7[P(W_2O_7)_6] \cdot 21\ H_2O$ - propanol at temperatures of 0°, 10°, 20°, 30°, and 40°C. Table 4 like Table 3 shows the equilibria of the 4 systems of $H_8[Si(Mo_2O_7)_6] \cdot 28\ H_2O$ and $H_8[Si(W_2O_7)_6] \cdot 26\ H_2O$ on the one hand, and ethanol and propanol on the other hand. Four figures give the solubilities of the 4 investigated heteropolyacids in ethanol and propanol in dependence on temperature (0° - 40°C). In all cases the solubility in ethanol was better than that in propanol. The solubility of heteropolyacids increases

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

Equilibria in the Systems: Saturated Hetero-polyacids - Organic Solvents

S/079/60/030/05/03/074
B005/B002

considerably with a rise in temperature. The deposit of the saturated alcoholic solution consists of a hydrate-alcoholate of the corresponding heteropolyacid. While the water content of this deposit decreases with a rise in temperature, the alcohol content hardly changes with temperature, and lies between 1 and 2 molecules per molecule of the deposit in all of the heteropolyacids investigated. Table 5 gives the equilibria of the systems $H_7[P(W_2O_7)_6] \cdot 16\ H_2O$ - isoamyl alcohol and $H_8[Si(W_2O_7)_6] \cdot 18\ H_2O$ - isoamyl alcohol at 0°, 20°, 40°, 60°, and $80^\circ C$. Table 6 gives the solubilities of the four heteropolyacids investigated in acetone and ether at $20^\circ C$. There are 5 figures, 6 tables, and 5 Soviet references.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov (All-Union Scientific Research Institute of Chemical Reagents)

SUBMITTED: May 15, 1959

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

S/081/62/000/005/090/112
B162/B101

11.9700

AUTHORS: Sanin, P. I., Sher, V. V., Vipper, A. B., Glukhodei, I. S., Nikitskaya, Ye. A.

TITLE: Investigation of additives of the type of metal dialkyl dithiophosphates

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 5, 1962, 530, abstract 5M230 (Sb. "Prisadki k maslam i toplivam", M., Gostoptekhizdat, 1961, 26-34)

TEXT: As a result of the synthesis and investigation of a series of technical additives of the type of dialkyl dithiophosphates (DP) of Ba and Zn, it is established that these additives have washing, anticorrosion, and antiwear properties, are antioxidants and some of them depressors and de-emulsifiers. Certain properties of DP as additives to lubricating oils appear in different degrees and depend on the structure of the additives. The properties of the additives which depend on their surface activity (washing and de-emulsifying action, partly anticorrosion action, drop in

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B162/B101

Investigation of additives ...

solidification point) are in agreement with their adsorption characteristic and appear to the greatest extent in the high-molecular DP of barium. Other properties (antiwear) are more strongly marked in the comparatively low-molecular DP of metals. The greatest practical interest is offered by the additive DP-1 with washing, anticorrosion, and de-emulsifying properties, and the additive DP-11 which is characterized by antiwear properties.
Abstracter's note: Complete translation.

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, Ye.A.; TSVETKOV, N.A.

Thermographic study of isomeric ammonium luteophosphotungstates and β-luteophosphotungstic acid. Zhur.neorg.khim. 7 no.2:325-332 F '62. (MIRA 15:3)

1. Vtoroy Moskovskiy meditsinskiy institut imeni Pirogova.
(AMMONIUM PHOSPHOTUNGSTATE)
(PHOSPHOTUNGSTIC ACID) (THERMAL ANALYSIS)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

SLAVIN, P.S.; NIKITINA, Ye. A.

Practice of goechemical regionalization for purposes of petroleum prospecting. Sov. geol. 6 no.6:65-74 Je '63. (MIRA 16:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut yadernoy geofiziki i geokhimii.
(Turkmenistan—Geochemical prospecting)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

S/078/63/008/001/012/026
B117/B108

AUTHORS: Nikitina, Ye. A., Tsvetkov, N. A.

TITLE: Some properties of isomeric α- and β-ammonium luteo phosphotungstates

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 8, no. 1, 1963, 105-109

TEXT: It has been shown that the β-modification of ammonium luteo phosphotungstates (ALPT) is polymorphous, forming two crystal types of equal chemical composition $(NH_4)_6H_6[P_2O_2(W_2O_7)_9]\cdot 11H_2O$ and equal properties: β_1-crystals are mainly formed by slow crystallization from a large quantity of solution, their size being 2-3 cm. β_2-crystals reach a size of 1-2 cm and tend to intergrowths. The α-form consists of only one crystal type. These crystals are small (1-2 mm) hexagonal prisms bounded by three pinacoids. They tend to intergrowths. Their color is associated with the easy reducibility of the α-form, and may be yellow to intensely blue depending on the conditions of production. The crystals of the β-form are less sensitive to reducing agents. Their color is bright yellow. An

Card 1/2

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, Ye.A.

"Dead water" in oceans. Priroda 52 no.3:91-93 Ag '63. (MIRA 16:9)

1. Morskoy gidrofizicheskiy institut.
(Ship resistance) (Seawater)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8

NIKITINA, Ye.A.

Distribution of wi[illegible] based on their heights and periods, material on the eleventh voyage of the research ship "Mikhail Lomonosov." Okeanologiia 3 n[illegible]. (MIRA 17:2)

1. Morskoy gidrofizi[illegible] AN UkrSSR.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020018-8"