

ACCESSION NR: AT4028342

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AUTHOR: Chalty\*kyan, O. A.; Beyleryan, N. M.

TITLE: Kinetics of potassium persulphate reactions with amines

SOURCE: Soveshchaniye po khimii perekisny\*kh soyedineniy. Second, Moscow, 1961. Khimiya perekisny\*kh soyedineniy (chemistry of peroxide compounds); Doklady\* soveshchaniy. Moscow, Izd-vo AN SSSR, 1963, 260-264

TOPIC TAGS: potassium persulphate, amine, peroxide, organic peroxide, aliphatic amine, aromatic amine, heterocyclic amine, amino alcohol, benzoil peroxide, potassium hydroxide, polymerization

ABSTRACT: Unique oxidation reduction systems occur in the reaction of peroxides, particularly with amines. Some of these systems can be successfully applied for initiating polymerization. A systematic investigation of the kinetics of the reactions of various aliphatic, aromatic, and heterocyclic amines, as well as amino alcohols with benzoil peroxide in organic media and with potassium persulphate in aqueous solutions were undertaken by the authors in order to explain the differences in the reaction mechanism of amines with peroxides. In studying the kinetics of these reactions, a number of general regularities were found including the fact that

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amines which enter easily into a reaction with benzoyl peroxide in organic media and with potassium persulphate in aqueous solutions can be divided into two groups, the first containing primary and secondary aliphatic amines and piperidine, the second containing tertiary amines and amino alcohols. This separation is derived from graphs. Peroxide-amine systems of the second group initiate polymerization of vinyl acetate with more or less efficiency in solution as well as in an emulsion at a temperature below the thermal decay temperature of the peroxides. A diagram is presented to explain the effect of the alkali, the formation of diethylvinylamine and subsequent oxidation of the latter by the persulphate in the presence of potassium hydroxide or by a temperature increase (self-acceleration). Orig. art. has: 6 figures and 2 formulas.

ASSOCIATION: Yerevanskiy gosudarstvennyy universitet (Yerevan State University)

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Card 2/2

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S/0000/63/000/000/0265/0269

AUTHOR: Beyleryan, N. N.; Chalchyanyan, O. A.

TITLE: Kinetics of potassium persulphate reactions with amines. The effect of cations on variable valence

SOURCE: Soveshchaniya po khimii perekisnykh soyedineniy. Second, Moscow, 1961. Khimiya perekisnykh soyedineniy (chemistry of peroxide compounds); Sobliadya soveshchaniy. Moscow, Izda-vo AN SSSR, 1963, 265-269

TOPIC TAGS: potassium persulphate, amine, variable valence, aliphatic amine, cation, silver (I), copper (II), cobalt (II)

ABSTRACT: the authors tested the catalytic activity of two groups of cations: cations, the valence state of which is difficult to measure and cations of variable valency (cobalt (II), copper (II), and silver (I)). The authors selected a persulphate reaction with diethylamine in the presence of the above mentioned cations as a standard reaction. In a previous experiment, the authors measured the speed of catalytic oxidation of a number of amines and established that under the same conditions, the persulphate reaction with aminol alcohols occurs with self-acceleration and for the majority of aliphatic amines the following equation is valid

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$$\lg W_1^0 = b - a \lg K_1 \quad (2)$$

where  $W_1^0$  is the initial velocity of the catalyzed reaction;  $K_1$  is the dissociation constant of the chosen amines;  $a$  and  $b$  are constants. In conclusion, the authors claim that in persulphate-amine reactions, only cations of variable valence have a catalytic activity. The amino alcohols-persulphate- $Ag^+$  reactions when  $(Ag^+) \geq 1 \times 10^{-4}$  g-ion/ltr are of a self-accelerating character. A probable explanation is given to this phenomenon. The following correlation occurs in the case of persulphate-aliphatic amines- $Ag^+$  reactions:

$$\lg W_{cat}^0 = b - a \lg k_1$$

Two reactions occur in parallel: one is the persulphate reaction with a free amine molecule and the other reaction is with amine of silver or copper. Experimentally established kinetic regularities lead to the assumption that a complex containing in addition to one cation ( $Ag^+$  or  $Cu^{2+}$ ) one amine molecule is kinetically active, i.e., the monoamine complex of copper or silver is kinetically active. Orig. art. has: 5 figures and 3 formulas

Card 2/3

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OTHER: 000

Card 3/3

BEYLERYAN, N.M.; KARAPETYAN, F.A.; GUKASYAN, T.T.

Possibility of oxidation of formic acid and formate ion by peroxides.  
Izv.AN Arm.SSR.Khim.nauki 17 no.1:7-13 '64. (MIRA 17:4)

1. Yerevanskiy gosudarstvennyy universitet, problemnaya laboratoriya  
kinetiki polimerizatsionnykh protsessov.

CHALTYKYAN, O.A.; BEYLERYAN, N.M.; GUKASYAN, T.T.

Mechanism of oxidation of formate ion by persulfate in aqueous solutions in the presence of  $\text{Cu}^{2+}$ . Izv.AN Arm.SSR.Khim.nauki 17 no.1:14-20 '64. (MIRA 17:4)

1. Yerevanskiy gosudarstvennyy universitet, problemnaya laboratoriya kinetiki polimerizatsionnykh protsessov.

CHALTYKYAN, O.A.; BEYLERYAN, N.M.; SARUKHANYAN, E.R.

Effect of the solvent on the reaction rate of benzoyl peroxide  
with diethylamine. Izv.AN Arm.SSR.Khim.nauki 17 no.1:21-28  
'64. (MIRA 17:4)

1. Yerevanskiy gosudarstvennyy universitet, problemnaya  
laboratoriya kinetiki polimerizatsionnykh protsessov.



SARUKHANYAN, E.R.; BEYLERYAN, N.M.; CHALTYKYAN, O.A.

Effect of the structure of amines on the kinetics of reactions of  
benzoyl peroxide with amino alcohols. Dokl. AN Arm. SSR 38 no.5:  
285-288 '64. (MIRA 17:6)

1. Yerevanskiy gosudarstvennyy universitet. Predstavleno akademikom  
AN Armyanskoy SSR M.A.Ter-Karapetyanom.

CHALTYKYAN, O.A.; BEYLERYAN, N.M.; SAMVELYAN, A.L.

Temperature dependence of the rate of peroxy sulfate - triethanolamine  
reaction. Dokl. AN Arm. SSR 39 no.1:35-40 '64. (MIRA 17:8)

1. Yerevanskiy gosudarstvennyy universitet. Predstavleno  
akademikom AN Armyanskoy SSR M.A.Ter-Karapetynom.

MKHITARYAN, S.L.; BEYLERYAN, N.M.; CHALTYKYAN, O.A.

Study of peroxide-amine systems as polymerization initiators.  
Izv. AN Arm.SSR. Khim. nauki 16 no.6:527-534 '63 (MIRA 17:8)

i. Yerevanskiy gosudarstvennyy universitet, problemnaya labora-  
toriya kinetiki polimerizatsii.

BEYLERYAN, N.M.; GRIGORYAN, S.K.; CHALTYKYAN, O.A.

Kinetics of the reactions of amines with hydroperoxides.  
Part 1: Reaction of cumene hydroperoxide with triethanolamine.  
Izv.AN Arm.SSR.Khim.nauki 17 no. 3:245-254 '64.

Kinetics of the reactions of amines with hydroperoxides.  
Part 2: Effect of potassium hydroxide on the rate of the  
reaction cumene hydroperoxide - triethanolamine. Ibid.:255-261  
(MIRA 17:7)

1. Yerevanskiy gosudarstvennyy universitet, kafedra fizicheskoy  
i kolloidnoy khimii.

BEYLERIAN, N.M.; GRIGORYAN, S.K.; CHALTYKYAN, O.A.

Kinetics of the reactions of amines with hydroperoxides. Part 3:  
Mechanism of the reaction of cumene hydroperoxide with triethanol-  
amine. Izv. AN Arm. SSR. Khim. nauki 17 no. 6: 604-612 '64.

(MIRA 18:6)

1. Yerevanskiy gosudarstvennyy universitet, kafedra fizicheskoy i  
kolloidnoy khimii.

CHALTYKYAN, O.A.; GRIGORYAN, S.K.; BEYLERYAN, N.M.

Kinetics of reactions of hydrogen peroxide with amines.  
Part 4: Reaction kinetics of cumene hydroperoxide with  
triethylamine and diethylaminoethanol. Izv. AN Arm. SSR.  
Khim. nauki 18 no.2:133-138 '65. (MIRA 18:11)

1. Yerevanskiy gosudarstvennyy universitet, kafedra fizi-  
cheskoy khimii. Submitted July 16, 1964.

GRIGORYAN, S.K.; CHALTYKYAN, O.A.; BEYLERYAN, N.M.

Effect of the structure of amines on the decomposition rate  
of cumene hydroperoxide. Dokl. AN Arm. SSR 40 no.3:165-167  
'65. (MIRA 18:12)

1. Yerevanskiy gosudarstvennyy universitet. Submitted July  
21, 1964.

BEYLES, R.G.; SAFINA, R.A.; BEYLES, E.M.

Pyridine derivatives of peroxymolybdic and peroxytungstic acids. Zhur. neorg. khim. 6 no.7:1612-1615 J1 '61.  
(MIRA 14:7)

1. Kemerovskiy gornyy institut i Kemerovskiy meditsinskiy institut.

(Peroxymolybdic acid) (Peroxytungstic acid)  
(Pyridine)

D



BEYLES, R. G.; BEYLES, E. M.

Reaction of aromatic aldehydes with derivatives of pyrazolone.  
Synthesis of 4-salicylidene-1-phenyl-3-methyl-5-pyrazolone  
and its reaction with titanium salt solutions. Zhur. ob. khim.  
33 no.1:190-192 '63. (MIRA 16:1)

1. Kemerovskiy gornyy institut.

(Aldehydes) (Pyrazolinone) (Titanium salts)

BEYLES, R.G., BEYLES, E.M.

Peroxomolybdenic derivatives of organic bases. Zhur. neorg.  
khim. 10 no.7:1618-1623 71 '65. (MIRA 18:6)

1. Kemerovskiy gornyy Institut.

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PROPERTIES AND PROPERTIES INDEX

Chemistry of polynuclear hydrocarbons. XI. *ms.*  
 Dichloro- and *ms.*-dichloronaphthalene. I. Ya. Postov-  
 skill and R. G. Bales. *J. Gen. Chem. (U. S. S. R.)* 13,  
 823-9(1943)(English summary); cf. *C. A.* 38, 1239.  
 Naphthalene (1 g.) in 20 cc. tetrachlorethane, at -15°,  
 was treated with a slow stream of Cl for 5 min. until soln.  
 occurred, after which the Cl excess was removed by an air  
 stream; as the solvent evaporated, fine needles of naphthalene  
 tetrachloride appeared in 46% yield, decamp. 200-5°; in  
 soln. or upon heating it readily loses HCl to yield *ms.*-  
 dichloronaphthalene, red crystals, m. 220-1°, which, ex-  
 posed to light in benzene, fades to a yellow color and de-  
 posits yellow crystals, m. 230-4° and on discn. in dry state  
 regenerate the red di-Cl compd. Low-temp. bromination  
 of naphthalene in tetrachlorethane yields analogously  
 9,10-dibromonaphthalene, red needles, m. 228-5°, which  
 can be crystd. from dichloroethane and m. 201-3°. Both  
 the di-Cl and the di-Br derivs. treated with alc. KOH at  
 150-60° yield, besides small amts. of naphthalene, 14-24%  
 9,10-naphthalenquinone, m. 284-5° (from AcOH). The  
 red dichloronaphthalene gives on oxidation with Cr oxide  
 in AcOH 9-chloronaphthalene-10,11-quinone, m. 355-6°  
 (30%) (from pyridine). G. M. Kosolapoff

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

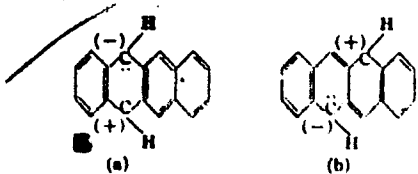
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130000 02	130000 02 01 02 03	130000 02 01 02 03	130000 02 01 02 03

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PROCESSES AND PROPERTIES INDEX

The chemistry of naphthalene. *meso*-Dichloronaphthalene. I. J. Postovskii and R. G. Beyles. *Compt. rend. acad. sci. U. R. S. S.*, **20**, 162-5(1943).—To explain the peculiar reactions of naphthalene (I), P. and B. attribute an important role to the following resonance structures:



in which the *meso*-C atoms have the character of free radicals, with structure (b) being comparatively stable at the expense of complete symmetry and of a continuous conjugation of bonds. I in tetrachlorethane, treated with Cl at  $-15^{\circ}$ , yields 46% of a colorless addn. product, decomp.  $201-5^{\circ}$ , which easily splits off HCl to give 60% 9,10-dichloronaphthalene (II), dark red, m.  $220-1^{\circ}$ . The 9,10-dichloro compd. (III), dark red, m.  $223-5^{\circ}$ , is similarly obtained in 43% yield. I and 9,10-naphthalenequinone, m.  $282-3^{\circ}$ , are obtained by heating II and III at  $180-60^{\circ}$  in sealed tubes with alk. alkali. II upon treatment with  $CrO_3$  in glacial AcOH yields 9-chloro-10,12-naphthalenequinone, m.  $340-80^{\circ}$ , which is also obtained by chlorinating 9,11-naphthalenequinone (IV) with  $SO_2Cl_2$ . The absorption spectra of II, III and IV are reported.

Adrien S. DuBois

C.A.

10

**Preparation of naphthosone.** R. G. Belles and I. Ya. Postovskii (S. M. Kirov Polytech. Inst., Sverdlovsk). *Zhur. Obshchei Khim. (J. Gen. Chem.)* 20, 518-21 (1950). The methods of prepn. of naphthosone (I) are reviewed and improved procedures indicated as follows.  $(\alpha\text{-C}_{10}\text{H}_7\text{CO})_2$  (1 g.), heated 20 hrs. at 200-300° in 50 ml. purified transformer oil, gave on cooling, besides unreacted material, some 0.15 g. red needles of 6,11-dihydroxynaphthosone, m. 340° (from  $\text{PhNO}_2$ , then  $\text{Cl}_2\text{CHCOCl}$ ), as a result of intramol. rearrangement.  $(\alpha\text{-C}_{10}\text{H}_7\text{CO})_2$  (1 g.), 2 g. Zn dust, 5 g. dry  $\text{ZnCl}_2$ , and 2 g. NaCl heated on an open flame 15 min. gave a sublimate of I and the dihydro deriv.; dehydrogenation of the crude product by heating with litharge gave 0.25 g. pure I, m. 340° (from xylene). Repetition of the 1st expt. under these conditions (Zn and  $\text{ZnCl}_2$ ) also gave 11% I. If  $\text{ZnCl}_2$  is absent, either procedure is very ineffective.

G. M. Kosolapoff

BA

**Chemistry of naphthoquinones. V. Structure of halogen derivatives of naphthoquinones.** I. Y. Pustovsky and M. G. Briles (*J. gen. Chem. USSR*, 1960, 30, 828-830 [U.S. transl., 351-353]; cf. preceding abstract).—It was unobscured whether the compounds obtained from naphthacene-8:11-quinone and  $SO_2Cl_2$  are 12-chloro- and 6:12-dichloronaphthacene-5:11-quinone or 11-chloro- and 6:11-dichloronaphthacene-5:12-quinone, respectively. A polarographic investigation—determining the half-wave potentials of these compounds—confirms the paraquinonoid structure. Hence, the purple diamide deriv. has a *para* structure. An intramol. rearrangement of *ansa*naphthoquinone takes place therefore during its reaction with  $SO_2Cl_2$ .

Investigation is made with a visual polarograph, the anode being a normal calomel half-cell and the cathode a Hg-drop electrode, immersed in the solution tested. Anode and cathode are connected through an agar-agar switch filled with saturated KCl. A weighed quantity of the quinone is dissolved, with heating, in pure  $C_2H_6$  to which EtOH and 0.1 M-KCl with 2 drops of 0.5% gelatin are added. If a ppt. forms when  $H_2$  is passed, PrOH must be substituted for EtOH. Owing to the low solubility of the quinones, buffer mixtures are not used. Pure  $H_2$  is passed through the solution for 10-15 min. prior to each run, the curve is plotted and the operations are repeated.  $PCl_5$  is added gradually to 5:12-dihydroxynaphthacene-6:11-quinone in boiling  $CCl_4$  and the mixture is boiled for 3 hr. The yellow "complex" which separates from the cooled solution is filtered, dried, and warmed at

*over*

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60-70° for 1 hr. with conc.  $H_2SO_4$  which causes evolution of HCl and formation of a red solution which deposits crude 1:12-dichloronaphthalene-6:11-quinone (87%) when poured *c.* to ice; this is extracted with boiling xylene thereby giving the pure compound, m.p. 288-292°, in 44% yield. Heating samples of monochloronaphthalenequinones (prepared by ring-closure of *o*-1-chloro-2-naphthylbenzoic acid or from 1-naphthalene(6:11)quinone and  $SO_2Cl_2$ ) gives *o*-N-ethylamino-naphthalene-6:11-quinone,  $C_{20}H_{17}O_2N$ , m.p. 288-290°. *o*-10-D-(N-ethylamino)naphthalene-6:11-quinone,  $C_{20}H_{17}O_2N$ , m.p. 232-236°, is derived similarly from the corresponding  $Cl_2$  compound. H. WARR.

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10

**Chlorination of naphthalene and some peculiarities of its structure.** R. G. Belles and I. Ya. Postovskii (S. M. Kuov Ural Polytech. Inst., Sverdlovsk). *Zhur. Obshchei Khim.* (J. Gen. Chem.) 20, 1711-19 (1950); cf. *C.A.* 45, 390r. In the chlorination of naphthalene (I) there is a tendency toward reactions at the *ansa*-5,11 positions. The red dichloronaphthalene (II) has the *ansa*-structure as indicated by its oxidation product: 6-chloronaphthalenequinone (III). In the chlorination of I with  $\text{SO}_2\text{Cl}_2$ , either the red II or the colorless *ansa*-dihydrodichloride (IV) may form. The peculiarity of I derives from the specific structure in which the rings are arranged in a linear manner with the presence of 2 central equiv. nuclei. Boiling 1.5 g. powd. 9,10-dichloronaphthalene-11,12-quinone (V), m. 250-2°, with 3 g. Zn dust in 100 ml. 2 N NaOH 10 hrs., followed by neutralization with  $\text{H}_2\text{SO}_4$ , gave 50% I, m. 340°, and 0.5 g. unreacted material. No reaction occurs at room temp. between I and  $\text{PCl}_5$  in  $\text{PhNO}_2$ , but at the b.p. a red color forms and HCl is evolved; cooling after 5 min. gives 40% red II, m. 218-20°; the results are similar with  $\text{ICl}_4$  but some reaction takes place even at room temp. After 15 min. at room temp. 0.5 g. I and 1 ml.  $\text{SO}_2\text{Cl}_2$  yield 40% almost colorless IV,  $\text{C}_{10}\text{H}_6\text{Cl}_2$ , m. 180° (from  $\text{C}_{10}\text{H}_8$ ), which, heated in tetrachloroethane (VI) 20 min., gave 30% of the

red II, m. 218-20°, as above. I heated with excess  $\text{SO}_2\text{Cl}_2$  2 hrs. at 130-5° in a sealed tube forms a hexa-Cl compd., probably 5,5,6,11,12,12-hexachloro-5,12-dihydronaphthalene (VII), m. 265° (from VI); this heated with concd.  $\text{H}_2\text{SO}_4$  0.5 hr. at 60-70° gave HCl and a red soln. which on treatment with ice gave authentic V, m. 249-51°. When 0.2 g. I in 2 ml. VI is treated with  $\text{SO}_2\text{Cl}_2$  until all the I dissolves (no excess) and the soln. is heated, a red color forms and the red II forms in 40% yield; heating this with excess  $\text{SO}_2\text{Cl}_2$  in a sealed tube to 130-40° gives VII. The red II heated in xylene with *maleic anhydride* gave 35% of the adduct, m. 280-2° (from VI), after a 30-min. reaction. The ethylamide obtained either from III, from the 5,11- $\text{ClC}_6\text{H}_4\text{CO}/\text{CaH}_4\text{CO}_2\text{H}$  was the same 6-N-ethylamidionaphthalenequinone (cf. *C.I.* 35, 6580; 39, 928).

G. M. Kosolapoff



USSR/Chemistry - Vanadium Compounds Jan/Feb 51

"Quantitative Determination of Vanadium With Diantipyrylphenylmethane," S. I. Gusev, R. G. Beyles, Ye. V. Sokolova, Chair Gen Chem and Biochem, Molotov State Med Inst

"Zhur Analit Khim" Vol VI, No 1, pp 43-48

Diantipyrylphenylmethane (I) in acid will ppt  $V^{5+}$  as difficultly sol compd  $(C_{11}H_{11}ON_2)_2CHC_6H_5)_2 H_4V_6O_{17}$  (II). Developed new method for gravimetric detn of V (as  $V_2O_5$  or II) in presence of

177110

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(Contd)

$NaCl$ ,  $Na_2SO_4$ ,  $NaNO_3$ . Showed possibility of volumetric detn of V by dissolving II in alkali and titrating excess of alkali. Showed possibility of volumetric and gravimetric detn of V in ferrovanadium with I.

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BEYLES, R. G.

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Reaction of some pyrazolone derivatives with the ferric ion and with cyanide complexes. S. I. Gusev and R. Belen (State Med. Inst., Mokotov). *Zhur. Obshch. Khim. (J. Gen. Chem.)* 21, 1971-3(1951).—Addn. to 20 ml. 5% aq. soln. of antipyrine of 0.2 g.  $\text{Fe}(\text{SO}_4)_3$  in 5 ml.  $\text{H}_2\text{O}$ , followed by 6 ml. 5% aq.  $\text{K}_3\text{Fe}(\text{CN})_6$  gave a flocculent ppt., which after washing and drying at  $110^\circ$  was a deep-red powder, rather insol. in  $\text{H}_2\text{O}$  and slowly hydrolyzed especially on heating in presence of acids, yielding  $\text{Fe}^{+++}$  ion. Analysis indicates the structure  $(\text{Fe}(\text{C}_7\text{H}_7\text{ON}_3)_2)^{+++}[\text{Fe}(\text{CN})_6]^{---}$ . With  $\text{FeSO}_4$  it yields Turnbull blue. A similar reaction of antipyrine,  $\text{Fe}(\text{SO}_4)_3$ , and Na nitroprusside yields an analogous product,  $(\text{Fe}(\text{C}_7\text{H}_7\text{ON}_3)_2[\text{Fe}(\text{CN})_5\text{NO}])_2$ . Both form trihydrates. Treatment of  $\text{Na}_2\text{NH}_2[\text{Fe}(\text{CN})_5\text{NH}_2]$  with  $\text{NaNO}_2$  in acid soln. yields  $\text{Na}_2[\text{Fe}(\text{CN})_5\text{NH}_2]$ , a soln. of which gradually added to the ferricyprine soln. above gave red-brown powder,  $(\text{Fe}(\text{C}_7\text{H}_7\text{ON}_3)_2[\text{Fe}(\text{CN})_5\text{NH}_2] \cdot 12\text{H}_2\text{O})$ ; the  $\text{H}_2\text{O}$  is lost on drying. Treatment of antipyrine in aq. soln. with  $\text{FeNH}_4$  alum and  $\text{Na}_2[\text{Co}(\text{CN})_6]$  gives deep-red  $(\text{Fe}(\text{C}_7\text{H}_7\text{ON}_3)_2[\text{Co}(\text{CN})_6])_2$ , which forms a tetrahydrate. Name of the product—show cryst. structure G. M. Kosolapoff

GUSEV, S.I.; BEYLES, R.G.

Use of diantipyryl-phenylmethane in analytical chemistry. II. J. anal.  
Chem. USSR, '52, 7. 219-225. (MLRA 5:7)  
(BA - A I Mr '53:287)

DEYLES, R. G.

USSR

Use of products of pyrazole in analytical chemistry. Detection and determination of titanium with diisopropylhydroxyphenylmethane. S. I. Gusev and E. G. Belok. *Dokl. Akad. Nauk SSSR, Chem. Div.*, No. 5(8), 64-78(1951); cf. *Anal. Chem.* 44, 8853t. --In an acid Ti soln. diisopropylhydroxyphenylmethane (I) gives a yellow color suitable for detg. Ti. Properties, and use of this reagent are described. At first the color obtained with  $Ti^{4+}$  is less intense than that with  $Ti^{3+}$  but after 0.5 hr. the color is completely developed.  $TiCl_4$  with I gives a Ti complex (II), orange crystals.  $TiCl_4$  with I does not form II but if the mixt. is reduced, II forms quickly. II is sol. in  $H_2O$  (1%) and alc. (1%) but not in org. solvents.  $AgNO_3$  soln. ppts.  $AgCl$  from II. Molar cond. of aq. soln. of II indicates 3 ions. II is not destroyed by heating with  $H_3PO_4$  or  $HF$  but if they are present with Ti before I is added, II is not formed. Compls. similar to I but without an OH group, or with  $p-OH$  group do not give a Ti complex. The soln. of II is neutral. If  $TiCl_4$  reacts with the sulfate salt of I, II is still formed.  $Ti^{4+}$  with I gives a substance sol. in alc. and easily reduced. This reduction probably occurs in dil. solns. by the excess of I and accounts for the time required for full color development when  $Ti^{4+}$  is present. To det. Ti in solns.,  $W^{5+}$  and  $Mo^{6+}$  interfere.  $Fe^{3+}$  with I gives a brown color which disappears when  $H_3PO_4$  is added. Reduction to  $Fe^{2+}$  is also suggested.  $V^{5+}$  salts form a ppt. sol. in dil. alc. If the amts. are not too

(over)

9/1/57

Cr, Ni, and  $V^{5+}$  can be compensated for in the colorimetric method by adding them to the standard soln. Salts of Bi, Sn, and Sb form white ppt. sol. in aq. alc. and do not interfere. Pb salts do not interfere. They give heavy white crystals which can be filtered off.  $UO_2^{2+}$  forms a yellow green color which disappears on acidification. Mutual observed limit of I is 0.33  $\mu$ /ml. Reaction of I with  $ClO_4^-$ , iodide,  $SCN^-$ ,  $NO_2^-$ , and  $CrO_4^{2-}$  gives slightly sol. crystals. The HCl salt of I (III) is obtained almost quantitatively by adding 5 g. salicylaldehyde and 10 ml. concd. HCl to 15 g. anhydrous vented with 10 ml. alc. After 2 hrs. 200 ml.  $H_2O$  is added gradually. Crystals are filtered off, washed with 0.5N HCl, and dried at 60-70°. Samples for analysis are recrystd. from N HCl and washed with a little  $H_2O$ . The soln. in  $H_2O$  (0.1%) and alc. (5.5%) greatly increases on acidification. Substitution of  $H_2SO_4$  (d. 1.83) or 7.5N  $HNO_3$  for HCl in this synthesis gives sulfate or nitrate salts. II is obtained by adding 20% NaOH to III. The Na product is dissolved in considerable  $H_2O$  and I is pptd. by introducing  $CO_2$ . Amal's method for I is simpler. Crystals of I, II, and III are shown. II is obtained by adding 15 ml. 15%  $TiCl_3$  soln. to 10 g. I and 10 ml. alc. and heating the dark mass to complete soln. The whole prepn. is made under  $CO_2$ . The soln. is cooled, crystals are filtered off, and recrystd. from alc., giving 6 g. II plus also 3.2 g. from the mother liquor. Mineral acids do not act on the inner complex even with heating; alkali hydroxide hydrolyzes it with pptn. of hydrated  $TiO_2$ . III decomp.

S.I. 6 USEV

without melting, above 250°. The reagent for tests is a 2% soln. of III in 90% alc. with 10 drops concd. HCl and 0.1-0.2 g. hydroquinone in 100 ml. of soln. To detect Ti in the presence of Fe, add the reagent to the test soln. After 0.5 hr. add several drops of concd. H<sub>3</sub>PO<sub>4</sub>. In the presence of Ti the brown color becomes yellow; in absence of Ti the soln. is colorless. In the presence of Fe<sup>2+</sup>, V<sup>5+</sup>, and Cr<sup>6+</sup> the test soln. is acidified with HCl and reduced by Zn strips until no reaction of Fe<sup>2+</sup> with SCN<sup>-</sup> is obtained. Reagent is added and a yellow color indicates Ti. Mo<sup>6+</sup> and W<sup>6+</sup> interfere. Known colorimetric mixts. were prepd. by mixing 0 ml. Ti soln. (Standard TiCl<sub>3</sub> solns. contg. 5-20  $\gamma$  Ti/ml.), 3 ml. alc., and 1 ml. reagent. The color intensity can be measured visually after 0.5 hr. and does not decrease with time. High HCl concn. (10%) delays the color development; HNO<sub>3</sub> has no effect. Sulfates delay color development; more than 5% H<sub>2</sub>SO<sub>4</sub> prevents complete development. Synthetic mixts. contg. 1 ml. of known Ti soln., 2 ml. N FeCl<sub>3</sub>, and 1 ml. of V<sup>5+</sup> salt (contg. 0.5 mg. V) were treated with 5 ml. alc. and 1 ml. reagent. After 0.5 hr. 5 drops H<sub>3</sub>PO<sub>4</sub> was added and the intensity was measured. Relative error was 0-8% for 7 mixts. contg. 5-30  $\gamma$  Ti. Analogous results were obtained if the mixts. were reduced with Zn before reagent was added (H<sub>3</sub>PO<sub>4</sub> was then omitted.) Directions are given in detail for the analysis of steel.

3/2

Burilla Mayerle

BEYLES, R. G.

1291. Microcrystaloscopic determination of Titan-  
 ium with disulphuric acid (H<sub>2</sub>SO<sub>4</sub>)  
 (salicylidenediphenazone). *Chem. Zvest.* 1938, 20 (11).  
 Altai Pedagog. Inst., Zvezd. Lab., 1938, 20 (11).  
 1296. Salicylidenediphenazone (II) hydrochloride,  
 obtained from salicylaldehyde and phenazone,  
 reacts in neutral or weakly acidic medium with Ti<sup>4+</sup>  
 in the presence of NO<sub>3</sub><sup>-</sup>, ClO<sub>4</sub><sup>-</sup>, SCN<sup>-</sup> or I<sup>-</sup> to give  
 pale-yellow difficultly sol. needles having the formula  
 TITON<sub>x</sub>, where X is NO<sub>3</sub><sup>-</sup>, etc. The minimum  
 amount of Ti that can be detected is 0.2 to 0.3 μg  
 in 2 to 5 μg. at a limiting dilution of 1 in 1 x 10<sup>4</sup>.  
 No interference is caused by Al<sup>3+</sup>, Fe<sup>3+</sup>, Fe<sup>2+</sup>,  
 Mn<sup>2+</sup>, Ni<sup>2+</sup>, Co<sup>2+</sup>, Cr<sup>3+</sup>, Sn<sup>2+</sup>, VO<sub>3</sub><sup>-</sup>, Pb<sup>2+</sup>, Cu<sup>2+</sup> and  
 Zn<sup>2+</sup>.  
 G. S. SMITH

1291

BEYLES, R. G.

137-58-1-2147

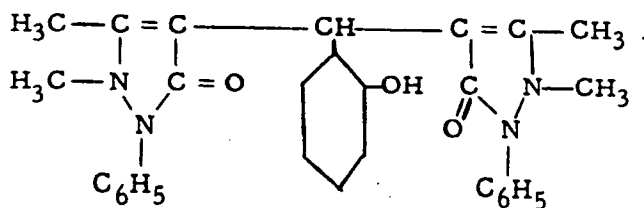
Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr.1, p 292 (USSR)

AUTHOR: Beyles, R. G.

TITLE: New Qualitative Titanium Reactions (Novyye kachestvennyye reaktsii titana)

PERIODICAL: Uch. zap. Gorno-Altayskiy gos. ped. in-t, 1956, Nr.1, pp 137-140

ABSTRACT: A qualitative reaction for  $Ti^{4+}$  with diantipyrilorthoxyphenylmethane (I) is suggested:



Card 1/2



137-58-1-2147

### New Qualitative Titanium Reactions

with which Ti forms a crystalline compound. Not inhibited by caustics, the alkaline earth metals, Pb, Al, Fe<sup>2+</sup>, Fe<sup>3+</sup>, Mn<sup>2+</sup>, Ni, Co, Cr<sup>3+</sup>, Sn<sup>2+</sup>, VO<sub>3</sub><sup>-</sup>, and Zr when present in quantities of  $\frac{1}{100}$  to  $\frac{1}{200}$  of the Ti content. To free the Ti, to 1 cc of solution there is added dry I and one or two crystals of hydroquinone, the solution being heated 5-10 min at 60°, the I being stirred with a stirrer until the solution takes on a red-brown coloration. Then saturated KClO<sub>3</sub> or KNO<sub>3</sub> solution is added, and a crystalline precipitate of Ti with I comes down after a brief heating.

Z. G.

1. Titanium--Chemical reactions
2. Diantipyrilorthoxyphenylmethane
- Chemical reactions
3. Alkaline earth elements--Chemical reactions

Card 2/2

AUTHOR: Beyles, R. G. SOV / 79-28-6-33/63

TITLE: The Reaction of the Salts of Tetravalent Titanium Dissolved in Water With Pyrazolone Derivatives (Vzaimodeystviye vodnykh rastvorov soley chetyrekhvalentnogo titana s proizvodnymi pirazolona)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 6, pp. 1581-1586 (USSR)

ABSTRACT: The author and his collaborator found earlier that in the reaction of titanium salts ( $Ti^{4+}$ ) in water with diantipyryl-o-oxyphenylmethane (formula I) an orange color develops under the formation of a precipitation of unknown composition (Ref 1). It was found that not only compound (I) but also some other products of the conversion of the salicylic aldehyde with pyrazolone derivatives react easily with titanium ions and that on these occasions well crystallized compounds are obtained. Below results of the conversion of the titanium ions with bis-pyrazolone derivatives of salicylic aldehyde are given: 1) Reaction of the ions  $Ti^{4+}$  with dipyrazolonyl-o-oxyphenylmethane and its derivatives, viz. on the other hand the reaction in the presence of com-

Card 1/3

SOV/79-28-6-33/63

The Reaction of the Salts of Tetravalent Titanium Dissolved in Water  
With Pyrazolone Derivatives

pounds of weakly basic character, and on the other hand the reaction in the presence of salts. 2) The reaction of the ions  $Ti^{4+}$  with diantipyryl-o-oxyphenylmethane and its derivatives. The experiments showed that the dipyrazolonyl-o-oxyphenylmethane and its derivatives yield two series of compounds with titanium:  $2 Dip Ti=O$  and  $2 D Ti X_2$ , where  $X=Cl, J, NO_3$ , other radicals, and D=aldehyde. 40 compounds of this type were synthesized and some bis-pyrazolone derivatives were described which hitherto had been unknown. The properties of these compounds, and especially the resistance to alkali liquors prove the intracomplex binding of the titanium atoms with the molecules of the bis-pyrazolone compounds. The table shows the results of the reaction of the bis-pyrazolone derivatives with  $Ti^{4+}$  (color, crystal structure in the microscope, thermal composition) (see also the two figures). There are 2 figures, 1 table, and 4 references, 3 of which are Soviet.

Card 2/3

The Reaction of the Salts of Tetravalent Titanium Dissolved in Water  
With Pyrazolone Derivatives

SOV/79-28-6-33/63

ASSOCIATION: Gorno-Altayskiy pedagogicheskiy institut  
(Gorno-Altaysk Pedagogical Institute)

SUBMITTED: April 30, 1957

1. Titanium compounds--Chemical reactions

Card 3/3

BEYLES, R.G.; SAFINA, R.A.; BEYLES, E.M.

Pyridine derivatives of peroxymolybdic and peroxytungstic  
acids. Zhur. neorg. khim. 6 no.7:1612-1615 J1 '61.  
(MIRA 14:7)

1. Kemerovskiy gornyy institut i Kemerovskiy meditsinskiy  
institut.

(Peroxymolybdic acid) (Peroxytungstic acid)  
(Pyridine)

D

BEYLES, R. G.; BEYLES, E. M.

Reaction of aromatic aldehydes with derivatives of pyrazolone.  
Synthesis of 4-salicylidene-1-phenyl-3-methyl-5-pyrazolone  
and its reaction with titanium salt solutions. Zhur. ob. Khim.  
33 no.1:190-192 '63. (MIRA 16:1)

1. Kemerovskiy gornyy institut.

(Aldehydes) (Pyrazolinone) (Titanium salts)

BEYLES, R.G., BEYLES, E.M.

Peroxomolybdenic derivatives of organic bases. Zhur. neorg.  
khim. 10 no.7:1618-1623 J1 '65. (MIRA 18:6)

1. Kemerovskiy gornyy Institut.

BEYLIKES, YA.M.

INtroduction of engineer Kovalev's kethod in a boiler room  
Elek. sta. 23, no. 4, (1952). Inzh.





BEYLKHEES, Ya. M.

USSR/Chemistry - Synthetic ammonia

FD-518

Card 1/1 : Pub. 50-17/23

Authors : ~~Beylikhes, Ya. M.~~, Chief of Labor Standards Investigation Group, and  
~~Boguslavskiy, V. N.~~, Shop Foreman

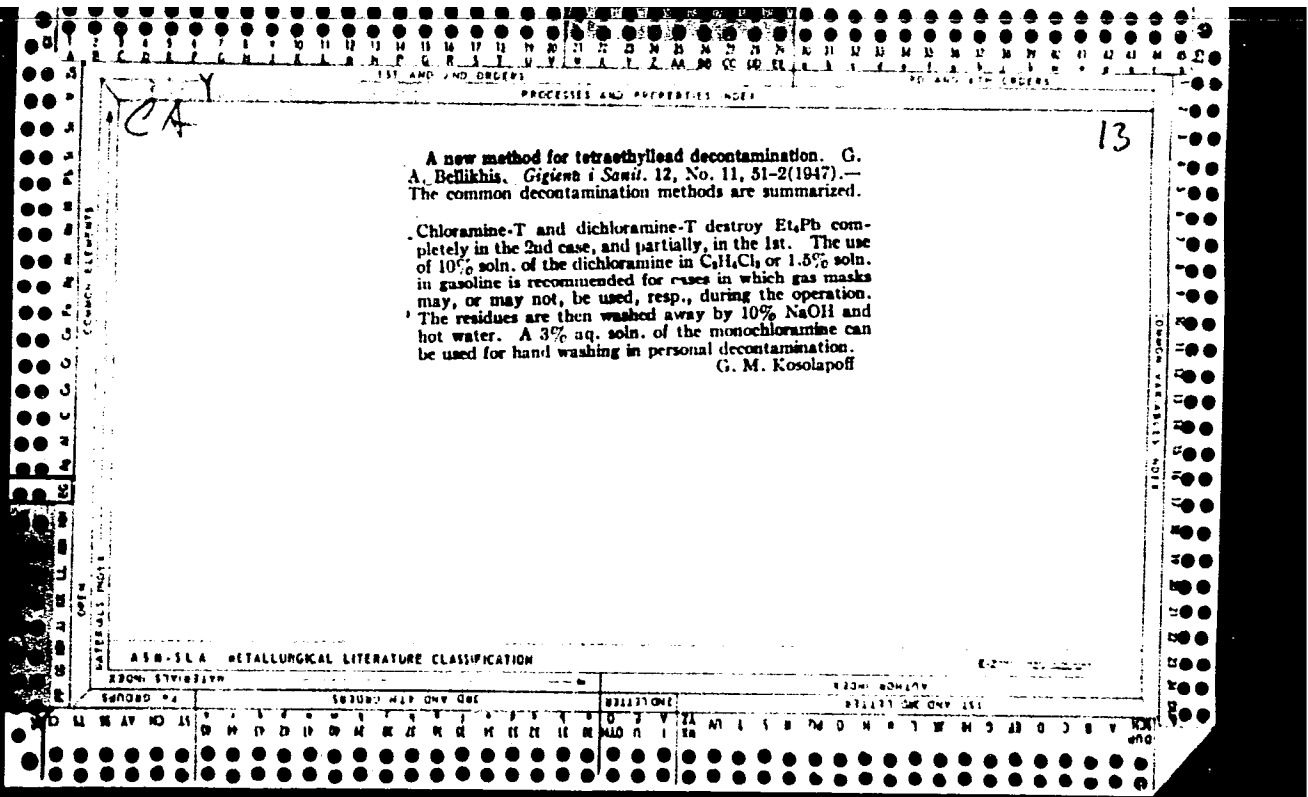
Title : Those who follow A. I. Maslova's example

Periodical : Khim. prom., 304-305 (48-49), Jul/Aug 1954

Abstract : Discuss improvements achieved by individuals who are active in the synthetic ammonia industry and are concerned with the production of ammonium nitrate.

Institution :

Submitted :



Jul 69

USSR/Medicine - Lead Poisoning  
Medicine - Industry and Occupations

62/49763

Review of R. N. Vol'fovskaya's 'Prophylaxis and Therapy for Poisoning by Tetraethyl Lead and Its Compounds,' and 'Measures for Combating Danger From Tetraethyl Lead and Its Compounds - Liquid Ethyl and Ethylated (Lead) Gasolines and Kerosene,' G. A. Beylikhis, 1 1/2 pp

"Gig i San" No 7

Author of two works reviewed is guilty of many inaccuracies, such as the statement, "In an organic tetraethyl lead is hydrolyzed." In her second article for the use of chemists and engineers, among other inaccuracies, she speaks as if liquid ethyl and ethylated gasoline could be treated in the same manner. The list of supply bases is not accurate and may give rise to misunderstandings as to proper places to acquire gasoline.

62/49763

BEYLIKHIS, G. A.

BEYLKHS, G. A. and ROZOVA, N. D. Atmospheric pollution in works with chlorine and mercury vapour, and its hygiene assessment *Gigiena, Moscow 1949, 8 (18-21)*  
The authors investigated the atmosphere in a works in which alkali was made electrolytically from sodium and potassium chloride. A cathode of metallic mercury was used and both mercury and chlorine escaped in vapour form. The concentration of these was found to be higher in the offices, canteens and adjacent rooms than in the working places. It was concluded that this higher concentration derived from contaminated clothing and footwear brought in by the operatives.

In an experiment metallic mercury was heated in a flask to 100° C. and a current of cold air was passed over it. This air took up a quantity of mercury vapour which could be partly absorbed by glycerine but much more effectively though not completely, by Plojjaeff's reagent. Though many of the employees had worked in this plant for years none showed any sign of poisoning. When air from the workrooms was passed through filters and these were extracted both mercuric and mercurous chloride were identified, but neither had apparently caused poisoning. It was concluded that a variety of chemical substances was formed. Improved conditions were possible if the factory walls could be covered with material which would absorb none of the particulate or gaseous bodies arising in the course of manufacture. Improved methods of washing the workers' clothes were also advised together with regular medical examination to detect any early signs of disease.

Pether - (Word Medical Abstracts)

So: *Medical Microbiology and Hygiene, Section IV, Vol 3, No 1-6*

CA Y

13

Air pollution of industrial establishments by chlorine and mercury vapors and its sanitary evaluation. G. A. Beikhis and N. D. Rozova. *Gigiena i Sanit* 1940, No 8, 18-21. Air pollution in such sites as electrolytic cells for NaCl is largely caused by HgCl<sub>2</sub>, rather than by individual Hg and Cl, as shown by low actual concn. of Hg. The consequences of this fact should be investigated further. Protective measures suggested are: wall construction from materials have low adsorption (e.g. oil paints should be avoided), washing facilities, and health inspection. Finally, an adequate analytical method for Hg, Cl, and HgCl<sub>2</sub> must be developed for aerosols.

G. M. Kosolapoff

1. BEYLIKHS, G. A.
2. USSR (600)
4. Industrial Hygiene
7. Problems of hygiene and protection of labor in Russian Marxist literature. 1895-1911. Gig. i san. 17 no. 9, 1952.

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

BEYLIKHS, G.A.

Mass occupational poisonings in 1914 and the struggle of Russian workers for sanitary laws. Gig.i san.no.4:36-40 Ap '54. (MLRA 7:4)

1. Iz Kirovskoy rayonnoy sanitarno-epidemiologicheskoy stantsii Moskvyy.  
(Industrial hygiene)



BEYLIKHS, G.A.

BEYLIKHS, G.A.

Possibility of mercury contamination in printing plants. Gig. 1  
san. no.6:48 Jo '54. (MLRA 7:6)

1. Iz sanitarno-epidemiologicheskoy stantsii Kirovskogo rayona  
Moskvy.

(MERCURY,

\*contamination of quarters from polygraphs)

BEYLKHS, G.A., kandidat meditsinskikh nauk

Hygiene and protection of labor in Bolshevik literature, 1912-17.  
Sov. zdrav. 13 no.5:45-50 S-O '54. (MLRA 7:12)

(INDUSTRIAL HYGIENE, history,  
in Russia)

Subject : USSR/Medicine AID P - 2173  
Card 1/1 Pub. 37 - 15/22  
Author : Beylikhis, G. A., Kand. of Med. Sci.  
Title : Introducing the teaching of the fundamentals of industrial hygiene in the curriculum of high schools and of specialized educational institutions of advanced studies  
Periodical : Gig. i san., 4, 52, Ap 1955  
Abstract : Discusses the necessity of the popularization of sanitary and hygienic knowledge and suggests that the All-Union Hygienic Society should have the leading role in this undertaking.  
Institution : Medical and Epidemiological Station, Kirov District, Moscow  
Submitted : D 10, 1954

Beylikhis, G.A.

AID P - 3903

Subject : USSR/Medicine  
Card 1/1 Pub. 37 - 7/21  
Author : Beylikhis, G. A., Kand. Med. Sci.  
Title : Struggle for workers' health protection in 1905  
Periodical : Gig. i. san., 12, 27-32, D 1955  
Abstract : Historical sketch based on the Bolshevik press  
around 1905 and on later Soviet publications.  
Refs. in footnotes.  
Institution : Medical and Epidemiological Station, Kirov District,  
Moscow.  
Submitted : Ag 24, 1955

BEYLIKHS, G.A., kandidat meditsinskikh nauk; ROZOVA, N.D., khimik

Some questions from the work practice of industrial sanitary  
laboratories in sanitary and epidemiologic stations. Gig. i san.,  
21 no.7:38-41 J1 '56. (MIRA 9:9)

1. Iz sanitarno-epidemiologicheskoy stantsii Kirovskogo rayona  
Moskvy.

(AIR POLLUTION  
in indust., laboratory control)

*BEYLKHS, G.A.*

BEYLKHS, G.A., kand.med.nauk (Moskva)

Problems of health protection in the revolutionary struggle of the  
Russian proletariat in 1917. Zdrav.Ros.Feder. 1 no.9:28-32 S '57.  
(MIRA 10:11)

(INDUSTRIAL HYGIENE--HISTORY)

BEYLIKHS, G.A. kandidat meditsinskikh nauk

Participation of leading Russian physicians in the protection of  
workers' health in 1917 (Moscow). Sov.sdrav. 16 no.3:49-53 Mr '57.  
(INDUSTRIAL HYGIENE, hist. (MLRA 10:6)  
med. care of workers in 1917 in Russia)

BEYLIKHS, G.A.

"Brief outline history of safety engineering in Russia" by  
F.N.Zagorskii. Reviewed by G.A.Beilikhis. Gig.truda i prof.zab.  
1 no.1:60 Ja-F '57. (MIRA 10:6)  
(SAFETY ENGINEERING--HISTORY)  
(ZAGORSKII, F.N.)



*BEYLIKHIS, G.P.*

BEYLIKHIS, G.A., kand.med.nauk (Moskva)

From the history of the struggle for the protection of the health  
of workers in 1917. Gig. i san. 22 no.11:43-48 N '57. (MIRA 11:1)  
(INDUSTRIAL HYGIENE, hist.  
in Russia (Rus))

BEILIKHIS, G.A. (Moskva)

Problems in health protection of workers during the first years of  
Soviet regime. Gig.truda i prof.zab. 1 no.5:15-20 S-O '57.  
(INDUSTRIAL HYGIENE) (MIRA 10:11)

BHYLIKHS, G.A.

[History of the struggle for labor hygiene in Czarist Russia; problems of hygiene and labor safety in the pre-Revolutionary . Bolshevik press] Iz istorii bor'by za sanitarnuiu okhranu truda v tsarskoi Rossii; voprosy gigeny i okhrany truda v dorevoliutsionnoi bol'shevistskoi pechati. Moskva, Medgiz, 1957. 192 p.  
(INDUSTRIAL HYGIENE) (MIRA 11:4)

MEYLIKHS, G.A. (Moskva)

Dissertations on the industrial hygiene by physicians in pre-  
revolutionary Russia. Gig. truda i prof. zab. 2 no.6:48-51

N-D '58

(MIRA 11:12)

(INDUSTRIAL HYGIENE)

BEYLIKHS, G.A., kand.med.nauk (Moskva)

Moscow Society of Factory Physicians; 1903-1913. Sov.zdrav. 17 no.9  
57-61 8'58 (MIRA 11:8)

(INDUSTRIAL MEDICINE, hist.  
in Russia (RUs))

BEYLIEHIS, G.A., kand.med.nauk (Moskva)

Reply to comments on the article "Unsolved questions in the work  
practice of industrial sanitary laboratories in sanitary and  
epidemiological stations." Giv. i san 23 no.8:49-50 Ag '58  
(AIR--ANALYSIS) (MIRA 11:9)

BEYLIEHIS, G.A., kand.med.nauk (Moskva)

Causes of agricultural accidents in tsarist Russia. Gig. i san.  
23 no.9:63 S'58 (MIRA 11:11)  
(AGRICULTURE--ACCIDENTS)

BEYLINHS, G.A., kand.med.nauk; LAPISOVA, N.P., kand.khim.nauk; PARSHINA, A.M.,  
inzh.-khimik (Moskva)

Sewage contaminated by tetraethyl lead [with summary in English].  
Gig. i san. 24 no.2:27-31 F '59. (MIRA 12:3)

(WATER POLLUTION

indust. waste water contamination by tetraethyl lead,  
removal method (Rus))

(LEAD

tetraethyl lead contamination of indust. waste water,  
removal method (Rus))



BEYLIKHS, G.A., kand.med.nauk (Moskva)

History of the prevention of occupational diseases and trauma of the  
eyes in prerevolutionary Russia. Vest,oft. 72 no.5:57-58 S-0 '59.  
(MIRA 13:3)

(OCCUPATIONAL DISEASES, prev. & control)  
(**EYE**, wds. & inj.)

BEYLIKHS, G.A., kand.med.nauk (Moskva)

Fiftieth anniversary of the First All-Russian Congress of Industrial  
Physicians. Sov. zdrav. 19 no.9:70-75 '60. (MIRA 13:11)  
(MEDICINE, INDUSTRIAL)

BEYLIKHIS, G.A., kand.med. nauk (Moskva)

Problems of health protection in the labor movement in Russia in  
1870-1899. Gig. i san. 25 no. 5:48-53 My '60. (MIRA 13:10)  
(INDUSTRIAL MEDICINE)

BEYLIKHS, G.A., kand.med.nauk (Moskva)

The 50th anniversary of the 2nd All-Russian Congress of Factory  
Physicians (1911-1961). Gig. i san. 26 no.5:37-41 My '61.  
(MIRA 15:4)

(INDUSTRIAL HYGIENE--CONGRESSES)

BEYLIKHS, G.A., kand. med. nauk

V. IA. Kanel', an active participator in the struggle for  
health protection of workers in Tsarist Russia. Gig. i san.  
28 no.6&44-48 Ja'63 (MIRA17&4)

1. Iz Moskovskogo nauchno-issledovatel'skogo instituta gigi-  
yeny imeni F.F. Erismana.

BEYLIKHS, G.A.; kand.med.nauk (Moskva)

Problems of social medicine in the works of V.IA.Kanel'  
(1873-1918). Sov.zdrav. 22 no.4:72-75 '63. (MIRA 16:4)

1. Nauchno-issledovatel'skiy institut gigiyeny imeni F.F.  
Erismana.

(KANEL', VENIAMIN IAKOVLEVICH, 1873-1918)  
(SOCIAL MEDICINE)

BEYLIKHS, G.A. (Moskva)

Role of the physicians of the Moscow Government Zemstvo in organizing native industrial hygiene and industrial sanitation. Gig. truda i prof. zab. 7 no.1:44-48 Ja'63 (MIRA 16:12)

1. Institut gigiyeny imeni F.F. Erismana, Moskva.

BEYLIN, A.

SHARKO, Ye.; BEYLIN, A.

Heating the motor of the 20Ch-18/26 electric station before starting  
and its cooling during operation. Muk.-elev.prom.21 no.9:29 S '55.  
(MIRA 8:12)

1. Molodechnenskaya oblastnaya kontora Zagotzerno  
(Electric motors)



AFRAYMOVICH, M.A.; BEYLIN, A.L.

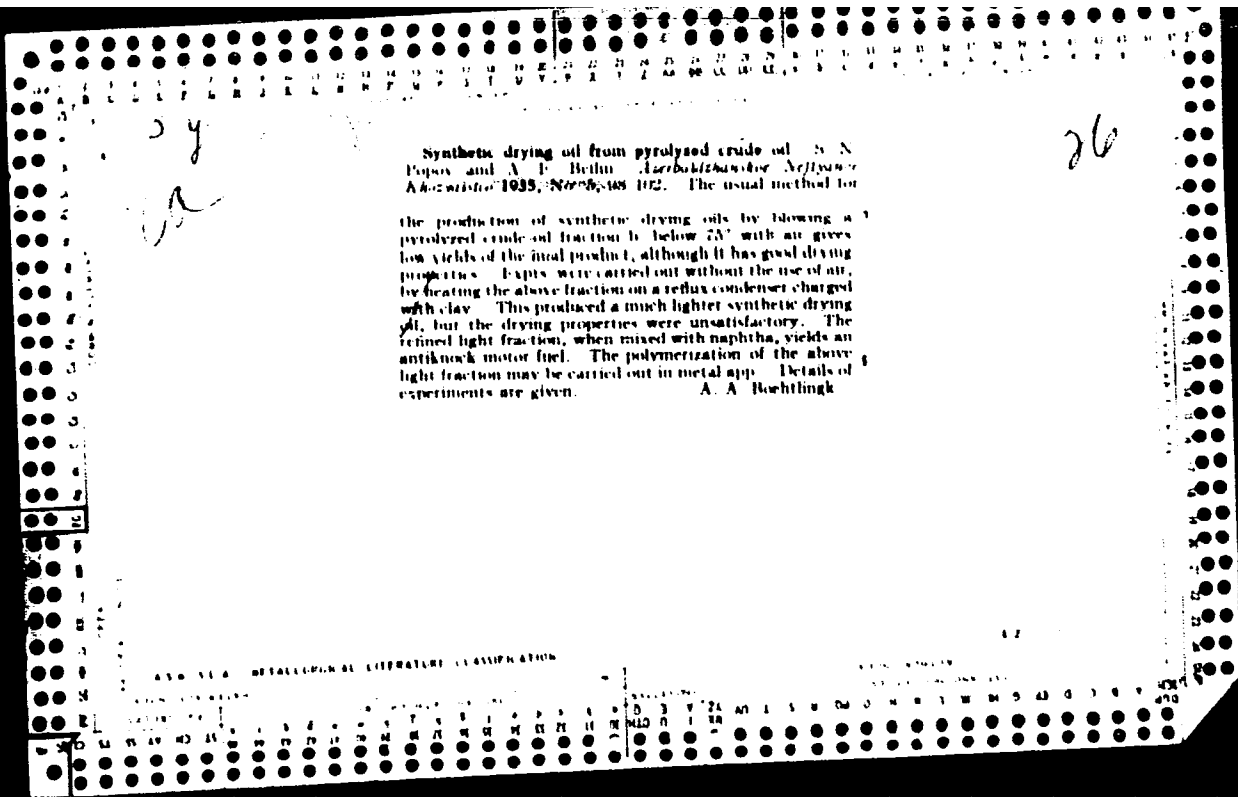
Use of clamps on the parametrium in atonic hemorrhages in early puerperium. Akush. i g.n. 40 no.2:46-48 Mr-Apr '64. (MIRA 17:11)

1. Rodil'nyy dom No.15 (glavnyy vrach M.A. Afraymovich) - klinicheskaya baza kafedry akusherstva i ginekologii (zav. - prof. K.N. Zhmakin) I Moskovskogo ordena Lenina meditsinskogo instituta imeni Sechenova.

BEYMAN, A.M., inzh.; MIKHAILUK, I.G., inzh.; RIPPAN, D.M., inzh.

~~SECRET~~

Plastic pinions. Mashinstroenie no.2:10-12 Mr-An '65.  
(MIRA 18:6)



BEYLIN

**Synthesis of styrene from the xylene fraction of petroleum pyrolysis.** B. N. Popov and A. B. Bellin. *Dok. Chem. Ind. (U. S. S. R.)* 4, 132-7 (1937). Styrene (I) is obtained by chlorinating PhEt, saponifying the PhCHClMe (II) and dehydrating the PhCH(OH)Me (III). The crude xylene fraction of petroleum pyrolysis is treated with H<sub>2</sub>SO<sub>4</sub> and then neutralized and steam-distilled. The product, b. 117-62°, contg., besides isomeric xylenes, PhEt and paraffin, naphthene and olefin hydrocarbons, when redistilled, gave 38.5% of a fraction, b. 133-9°, contg. chiefly PhEt. This was further purified by treatment with 6% of 97% H<sub>2</sub>SO<sub>4</sub>, steam distn. and fractionation, giving a mixt., b. 135-7°, contg. 79% of aromatic compds. It was treated with Cl<sub>2</sub> at 100-10° to a definite increment in wt. (2 hrs.) and then distd. *in vacuo*. The fraction (32%), b. 80-93°, contg. chiefly II, was refluxed with 25% excess of 10% NaClO<sub>2</sub> for 3 hrs. The nearly pure III, d<sub>4</sub><sup>20</sup> 1.011 (theory 1.013) (119.7 g. from 150 g.), after washing and drying with anhyd. Na<sub>2</sub>SO<sub>4</sub>, was distd. with ignited KHSO<sub>4</sub>, affording 20.4 g. (9.8% based on II) I, d<sub>4</sub><sup>20</sup> 0.901. In the process of fractional distn. (b. 140-204°) I is strongly polymerized. The fraction, b. 140-204°, on standing at room temp. for 12 days was polymerized into a jelly-like mass. The max. yield of styrene fraction, contg. 85-9% I, was 8% of the purified xylene fraction.

Chas. Blanc

ASB-55A METALLURGICAL LITERATURE CLASSIFICATION

GROUP	CLASS	SECTION	SUBSECTION	DETAILS
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9
10	10	10	10	10
11	11	11	11	11
12	12	12	12	12
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S/137/62/000/005/044/150  
A006/A101

AUTHORS: Sinel'nikova, A. I., Beylin, A. Yu.

TITLE: Gold and silver deposition from cyanide pulps with anionites

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 5, 1962, 28, abstract 50180  
("Sb. nauchn. tr. In-t tsevt. met. im. M. I. Kalinina", 1960, v. 33,  
98 - 106)

TEXT: The authors studied the process of sorption lixiviation applied to resistant ore containing (in %):  $\text{SiO}_2$  82.61,  $\text{Al}_2\text{O}_3$  8.38,  $\text{Fe}_2\text{O}_3$  2.4, As 0.17, Zn 0.08, Sb 0.01, Sn 0.02, Cu 0.07 and S 0.087. Anionite AH<sup>-</sup>-18 (AN-18) served as an adsorbent (-0.9+0.4 mm size). The experiments were made with 200 g ore batches at L : S = 2 : 1; concentration of the solution was 0.085% NaCN and 0.01% CaO. It was established that the rate of Au and Ag dissolving during sorption lixiviation increased by more than 3 times; Au extraction within 8 hours lixiviation was 96.8%. An amount of 0.8 g/ton Au remained in the tails (against 1.1 g/ton in conventional lixiviation). The capacity of anionite AN-18 in respect to Au can be raised from 3 - 3.5 to 7% by the method of selective desorption

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Gold and silver deposition from...

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A006/A101

of cyanide complexes of heavy metals with weak acid solutions. Au and Ag desorption with a thiocarbamide solution in a mixture with HCl was studied and the optimum composition was established;  $\text{CS}(\text{NH}_2)_2$  8.5 - 9% and HCl 2%. A method was developed of carburizing Au and Ag from hydrochloric acid solutions of thiocarbamide with Pb metal. The process depends mainly upon the magnitude of the Pb surface. Pb consumption, at a dust size 80% of fraction - 0.043 mm, is 6.2 g per 1 g Au and 12.5 g per 1 g Ag.

G. Svodtseva

[Abstracter's note: Complete translation]

Card 2/2

ACC NR: AP7002975 (A,N) SOURCE CODE: UR/0413/66/000/024/0072/0072

INVENTOR: Beylin, A. Yu.; Nikitin, Yu. N.; Lamshina, V. A.

ORG: None

TITLE: A method for sintering cermet products. Class 40, No. 189583

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 24, 1966, 72

TOPIC TAGS: cermet product, sintering, hydrocarbon, gasoline

ABSTRACT: This Author's Certificate introduces a method for sintering cermet products (e. g. thermoelectric half cells) under pressure in a liquid medium. The mechanical properties of the products are improved and the productivity of the method is increased by sintering the pressed products in hermetically sealed vessels filled with a liquid hydrocarbon, e. g. gasoline.

SUB CODE: 11, 13/ SUBM DATE: 02Jul63

Card 1/1

UDC: 621.762 52

PLAKSIN, I.N.; SINEL'NIKOVA, A.I.; BEYLIN, A.Yu.

Use of anion exchangers for the regeneration of cyanide from complex salts. Dokl.AN SSSR 138 no.6:1399-1401 Je '61. (MIRA 14:6)

1. Chlen-korrespondent AN SSSR (for Plaksin).  
(Cyanide process) (Ion exchange resins)



PLAKSIN, I.N.; BEYLIN, A.Yu.

Theory of the sorption of complex cyanide anions on certain anion exchangers. Dokl. AN SSSR 145 no.3:621-623 J1 '62. (MIRA 15:7)

1. Chlen-korrespondent AN SSSR (for Plaksin).  
(Cyanides) (Ion exchange)

BEYLIN, B. S.

32773. K patogenezu i lecheniya fleksornykh kontraktur nishnikh konechnostey pri ognestrel'nykh porazheniyakh sedalishchnogo nerva. Sbornik nauch. Trudov (kirgiz. Gos. Med. In-t), T. IV, 1949, s. 90-93

SO: Letopis' Zhurnal'nykh Statey, Vol. 44, Moskva, 1949

IMERICAN, A.G., kand. tekhn. nauk; MELIN, D.A., inzh.; MOSKVIN, V.S., inzh.

Testing aluminum alloy girders spanning 36 m. Prom. stroi. 42 no.9:  
38-71 S '64. (MIRA 17:10)

ACC NO: AT6022513

SOURCE CODE: UR/2787/65/000/010/0101/0116

AUTHOR: Immerman, A. G. (Candidate of technical sciences); Beilin, D. A. (Engineer)

ORG: None

TITLE: Studying lap welded joints of elements made from heat-hardened aluminum alloys in the Al-Mg-Si system

SOURCE: Moscow. Gosudarstvennyy institut po proyektirovaniyu, issledovaniyu i ispytaniyu stal'nykh konstruksiy i mostov. Materialy po metallicheskim konstruksiyam, no. 10, 1965, 101-116

TOPIC TAGS: metal forming, fatigue strength, tensile strength, stress concentration, heat effect

ABSTRACT: This article is a further study of the strength of elements made from heat-hardened alloys with lapped joints. The welded joint models for this study were sheet, tube and angle iron made from AV-T, AV-T1 and AD35-T1 heat-hardened alloys. Flat standard specimens made from sheet and angle iron and also pipe sections with short steel plates tightly fitted into the ends were tested in order to determine physical strength characteristics. These specimens are designed so that failure should occur in the base metal. All welding was done on the PShP-10 semiautomatic machine. The specimens were aged for 20 days at 20°C and tested for static axial

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ACC NR: AT6022513

stretching on the <sup>14</sup> CMS-100 universal machine. Loading was done in stages and each stage was maintained for a minimum of 5-8 minutes. The loading stages represent approximately 10% of the estimated fatigue strength for the given specimen. The results show that the tensile strength of elements with an average thickness of 5-8 mm decreases 25% on the average as a result of the heat effect of welding and stress concentration when compared to the strength of unannealed alloy elements. Thin-walled elements (less than 5 mm) show a 50% strength loss. The results of this study may be used to determine the theoretical width of the heat-affected zone in fastened members during lapped joining, where this zone is measured from the edges of the welded elements. Graphs are given for determining the dimensions of the heat-affected zone in this case. For functional elements with special shapes such as I-beams, channel iron and others, the width of the heat-affected zone can be determined by a method which combines data for flat and right angle sections. A method is also given for calculating elements which are attached at right angle seams. Of the two methods used for determining the load capacity of elements with complex shapes, the method which considers the heat-affected zone yields more accurate results. Orig. art. has: 8 figures, 4 tables, 6 formulas.

SUB CODE: 13/ SUBM DATE: none/ ORIG REF: 008/ OTH REF: 001

Card 2/2

ARYKIN, I., kand.tekhn.nauk; BEYLIN, I., inzh.

Screw anchors and their mechanized burial into the ground.  
Rech.transp. 23 no.9:43-45 S '64. (MIRA 19:1)

1.TSentral'nyy nauchno-issledovatel'skiy institut lesosplava  
(for Beylin).

PA 21/49T75

NEXT IN PROG. I. B.

USSR/Medicine - Tuberculosis, Diagnosis      Sep/Oct 48  
Medicine - Roentgen Rays, Fluoroscopy

"Early Diagnosis of Tuberculosis by Fluoroscopic  
Methods," Prof I. B. Beylin, 1½ pp

"Problemy Tuberkuleza" No 5

Gives concise account of conference of the Society  
of Phthisiologists in Moscow, 29-30 Jan 48.

IC

21/49T75

BEYLIN, I. B.  
25884

Oshibki viagnostike legochnogo tuberkuleza i ikh istochniki sbornik nauch  
rabot lecheb. Uchrezhdeniy mosk. Voen. Okr Gor'Kiy, 1948, S 169-90

SO: LETOPIS NO. 30, 1948



BEYIN, I. B.

33419. Nikolay Aleksandrovich Semashko. 1874-1949. Problemy Tuberkuleza, 1949, NO. 5, c. 10-13, S Portr.

50. Letopis' Zhurnal'nykh Statey, Vol. 45, Moskva, 1949

BEYLIN, I.B.

Treatment of tuberculosis with streptomycin in dispensaries; ambulatory and at home. Probl. tuberk., Moskva no.2:70-73 Mar-Apr 1953.

(GLML 24:3)

1. Professor. 2. Moscow.

BEYLIN, I. B.

"Antibiotics in Radiation Sickness," Antibiotiki, 8, No.6, pp. 39-50, 1955

Translation M-1310, 16 Nov 56

BEYLIN, I. B.

ECHINOCOCCUS

"On the Clinico-Roentgenologic Picture of an Early Pulmonary Echinococcus and the Differential Diagnosis of Echinococcus and Pulmonary Tuberculosis", by Professor I. B. Beylin and B. N. Velednitskiy, Klinicheskaya Meditsina, No 4, April 1957, pp 119-121.

Since there are no descriptions of the roentgenoclinical picture of the earliest stages of the development of an echinococccoid cyst in human lungs, the authors present a study of a case of pulmonary echinococciasis, which was observed for some two years. The progress of the disease is described in detail and there are four reproductions of X-ray photographs.

Card 1/1

- 34 -

BEYLIN, I.B., podpolkovnik meditsinskoy sluzhby, prof.; KREYNIN, L.S.,  
podpolkovnik meditsinskoy sluzhby, kand.med.nauk

Influence of streptomycin and BCG vaccination on the course of  
tuberculosis in guinea pigs with radiation sickness. Voen.-med.  
zhur. no.8: 31-35 Ag'58. (MIRA 16:7)

(STREPTOMYCIN) (BCG VACCINATION)  
(TUBERCULOSIS IN ANIMALS) (RADIATION SICKNESS)

BEYLIN, I.B., prof. (Moskva)

Cycloserine in experimental and clinical use in pulmonary tuberculosis. *Klin.med.* 36 no.12:21-26 D '58. (MIRA 12:6)

(TUBERCULOSIS, PULMONARY, ther.

cycloserine (Rus))

(ANTIBIOTICS, ther. use

cycloserine in pulm. tuberc. (Rus))

BEYLIN, I.B., prof., polkovnik med.sluzhby

Military research of therapeutic and prophylactic institutions of  
the Soviet Army. Voen.-med.zhur. no.10:49-52 O '59. (MIRA 13:3)  
(MILITARY MEDICINE)

BEYLIN, I.B., polkovnik meditsinskoy sluzhby, prof.

Chemoprophylaxis and chemotherapy of tuberculosis under army  
conditions. Voen.-med.zhur. no.3:32-36 Mr '61. (MIRA 14:7)  
(TUBERCULOSIS) (MEDICINE, MILITARY)



BEYLIN, I.B., polkovnik meditsinskoy sluzhby, prof.

Conferences devoted to infectious hepatitis. Voen.-med. zhur. no.8:  
94-95 Ag '61. (MIRA 15:2)

(HEPATITIS, INFECTIOUS)

BEYLIN, I.B., prof., polkovnik meditsinskoy sluzhby

Sarcoidosis. Voen.-med.zhur. no.1:40-46 '65.

(MIRA 18:10)

BEYLIN, I.G.

Trends in mycological research and agricultural mycology. Izv. AN  
SSSR Ser. biol. no.3:461-471 My-Je '61. (MIRA 14:5)  
(MYCOLOGICAL RESEARCH)

96. BEYLIN, I. G.

"Recent Wheat Rust Epidemics in North Caucassus and Factors Favoring Their  
Outbreak and Development." Izvestia Akademii Nauk SSSR, Seria Biologicheskaja,  
no. 5-6, 1938, pp. 995-1016. 511 S<sup>2</sup>B

So: SIRA S1-90-53, 15 Dec. 1953