PETROV, Khr.

The temperature effect of ultrasound oscillations at the dissolution of steel in phosphoric acid. Godishnik mash elekt 10 no.1:163-168 '61 (publ. '62).

DZHOGLEV, D.; PETROV, Khr.

Optimum conditions for the chemical silvering of stereoflex plate without using the side sensitizers. Godishnik mash. elekt. 7 no.1:151-1[illegible] '60. (publ. '61)

BULGARIA/Pharmacology - Toxicology - Hormone Preparations.

Abs Jour : Ref Zhur Biol., No 4, 1959, 18716

Author : Petrov, Khr.
Inst : -
Title : Parasitocytic Action of Cortisone on Trichomonas Foetus.

Orig Pub : Priroda i znaniye (Bolg.), 1958, 11, No 3, 22

Abstract : No abstract.

Card 1/1

CA

Benzothiazyl disulfide [illegible] A. Zeik and K. D. Petrov. Russ. 39,109, Oct. 31, 1934. Mercaptobenzothiazole is dissolved in alkali hydroxide or carbonate, and treated with gaseous Cl at a temp. below 0°. On addition of acid to the soln. benzothiazyl disulfide sepa-

Vulcanization accelerator. K. D. Petrov. Russ. 40, 494, Dec. 31, 1934. Benzothiazyl monosulfide is used as an accelerator.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

LIT. AND ZIND. REFERS

PROCESSES AND PROPERTIES INDEX

BC

13

[redacted] Patent U. Appl. [redacted] of thio- [redacted] solution of $Zn(OAc)_2$ [redacted] part of S in [redacted] of disulphide [redacted] rubber vul- [redacted] Probably, H_2S forms (X) and active S, causing vulcanization. J. J. B.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

USSR/Chemistry - Silicobutyric Anhydride Feb 1947
Chemistry - Butyric anhydride

"The Preparation of Silicobutyric Anhydride and Its Properties," K. D. Petrov, M. I. Itkina, 4 pp

"Zhur Obshch Khim" Vol XVII, No 2

Description of the synthesis of the anhydride and its properties.

15T35

CA

Preparation of silicon tetrabutyrate and its properties

II K. D. Petrov and M. I. Itkina (Frunze Plastic Research Inst., Moscow). *J. Gen. Chem.* (U.S.S.R.) 17, 229-3(1947)(in Russian). cf. Petrov, Moshkin, and Losev, *J. Chem. Ind.* (U.S.S.R.) 6, 22(1945). $PrCO_2H$ (110 g.) and 42.5 g. $SiCl_4$ were mixed with cooling in a flask equipped with a reflux condenser, until the initial reaction subsided, the mass was then heated on a water bath until HCl evolution ceased and the liquid portion was removed by distn. at 10-12 mm. on the steam bath. The residual white amorphous mass (78.6%) is silicon butyric anhydride ($(PrCO_2)_4Si$) (I), which is sol. in $PrCO_2H$, $CHCl_3$, CCl_4, Et_2O, MePh, xylene. Stronger heating results in its cleavage into SiO_2 and butyric anhydride, b. 192.4°, d^{4} 0.9720, n_D^{20} 1.4148. It is a reactive substance which can be used for acylations. Powd. I (30 g.) and 20 g. PhOH were heated 3 hrs. under a reflux condenser, the product treated with aq. Na_2CO_3 and Et_2O and the org. ext. washed with water and dried to give, on distn., 70% Ph butyrate, b. 227-9°, d^{20} 1.022, n_D^{20} 1.4900. I (75.2 g.), 250 cc. benzene, and 100 g. $AlCl_3$ heated 3 hrs. with stirring on a sand bath, then poured into ice water, treated with HCl, and extd. with Et_2O gave 10 g. $PrCO_2H$, 32 g. $(PrCO)_2O$, and 7 g. crude PrCOPh, b. 250-35°, which on redistn. gave 3 g., b. 233-4°, d^{20} 1.0100, n_D^{20} 1.5020. Crude I was prepd. by mixing 88 g. $PrCO_2H$ and 42.5 g. $SiCl_4$ in 200 cc. PhMe, the product was stirred at 60°, then at 100° until HCl evolution ceased, cooled, and gradually treated with 150 g. $AlCl_3$. A vigorous reaction took place, after which the residue was heated 3 hrs. to 70-80° to yield, after the usual isolation, 13.5 g. $(PrCO)_2O$ and 37% Pr *p*-tolyl ketone, b. 248-50°, n_D^{20} 1.5185, d^{20} 0.9802. G. M. K.

CA

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Silico anhydrides of acids and their transformation products. III. Silicoformic anhydride. K. D. Petrov (Plastics Research Inst., Moscow). *J. Gen. Chem.* (U.S.S.R.) 17, 1099-1102 (1947) (in Russian); cf. C. A. 42, 5164d. *Silicoformic anhydride*, $(SiO)_3CH_3$ (I), was prepd. in a crude state by reaction of HCO_2H with $SiCl_4$, but the contamination with SiO_2 did not interfere with its use as an intermediate for the prepn. of formates and aldehydes (in poor yield). HCO_2H (92 g.) and 85 g. $SiCl_4$ were allowed to react in 150 cc. benzene at 60° until HCl evolution ceased; after 1 hr. heating to 100° the solvent and excess HCO_2H were removed by distn., finally at 20 mm., to yield a residue of 80 g. crude I, white amorphous mass, contaminated with SiO_2. Si content 15.20%, which breaks down on heating into gaseous products and SiO_2. It readily reacts with moisture and is easily sol. in benzene or PhMe. I (52 g.), 47 g. PhOH, and 100 cc. C_6H_6 heated 5 hrs. to 100° gave, on distn., 98 g. crude *Ph formate*, b. 172-80°, which was freed of phenol by heating with $SiCl_4$, after which distn. gave 46 g. pure ester, b. 175-8.5°, d_4^{20} 1.1230, n_D^{20} 1.5021. Similarly 70 g. I and 54 g. *m*-cresol gave 60.3%, *m-tolyl formate*, b. 192.5-9°, d_4^{20} 1.0854, n_D^{20} 1.5080. I from 46 g. HCO_2H and 42.5 g. $SiCl_4$ in 92 g. MePh was cooled to 20° and treated with 145 g. $AlCl_3$ and 10 g. Cu_2Cl_2, heating to 40-5° 8 hrs., followed by pouring on ice and steam distn., gave 3.5 g. *p-tolualdehyde*, b. 202-4°. Raising the reaction temp. to 80° results in considerable amts. of cryst. products which are apparently derivs. of tolualdehyde and were not studied further.

G. M. Kosolapoff

USSR/Chemistry - Synthesis Jun 48
Chemistry - Ketones

"Reactions of Cycloanhydrides of Organic Acids. IV. Methods for Obtaining Aromatic and Alipho-Aromatic Ketones," K. D. Petrov, Ye. S. Lagucheva, Lab of Org Synthesis, Sci Res Inst of Plastics imeni Frunze, Moscow, 4 pp

"Zhur Obshch Khim" Vol XVIII (LXXX), No 6

Method is condensation of acid silicoanhydrides (I) with aromatic compounds (II). I acts as intermediate product which under conditions of experiment is obtained from acids and silicon tetrachloride. Prepared in solution of II enables ketones to be

9/49T24

USSR/Chemistry - Synthesis (Contd) Jun 48

obtained from acids in a single stage. Yield is 45-86%. Submitted 28 Jan 1947.

9/49T24

191T22

USSR/Chemistry - Plastics Jul 51

"Interaction of Dimethylacetylenylcarbinol With Ethylene Oxide. I," K. D. Petrov, Ye. S. Laguchevs, Sci Res Inst of Plastics

"Zhur Obshch Khim" Vol XXI, No 7, pp 1247-1254

Describes method for prepn of β-hydroxyethyl ether of dimethylacetylenylcarbinol (not described in literature) by condensation of the carbinol with ethylene oxide in presence of tert org base. From this synthesized acetoxy-, butyroxy-, benzoxy-, and adipoxyethyl ethers of the carbinol. Investigation

191T22

USSR/Chemistry - Plastics (Contd) Jul 51

showed that only 2 Br atoms are added to triple bond when either β-hydroxyethyl ether or acetoxyethyl ether interacts with Br_2.

191T22

PETROV, K. D.

PETROV, K. D.

The reaction of dimethylthiomalonamide with ethylene oxide. I. K.D. Petrov and P.S. Ignatchev. J. Gen. Chem. (U.S.S.R. 21), 1376-7(1951)(Engl. translation).

See C.A. 46, 1959e.

B.B.

Immediate release dipping

PETROV, K. D.

188T15

USSR/Chemistry - Plastics Aug 51

"Interaction of Dimethylacetylenyl Carbinol With Propylene Oxide. II," K. D. Petrov, Ye. S. Lagucheva, Sci Res Inst of Plastics imeni M. V. Frunze

"Zhur Obshch Khim" Vol XXI, No 8, pp 1460-1462

Shows dimethylacetylenyl carbinol (I) interacts with propylene oxide in presence of tertiary bases to form 3-hydroxypropyl ether of I (not described in literature). Reaction proceeds in same manner as with ethylene oxide. Describes acetoxypropyl ether of I and its properties.

OK

188T15

PETROV, K. D.

The reaction of dimethylethynylcarbinol with propylene oxide. II. K.D. Petrov and P.S. Leguchova. J. Gen. Chem. U.S.S.R. 21, 1589-91(1951)(Engl. translation). See C.A. 46, 9994. Process of isomerization and polymerization of dimethylvinylcarbinol in dependence on the pH of the reagent. A.I. Lebedev and L.L. Schukovskaya. J. Gen. Chem. U.S.S.R. 21, 1235-41(1951) (Engl. translation).

See C.A. 46, 1956c.

B.R.

immediate source clipping

PETROV, V. P.

Petrov, V. P., [illegible] "[illegible]" (p. 1[illegible])

[illegible] Chemistry, [illegible]

PETROV, K. D.

Chemical Abst.
Vol. 48 No. 8
Apr. 25, 1954
Organic Chemistry

Reaction of 1,3-bis(hydroxymethyl)urea with ethylene oxide. K. D. Petrov and O. K. Costeva. J. Gen. Chem. (U.S.S.R.) 22, 1861-2(1952)(Engl. translation).—See C.A. 47, 5357g.
H. L. H.—

(2) Chem

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

Reaction of methylbis(2-hydroxypropyl)amine and methylbis(2-hydroxyethyl)amine with benzoic acid. K. D. Petrov and N. K. Bruker. *J. Appl. Chem. U.S.S.R.* 25, 647-9 (1952)(Engl. translation).—See *C.A.* 47, 3234a.
H. L. H.

PETROV, K.D.

The order of addition of aniline to propylene oxide. K. D. Petrov. *Sbornik Statei Obshchei Khim., Akad. Nauk S.S.S.R.* 1, 374-7(1953).—Heating 172.5 g. MeCH-(OH)CH_2NH_2, 157.00 g. PhBr, 10 ml. H_2O, and 15.96 g. $CuSO_4$ 24 hrs. at 125-30° gave after treatment with aq. Na_2CO_3, 11.9% *PhNHCH$_2$CH(OH)Me* (I), b_{760} 269.5-70.5°, d_{20}^{20} 1.0587, n_D^{20} 1.5619. $PhNH_2$ (465 g.) treated at 125° with 58 g. propylene oxide added over 8 hrs., gave 70% product, b_5 122-3°, b_{760} 269.5-70.5°, d_{20}^{20} 1.0593, n_D^{20} 1.5620, identical with I. I (15.1 g.), 15.0 g. BzH, 100 ml. EtOH and 2 drops HCl shaken 3 hrs. at room temp. gave 58.6% *5-methyl-3,3-diphenylhexahydroxazolidine*, m. 88.5-9.5°, b_5 183-6°. Cf. Quarles, U.S. 2,432,586 (*C.A.* 42, 2810g).

G. M. Kosolapoff

Sci. Res. Inst Plastics im. Frunze

PETROV, K. D.

USSR

Reaction of some tertiary acetylenic alcohols and their hydroethyl ethers with acrylonitrile. III. E. S. Lavrischeva and K. D. Petrov. *Sbornik Stateĭ Obshchei Khim.* 2, 1347-51(1953); *C.A.* 46, 1960e; 47, 5357g; 49, 907g.—To 0.12 g. Na in 42 g. $Me_2C(OH)C{:}CH$ was added 20.1 g. $CH_2{:}CHCN$ and the mixt. refluxed 10 hrs. (finally at 130°) gave after filtration and distn. of the filtrate 61.3% $NCCH_2CH_2OCMe_2C{:}CH$, $b_{0.4}$ 202-3.5°, b_{10} 98-100.5°, d_4^{20} 0.9316, n_D^{20} 1.4361. This (27.4 g.) in 25 ml. dioxane was treated with 10.05 g. Et_2NH and 7.2 g. paraformaldehyde, which led to a mild reaction, after which the mass was heated 6 hrs. to 97°, freed of the solvent *in vacuo*, washed with H_2O,

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OVER

and the org. layer combined with Et_2O washings of the aq. layer, yielded 75.4% $Et_2NCH_2Cl\ CCMe_2OCH_2CH_2CN$, $b_{0.4}$ 115–16°, d_4^{20} 0.9245, n_D^{20} 1.4502. To 42.8 g. $[Me_2C(OH)Cl]_2$ and 1.704 g. MeONa in 50 ml. C_6H_6 was added in 14 hrs. at 40–5° 38.16 g. $CH_2{:}CHCN$; the product was neutralized with dil. HCl, filtered and the org. material distd. yielding 42.4% $(NCCH_2CH_2OCMe_2Cl)_2$, b_5 175–8°, m. 85.5–6.5° (from dil. EtOH). To 0.14 g. Na dissolved in 64 g. $HOCH_2CH_2OCMe_2CH$ at 30–5°, then cooled, was added 29.1 g. $CH_2{:}CHCN$ (vigorous reaction after ⅓ had been added) and the mixt. heated 3 hrs., finally at 80°, gave 65.85% $HCl\ CCMe_2OCH_2CH_2OCH_2CH_2CN$, b_{10} 144–5.5°, d_4^{20} 0.9810, n_D^{20} 1.4483. This (27.15 g.) and 12.05 g. Et_2NH heated with 6.4 g. paraformaldehyde in 20 ml. dioxane as described above gave 91.5% $Et_2NCH_2Cl\ CCMe_2OCH_2CH_2OCH_2CH_2CN$, $b_{0.4}$ 150–1°, d_4^{20} 0.9547, n_D^{20} 1.4620. Heating $[Me_2C(OH)Cl]_2$ with excess ethylene oxide in autoclave in the presence of Me_3NPh gave the *bis-2-hydroxyethyl ether*, b_{10} 141–72° (crude), which (46 g.) was treated with 26.5 g. $CH_2{:}CHCN$ in C_6H_6 in the presence of 1.2 g. MeONa yielding 73% $(NCCH_2CH_2OCH_2CH_2OCMe_2Cl)_2$, $b_{0.4}$ 182–222°, d_4^{20} 1.0345, n_D^{20} 1.4668, which still contained 1% free HO groups. Treatment of 55 g. $Me_2C(OH)C\equiv CCH{:}CH_2$ with 29.1 g. $CH_2{:}CHCN$ in the presence of 1.1 g. MeONa similarly gave 71% $CH_2{:}CHC\equiv CCMe_2OCH_2CH_2CN$, b_{10} 110–11°, d_4^{20} 0.9328, n_D^{20} 1.4710. With 40% NaOH catalyst the yield was 74.8%.

G. M. Kosolapoff

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PETROV, K. D.

CZECH

Properties and some transformations of *N*-aryl derivatives of oxazolidine. K. D. Petrov and O. K. Gosteva. *Sborník Státní Ústřední Knihy* 2, 1202-5(1953).—To 137 g. $PhNHCH_2CH_2OH$ was added gradually 32.8 g. AcH below 50°, the mixt. stirred 0.5 hr. gave 76% *2-methyl-3-phenylozazolidine*, m. 55-7° (from EtOH). This is cleaved by acids to the original components. The reaction of 30.5 g. $PhNHCH_2CH(OH)Me$ with 11 g. AcH gave 58.8% *2,5-dimethyl-3-phenylozazolidine*, b_{7-8} 108-13°, b_{16} 252-4°, d_4^{20} 1.0400, n_D^{20} 1.5466. 2,3-Diphenylozazolidine (from $PhNHCH_2CH_2OH$ and BzH) (22.5 g.) treated with 9.8 g. 36.7% formalin, 0.4 ml. HCl, 200 ml. EtOH and 200 ml. C_6H_6 20 hrs. at room temp. yielded, after neutralization, 3-phenylozazolidine, m. 26.5-8°, b_6 120-4°, and some crude BzH. Such a displacement has been named aldehydrolysis.

G. M. Kosolapoff

PETROV, K. D.

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

Reaction of [redacted] with amines. K. D. Petrov and E. S. Lavrushevt. Zhur. Obshchei Khi[redacted] (1953).—Formation of 3,5-$Cl_2C_6H_3NHCH_2CH_2OH$ (I) from $ClCH_2CH_2OH$ and 3,5-$Cl_2C_6H_3NH_2$ (II) does not proceed through an ethylene oxide stage, but goes by direct substitution. Heating 486 g. II with 202.2 g. $ClCH_2CH_2OH$ and 43.5 ml. H_2O 10 hrs. at 130–5°, concn. *in vacuo*, neutralization with Na_2CO_3, extn. with Et_2O, and distn. of the ext. gave 256 g. I, b_5 163–5°, m. 53–4° (from dil. EtOH). Passage of ethylene oxide into II alone at 100–50° or in EtOH, H_2O, or HCl failed to yield I. I (41.2 g.) in 30 ml. EtOH treated with 32.4 g. 37% formalin, stirred 0.5 hr., freed of EtOH by distn. *in vacuo*, and the residue distd. gave 84.3% *5-(3,5-dichlorophenyl)oxazolidine*, b_5 137–9°, d_4^{20} 1.3708, n_D^{20} 1.5936. G. M. Kosolapoff

~~PETROV, K.D.~~

PETROV, K.D.

/Reaction of α-bromohydrins with amines. K. D. Petrov and B. S. Laguchevn. *J. Gen. Chem. U.S.S.R.* ~~[illegible]~~ (1106[illegible] Engl. translation).--See *C.A.* 48, 3921*d*.

H. L. H. /

Petrov, K.D.

4

7. Preparation and properties of 1,2-bis(2-hydroxyethyl)oxazolidine and 2-phenyloxazolidine. K. D. Petrov, [illegible] Glova, and V. [illegible] Sukhova. Zhur. Obshchei Khim. 33, 1771-6(1963); cf. C.A. 44, 1808c.—To 122 g. $H_2NCH_2CH_2OH$ (I) in 140 ml. C_6H_6 was added with stirring 163 g. 30.7% formalin (the latter stages of the reaction need external heating) with azeotropic removal of the H_2O formed; distn. gave some 22 g. liquid, b_6 60-92°, which increased in viscosity on standing. The main product consisted of 60.28% *1,2-bis(2-ethoxyethyl)oxazolidine* (II), $b_{0.6}$ 92-7°. Careful fractionation of this gave some $CH_2{:}NCH_2CH_2OH$, b_6 94-7°, n^{20}_D 1.4740, which on standing changed to II over 6-10 hrs. II absorbs CO_2 from the air. Pure I, d^{20}_4 1.1787, n^{20}_D 1.5192. If the H_2O is not removed from the reaction mixt. as soon as it is formed, I is obtained in an impure state (d^{20}_4 1.1848, n^{20}_D 1.5186), and cannot be purified by fractionation. II heated with 3 moles Ac_2O 8 hrs. at 95-100°, concd. *in vacuo*, dild. with H_2O, neutralized with Na_2CO_3, extd. with BuOH and Et_2O (1:1), and the ext. distd. gave $CH_2{:}NCH_2CH_2OAc$, b_{10} 224-5°, d^{20}_4 1.1474, n^{20}_D 1.4758. The same substance, b_6 103-4°, d^{20}_4 1.1485, n^{20}_D 1.4762 formed in 14-g. yield when 51.5 g. $AcOCH_2CH_2NH_2$, 16.5 g. paraformaldehyde, 100 ml. C_6H_6, and 5 ml. concd. HCl were refluxed with azeotropic removal of the H_2O. II (72.8 g.) and 120.8 g. $PhNHCH_2CH(OH)Me$ (III) and 50 ml. EtOH shaken 8 hrs. at room temp. gave on distn. 8 g. I and *5-methyl-3-phenyloxazolidine*, m. 37-8°. The formation of these products indicates that II is cleaved into CH_2O and I; the reaction is essentially the reverse of that employed in the prepn. of II. Similar room temp. reaction of BzH with III in EtOH gave I and *5-methyl-2,3-diphenyloxazolidine*, m. 88.5-9.5°. G. M. Kosolapoff

Sci. Res. Inst. Plastics

PETROV, K.D.

Reaction of 3-phenyloxazolidine and some other derivatives of oxazolidine with formaldehyde. K. D. Petrov and O. K. Costeva (Sci. Research Plastics Inst. [redacted] *Zhur. Obshchei Khim.* 23, 1940-1(1953).—Addn. of 411 g. $HOCH_2CH_2NHPh$ to 439 g. of 36.9% formalin yielded an oily layer of 3-phenyloxazolidine; the mixture was diluted with EtOH until it became homogeneous (950 ml.) and the soln. was treated with 9 ml. concd. HCl with stirring, yielding 77.4% *p,p'-bis(3-oxazolidinyl)diphenylmethane* (I), m. 141-2°. Heating 19.8 g. (p-$H_2NC_6H_4)_2CH_2$ with 17.7 g. $ClCH_2CH_2OH$ and 3 ml. H_2O 8 hrs. (temp. unstated) (cf. Shorygin and Belov, *C.A.* 30, 3721[1]) followed by dilu. of the viscous mass with 50 ml. EtOH and reheating 8 hrs. longer, addn. of satd. Na_2CO_3, filtration, treatment of the EtOH soln. with 17.8 g. 37% formalin and heating 15 min. at 50-60° gave after standing 24 hrs., 4.6 g. I, m. 141-2°. Stirring 40.8 g. 3-phenyl-5-methyloxazolidine, 61.4 g. 36.6% formalin, 10 ml. dioxane, and 2 ml. concd. HCl 4 hrs. gave 16 g. *p,p'-bis(5-methyl-3-oxazolidinyl)diphenylmethane*, m. 95-6° (from EtOH). Similar reaction of 2,3-diphenyloxazolidine with formalin gave in 18 hrs. a poor yield of I, along with some BzH, which was isolated with difficulty from the filtrate. Formation of these products indicates that the reaction first yields $HOCH_2CH_2NPhCH(OH)Ph$, which splits into BzH and $HOCH_2CH_2NHPh$; the latter then reacts with CH_2O forming 3-phenyloxazolidine, which with CH_2O and HCl yields I. Stirring 96 g. furfural, 137 g. $HOCH_2CH_2NHPh$, and 1 g. K_2CO_3 10 min. gave after distn. 63.4% *2-(2-furyl)-3-phenyloxazolidine* (II), b_1 165-71°, d_4^{20} 1.1781, n_D^{20} 1.5855. Similar reaction with β-hydroxypropylaniline gave 72% *2-(2-furyl)-3-phenyl-5-methyloxazolidine*, $b_{1.5}$ 130-5°, d_4^{20} 1.1334, n_D^{20} 1.5710. II (13.5 g.) and 14 g. 37% formalin, 100 ml. EtOH and 0.5 ml. concd. HCl stirred 18 hrs. gave 12 g. I, and some resinous matter.

G. M. Kosolapoff

PETROV, K. D.

USSR/ Chemistry Reaction processes

Card : 1/1 Pub. 151 - 31/35

Authors : Petrov, K. D., Lagucheva, E. S., and Pukhova, V. I.

Title : Reaction of N-(2,5-dichlorophenyl)-oxazolidine with formaldehyde

Periodical : Zhur. ob. khim. 24, Ed. 7, 1248 - 1250, July 1954

Abstract : The reaction of N-(2,5-dichlorophenyl)-oxazolidine with formaldehyde, in the presence of HCl, resulting in the formation of 4,4'-di-(exazolidyl-N)-2,2',5,5'-tetrachlorodiphenylmethane, is discussed. The effect of Cl-atoms of N-(2,5-dichlorophenyl)-oxazolidine on the reaction of the latter with formaldehyde which, as is known, reacts with halide atom-free N-phenyloxazolidine, is explained. The experimental part is described in detail. Three USSR references.

Institution : Scientific-Research Institute of Plastic Materials

Submitted : February 5, 1954

PETROV, K. D.

5

Reaction of ethylene chlorohydrin with 2,5-dichloroaniline and aniline. K. D. Petrov, E. S. Lagutkina, and V. I. [illegible] Purkina. J. Gen. Chem. U.S.S.R. 24, 1587-90(1954)(Engl. translation).—See C.A. 49, 12131d. B. M. R.

PETROV, K.D.

USSR/Chemistry

Card 1/1 : Pub. 151 - 24/42

Authors : Petrov, K. D.; Lagucheva, E. S.; and Pukhova, V. I.

Title : Reaction of ethylene chlorohydrin with 2,5-dichloro aniline and aniline

Periodical : Zhur. ob. khim. 24/9, 1602-1605, Sep 1954

Abstract : The question of whether 2,5-dichloro aniline reacts with ethylene oxide at the moment of its formation and the reaction between ethylene chlorohydrin with aniline were investigated. Experiments showed that the formation of N-ethanol-2,5-dichloroaniline from 2,5-dichloro aniline and ethylene chlorohydrin takes place through direct exchange of the halide by an amino group. The formation of ethanol aniline derivatives from aniline and ethylene chlorohydrin in the presence of chalk and sodium hydroxide is explained. Eleven references: 8-USSR; 2-German and 1-USA (1889-1953). Table.

Institution : Scientific Research Institute of Plastics

Submitted : February 9, 1954

Petrov, K. D.

Reaction of bis(2-hydroxyethyl)aniline and bis(2-hydroxypropyl)aniline with formaldehyde. K. D. Petrov and G. A. Tal'kovskii. *Zhur. Obshchei Khimii*, J. Gen. Chem. (U.S.S.R.) 25, 105-6(1955)(Engl. translation).—$(HOCH_2CH_2)_2NPh$ (181 g.), stirred 40 hrs. at 30-5° with 600 ml. 25% EtOH, 45 ml. 36% formalin, and 2 ml. concd. HCl gave 91% $CH_2[C_6H_4N(CH_2CH_2OH)_2-p]_2$ (I), m. 114-15° (crude), m. 117.5° (from 60% EtOH); when 85% HCO_2H was used as the catalyst the yield was 93%. Similarly $(HOCHMeCH_2)_2NPh$ gave 90.5% $CH_2[C_6H_4N(CH_2CHMeOH)_2-p]_2$, m. 155-7° (from C_6H_6). I refluxed with Ac_2O 6 hrs. gave the corresponding *tetraacetate*, m. 51.5-2.5° (from 70% EtOH) (cf. *C.A.* 49, 2995).

G. M. Kosolapoff

PETROV, K.D.; TAL'KOVSKIY, G.B.

Interaction of bis-β-oxyethylaniline and bis-β-oxypropylaniline with formaldehyde. Zhur.ob.khim.25 no.1:120-122 Ja '55. (MIRA 8:4)

1. Nauchno-issledovatel'skiy institut plasticheskikh mass.
(Aniline) (Formaldehyde)

AID P - 1589

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 19/21

Authors : Petrov, K. D. and Lagucheva, Ye. S.

Title : Interaction of tetramethylbutyne diol with ethylene oxide

Periodical : Zhur. prikl. khim., 28, no.1, 111-114, 1955

Abstract : Condensation of tetramethylbutyne diol with ethylene oxide in the presence of dimethyl aniline resulting in the formation of bis-β-hydroxyethyl tetramethylbutyne diol and polyglycols is described. 6 references (Russian: 1938-51)

Institution: Plastics Scientific Research Institute

Submitted : My 23, 1955

Petrov, K. D.

6
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0
8

Reaction of some amino alcohols with organic acids. K. D. Petrov and G. B. Tal'kovskii (Sci. Research Inst. [illegible]). Zhur. Prikl. Khim. 28, 1205-10 (1955); cf. C.A. 47, 3244a, 8083e.—Cont. $PhNH_2$ (1.4 kg.) in an autoclave at 100-20° treated slowly with 1.9 kg. propylene oxide over 12 hrs. and the mixt. distd. gave 84% *PhN(CH₂CHMeOH)₂*, b₅ 189-91°, d_4^{20} 1.0855, n_D^{20} 1.5320; since in storage the product solidified in part, apparently it was not completely homogeneous, and consisted of mixed stereoisomers. Azeotropic esterification with $PrCO_2H$ in refluxing MePh gave 89% corresponding *dibutyrate*, b₄ 197-8°, d_4^{20} 1.035, n_D^{20} 1.5017; AcOH similarly gave 64% *diacetate*, b₁₄ 163-6°, d_4^{20} 1.060, n_D^{20} 1.5150, which on standing yielded a *stereoisomer*, m. 74.5-5°, and a *liquid isomer*, d_4^{20} 1.0723, n_D^{20} 1.5117. Heating 29.8 g. *o*-$C_6H_4(CO)_2O$, 64 g. $Et_2NCH_2CH_2OH$, and 100 ml. xylene 16 hrs. gave 53% *o*-$C_6H_4(CO_2CH_2CH_2NEt_2)_2$, b₁ 175-80°, d_4^{20} 1.0377, n_D^{20} 1.5003. Similarly sebacic acid gave 93.6% $(CH_2CH_2CH_2CH_2CO_2CH_2CH_2NEt_2)_2$, b₁₋₁₁ 132-3°, d_4^{20} 0.9250, n_D^{20} 1.4555. $HOCH_2CH_2NH_2$ (61 g.) with 220 g. $PrCO_2H$ in xylene gave 77.5% $PrCO_2CH_2CH_2NHCOPr$, b₁₄ 154-6°, d_4^{20} 1.0014, n_D^{20} 1.4596. Similarly, 137 g. $PhNHCH_2CH_2OH$, and 144 g. $PrCO_2H$ in xylene gave 76% $PrCO_2CH_2CH_2NPhCOPr$, b₄ 176-9°, d_4^{20} 1.045, n_D^{20} 1.5022, and AcOH gave 77.6% $AcOCH_2CH_2NPhAc$, b₄ 149-50°, d_4^{20} 1.1230, n_D^{20} 1.5153. $PhNHCH_2CHMeOH$ (75 g.) with 102 g. $PrCO_2H$ gave 65.5% $PrCO_2CHMeCH_2NPhCOPr$, b₄ 170-6°, d_4^{20} 1.0265, n_D^{20} 1.4982, also formed in 82% yield from $(PrCO)_2O$ on the amino ale. $PhNHCH_2CHMeOH$ with Ac_2O at 100-40° gave 90% $AcOCHMeCH_2NPhAc$, b₄ 139-40°, m. 62°.

G. M. Kosolapoff

AUTHORS: Petrov K. D., Bostova C. K., and Pukhova, V. I. [illegible]

TITLE: Reaction of 3 - Phenyloxazolidine with Phenol, 2,6 - Dimethylphenol and 2,4 - Dimethylphenol
(Vzaimodeystviye 3 - fenilokszazolidina s fenolom, 2,6 - dimetilfenolom i 2,4 - dimetilfenolom)

PERIODICAL: Zhurnal Obshchey Khimii 1957 Vol. 27, Nr 12, pp. [illegible] (USSR)

ABSTRACT: The reaction of oxazolidines with phenol is not described in technical literature. The effect of phenyloxazolidine on 2,4 - dimethylphenol, 2,6 - dimethylphenol and phenol was investigated in detail. By heating 3 - phenyloxazolidine with 2,4 - dimethylphenol the authors obtained 2,4 - dimethyl - 6 - (β - oxyethylphenylaminomethyl) - phenol as brown viscous oil (supposed reaction - see formula). This product is soluble in alkaline which indicates at a free hydroxide and makes probable the given structure. The reaction of 3 - phenyloxazolidine with 2,6 - dimethylphenol resulted in 2,6 - dimethyl - 4 (β - oxyethylphenylaminomethyl) - phenol which is also soluble in alkaline. As to the reaction of 3 - phenyloxazolidine with phenol the formation of three compounds is possible - with one, two and three parts of 3 - phenyloxazolidine. The compound of

Card 1/2

Reaction of 3 - Phenyloxazolidine with Phenol, 2,6 - Dimethylphenol and 2,4 - Dimethylphenol 79-12-11/43

phenol with three parts of phenyloxazolidine soluble in alkali which corresponds to the elementary formula $C_{33}H_{39}O_4N_3$ (see structural formulae) was precisely investigated. The simple phenolethers (e.g. anisole) with which the hydrogen atom is substituted by alkyl do not react with 3 - phenyloxazolidine. The reaction of oxazolidines with mesomethylenpolyphenoles occurs under the formation of resinous products which can practically be used.
There are 3 references, 1 of which is Slavic.

ASSOCIATION: Scientific Research Institute for Plastics (Nauchno - issledovatel'skiy institut plasticheskikh mass)

SUBMITTED: November 15, 1[illegible]

AVAILABLE: Library of Congress

1. Oxazolidines - Chemical reactions
2. Phenols - Chemical reactions

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430008-9"

L 35341-66 EWT(m)/EWP(j)/T IJP(c) WW/JWD/RM

ACC NR: AP6009871 (A) SOURCE CODE: UR/0413/66/000/004/0068/0068

INVENTOR: Petrov, K. D.; Sokolov, A. D.; Kagucheva, Ye. S.; Timofeyev, A. V.; Slozhenikina, N. M.; Soldatova, Ye. A.

ORG: None

TITLE: Preparation of molding material with novolak resin. Class [illegible], No. [illegible]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 4, [illegible]

TOPIC TAGS: molding material, novolak [illegible]

ABSTRACT: An Author Certificate has been issued describing a method [illegible] for making a molding material from novolak resin and a nitrogen-containing [illegible] compound. To extend the variety of molding material with high dielectric properties [illegible] aminoformaldehyde [illegible] is suggested as the oxygen-containing [illegible]

SUB CODE: 11/ SUBM DATE: [illegible]

Card 1/1

PETROV, Kostadin (Sofia)

Some critical notes on the part one of the textbook of stereometry for the 10th grade in Bulgarian secondary polytechnical schools. Mat i fiz Bulg 8 no.1:45-49 Ja-F '65.

PETROV, K.D.; TULYAGANOV, A.R.

Order of addition of aniline to divinyl oxide. Zhur.ob.khim. 3. no.9:1929-2031 S '63. (MIRA 16:9)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut plasticheskikh mass, Moskva.

(Aniline) (Butadiene)

PETROV, A.A.; TULYAGANOV, [illegible]

Isomerization of 1-methyl-2-butene-1-ol and its aldehydes. Zhur. obshch. khim. 31, no. [illegible] 3, 2035 [illegible].

1. Gosudarstvennyy [illegible] institut [illegible] [illegible], Moskva.
(Butanol [illegible] aldehydes)

PETROV, K.D.; BLINKOVA, O.P.

Reaction of 1,3-dichloro-2-butene with γ-amino alcohols. Zhur.ob. khim. 33 no.4:1285-1287 Ap '63. (MIRA 16:5)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut plasticheskikh mass, Moskva.
(Butene) (Alcohols)

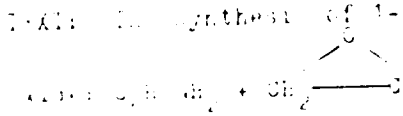
S/191/62/000/009/009/012
B101/B144

Author: Tulyankov, S. M., Petrov, K. L.

Title: The problem of synthesizing 1-anilino-4-butene-2-ol from aniline and divinyl oxide

Publication: Plasticheskiye massy, no. 9, 1962, 50 - 51

Text: The synthesis of 1-anilino-4-butene-2-ol from aniline and divinyl oxide



$C_6H_5NH_2 + CH_2$——$CH-CH=CH_2 \rightarrow C_6H_5NH-CH_2-CHOH-CH=CH_2$ as already [illegible] in Zhurn. [illegible], no. [illegible] (1962), was investigated in detail. The [illegible] aniline : divinyl oxide was 5 : 1, since with a ratio of 1 : 1 there [illegible] formation of 1,11-anilino-di-(4-butene-2-ol) as a by-product. With [illegible] initial substances, the reaction proceeded by dropwise addition of divinyl oxide to the aniline heated to 118-124°C; with commercial initial substances the reaction set in already at 100-106°C. The reaction product was fractionated and when using commercial substances these were neutralized beforehand with chalk or NaOH. 1-anilino-4-butene-2-ol, a

Card 1/2

The [illegible] of synthetic [illegible]

[illegible]

[illegible] oil, was obtained with a yield of 69-73% after a 4-5 hr reaction. There are 2 tables.

Card 2/2

[illegible] Z.D.; [illegible]

[illegible] anhydrofermentoxanilides. [illegible] [illegible]

1. Gosudarstvennyy [illegible] zikh mass, [illegible].

PETROV, K.D.; LAGUCHEVA, Ye.S.; PUKHOVA, V.I.

Synthesis and properties of β-amino- and β-arylaminoethoxysilanes. Zhur. ob. khim. 30 no.9:3015-3017 S '60. (MIRA 13:9)
(Silane)

S/079/60/030/0[illegible]/012/01[illegible]
B001/B064

53700 2209

AUTHORS: Petrov, K. D., Lagucheva, Ye. S., Pukhova, Y. I.

TITLE: Synthesis and Properties of Beta Amino- and Beta Arylamino-ethoxy Silanes

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 9, pp. [illegible]

TEXT: K. A. Andrianov and M. V. Sobolevskiy (Ref. 1) describe β-aminoethoxy silane which was synthesized by reacting ethanol amine with tetraethoxy silane in an aqueous medium. The authors synthesized the following new representatives of this series: methylvinyl-di-(β-[illegible]inoethoxy) silane, methylvinyl-di-(β-phenyl aminoethoxy) silane, methylvinyl-di-(β-[illegible] phenyl aminoethoxy) silane, tetra-(β-phenyl aminoethoxy) silane, and tetra-(β-2,5-dichlorophenylaminoethoxy) silane. These compounds were synthesized by reacting methylvinyl diethoxy silane and tetraethoxy silane with the corresponding α-amino alcohols according to the scheme

Card 1/2

Synthesis and Properties of Beta Amino- and Beta Arylaminoethoxy Silanes

S/079/60/030/[illegible]
B001/B004

$$R_2Si(OCH_2CH_3)_2 + 2R'NHCH_2CH_2OH \xrightarrow{CH_3ONa} R_2Si(OCH_2CH_2NHR')_2 + CH_3CH_2OH;$$

($R = CH_3$, $CH = CH_2$, OCH_2CH_3; $R' = H_2C_6H_5$, $C_6H_3Cl_2$. The products obtained are thick oils. Methylvinyl-di-(β-2,5-dichlorophenylaminoethoxy)silane tends to polymerization. Methylvinyl diethoxy silane was synthesized according to A. D. Petrov and collaborators (Ref. 2). Sodium methylate was used as a catalyst. Details are given in a table. There are 1 table and 2 Soviet references.

SUBMITTED: August 1[illegible], 1959

Card 2/2

PETROV, K.D.

Preparation of mono- and diethanolaniline from aniline and ethylene oxide. Plast.massy no.3:52-54 '60. (MIRA 13:6)

(Aniline) (Ethylene oxide)

PETROV, K.F. (Moskva)

Popular books on geology and geography. Priroda 52 no.2:123-124 '63. (MIRA 16:2)
(Bibliography—Geology) (Bibliography—Geography)

LOBANOV, Ivan Stepanovich; PETROV, K.F., red.; ATROSHCHENKO, L.Ye., tekhn. red.

[Victorious march of socialism] Pobednoe shestvie sotsializma. Moskva, Izd-vo "Znanie," 1963. 47 p. (Novoe v zhizni, nauke, tekhnike. II Seriia: Filosofiia, no.22) (MIRA 17:1)

(Russia--Economic conditions)

SEMENOV, Ivan Semenovich, laureat Gosudarstvennoy premii; PETROV, K.F., red.; [illegible], I.T., tekhn. red.

[The Irtysh waters will flow to Karaganda]Vody Irtysha pridut v Karagandu. Moskva, Izd-vo "Znanie," 1962. 28 p. (Novoe v zhizni, nauke, tekhnike. XII Seriia: Geologiia i geografiia, no.11) (MIRA 15:9)

1. Glavnyy inzhener proyekta kanala Irtysh-Karaganda (for Semenov).

(Irtysh-Karaganda Canal)

MORGUNOV, V.I., kand. tekhn. nauk; [illegible]

[illegible] vibration [illegible]
Institute for [illegible] Mashinostroeniia.
no.4:3-5 [illegible]

(SOV/91-59-6-[illegible]/33

AUTHORS: Khablov, V.S., and Petrov, K.G., Engineers

TITLE: The Best Method of Artificial Respiration

PERIODICAL: Energetik, 1959, Nr 6, pp 36-37 (USSR)

ABSTRACT: The authors describe an ancient method of reviving an unconscious person by breathing into him "from mouth to mouth", perfected by American physician Peter Safar and approved by the American Association of Surgeons. The perfection consists of the use of a rubber or a flexible plastic pipe to avoid physical contact. The article describes the pipe and the method of its application. There are 2 drawings and 1 diagram.

Card 1/1

PETROV, Khr.; GIUROV, At.; STASOVA, E.; ENCHEVA, M.

Electrolytic nickel polishing with alternating current. Godishnik mash elekt 12 no. 1:107-114 '62 [publ. '63].

PETROV, Khr.; GIPPOV, At.; DOBREVA, Ek.; BAEVA, V.

Electrolysis of potassium permanganate in an alkali medium with 400 c.p.s. alternating current. Godishnik mash. inst. no. 1: 117-124 '62 [publ. '63].

Electrolysis of potassium permaganate in an alkali medium medium with 50 c.p.s. alternating current. Ibid.:125-136.

ZAYDEL', A.N.; PETROV, A.A.; PETROV, K.I.

Spectral determination of hydrogen in metals employing an isotopic equilibrium. Fiz.sbor. no.4:206 '58. (MIRA 12:5)

1. Fizicheskiy institut Leningradskogo ordena Lenina gosudarstvennogo universiteta imeni A.A.Zhdanova.
(Hydrogen--Spectra) (Metals--Hydrogen content)

L 4457-66 EWT(m)/EWP(t)/EWP(b) IJP(c) JD/JG

ACCESSION NR: AP5018718 UR/0070/65/010/004/0509/0514
548.736:535.342

58
55
B

AUTHORS: Ivanov, V. I.; Varfolomeyev, M. B.; Petrov, K. I.; Pervykh, V. G.; Plyushchev, V. Ye.

TITLE: X-ray diffraction and infrared spectroscopic study of tetrahydrates of perrhenate of rare earth elements and yttrium

SOURCE: Kristallografiya, v. 10, no. 4, 1965, 509-514

TOPIC TAGS: x-ray diffraction analysis, IR spectroscopy, crystal lattice structure, crystal symmetry, crystal unit cell, rare earth element

ABSTRACT: The authors investigated crystals of tetrahydrates of perrhenate of lanthanum, lanthanoids, and yttrium, the production and chemical analysis of which were described in an earlier paper (Dokl. AN SSSR v. 158, 664, 1964). A schematic study of the single crystals in x-ray cameras and with a diffractometer has shown that these substances crystallize in three different structural types. The syngony,

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L 4457-66

ACCESSION NR: AP5018718

the space group, and the unit-cell dimensions of representatives of these three groups are presented. The first group (LaGePr), consists of crystals belonging to the monoclinic syngony, space group C_{2h}^5 -- $P2_1/c$ with four formula units per unit cell. The second group includes Pr, Nd, Sm, Eu, Gd, Tb, and Dy, with crystals of rhombic symmetry, and space group C_{2v}^9 -- $Pna2_1$, with four formula units per unit cell. The third group includes Ho, Er, Tu, Yb, Lu, and Y, forming crystals of triclinic syngony. The space group is T1 and the unit cell contains two formula units. The parameters of the unit cells and the infrared absorption spectra were obtained for some of these elements. In the case of the tetrahydrate of praseodymium perrhenate, it crystallizes from solutions in both monoclinic and rhombic syngony under the same conditions. 'The authors thank Ye. S. Makarov for interest in the work.' Orig. art. has: 3 figures and 2 tables.

Card 2/3

L 4457-66

ACCESSION NR: AP5018718

2

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I. Venadskogo AN SSSR (Institute of Geochemistry and Analytical Chemistry, AN SSSR ; Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology)

SUBMITTED: 22Dec64 ENCL: 00 SUB CODE: OP, SS

NR REF SOV: 003 OTHER: 003

Card 3/3

KORSUNSKIY [illegible] BUKHTIYAROV, V.V., [illegible] M.V.

[illegible]

[illegible]

ZAKHAROV, Ye.I.; LEPIS, L.V.; PETROV, K.I.

Spectrum determinations of bismuth, cadmium, tin, lead and antimony impurities in tantalum. Zhur.anal.khim. 14 no.1: 135-136 Ja-F '59. (MIRA 12:4)
(Tantalum--Spectra)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430008-9"

YELINSON, Samuil Vladimirovich; PETROV, Karl Ivanovich; PALEY, P.N., nauchnyy red.; PCHELINTSEVA, G.M., red.; MAZKL', Ye.I., tekhn.red.

[Zirconium; chemical and physical methods of analysis] TSirkonii; khimicheskie i fizicheskie metody analiza. Moskva, Izd-vo glav.upr.po ispol'zovaniiu atomnoi energii pri Sovete Ministrov SSSR, 1960. 211 p. (MIRA 13:7)
(Zirconium)

5(2),5(4)

AUTHORS: Zaydel', A. N., Lipis, L. V., Petrov, K. I. SOV/78-14-1-31/39

TITLE: Spectrum Analysis by the Method of Evaporation. Communication 9. Analysis of Zirconium

PERIODICAL: Zhurnal analiticheskoy khimii, 1959, Vol 14, Nr 4, pp 497-500 (USSR)

ABSTRACT: The evaporation method for determining the admixtures in ZrO_2 can be applied because the vapor tension of zirconium dioxide vapors is negligable even at relatively high temperatures (Refs 11, 12). Other compounds of zirconium and even metallic zirconium can be easily transferred into dioxide by glowing in the air at 700-800°. This possibility makes gauging very easy as synthetic standards of ZrO_2 are simple to prepare. The success of the evaporation method depends on the right choice of temperature which has to ensure a complete and reproducible separation of the admixtures to be determined from the main component. The optimum temperature of heating zirconium dioxide in air and under decreased pressure is 2000-2100°. The B, Bi, Cd, Cr, Fe, K, Na, Li, Ni, Mn, Pb, Sb, Sn and Si admixtures which have to be

Card 1/3

determined sublimate almost completely at these temperatures, Al and Mg sublimate to a large percentage. At temperatures $> 2100^{\circ}$ the evaporation of zirconium dioxide sets in. The degree of evaporation of several admixtures was tested with radioactive isotopes (ref 9). The conditions for the spectrum analysis of the condensate were the same as in earlier studies. Table 1 gives the blackening of the analytic lines of the admixtures after evaporation in air and in vacuum for the following elements: Al, B, Fe, Mg, Li, Pb. The zirconium dioxide sample contained 1.10^{-4}% of B and Li and 1.10^{-2}% of Al, Fe, Mg and Pb each. The pairs of lines used for the analytic determination are listed in table 2. The condensate forms regular and solid layers in the sublimation of the admixtures in vacuum. Therefore the substance enters the zone of discharge with more effect as when the sublimation is carried out under atmospheric pressure. The condensation coefficients of the additions are higher in vacuum (with the exception of Li, Cl, and Pb). In order to keep the evaporation conditions and the excitation of spectra constant and to eliminate "third" components, the method of the inner

Card 2/3

Spectrum Analysis by the Method of Evaporation. Communication 8. Analysis of Zirconium SOV/75-14-4-24/30

standard was applied. Cobalt and gallium were used as inner standards. By this a high reproducibility of the determination is achieved: for manganese and chromium 8%, for boron 9%, for iron, nickel, magnesium, silicon, bismuth, antimony, tin, and lead 10%, for cadmium 11% and for aluminum, potassium, sodium, and lithium 20%. The reliability of the method was tested by comparing the obtained results with results obtained in chemical determinations (Table 3). The sensitivity of the determination of the admixtures in ZrO_2 is the same as it is in the analysis of ThO_2 and BeO_2 (Ref 7). It exceeds the sensitivity of the method of fractionated evaporation with a carrier (Ref 3) and the method of the direct "burning" of zirconium in different light sources (Refs 1, 2). The investigations described in this paper were conducted in 1952 - 1953. There are 2 figures, 3 tables, and 13 references, 7 of which are Soviet.

SUBMITTED: April 7, 1958

Card 3/3

5 5310

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430008-9"

5(2),5(4)

AUTHORS: Zaydel', A. N., Lipis, L. V., Petrov, K. I. SOV/[illegible]-21/30

TITLE: Spectrum Analysis by the Method of Evaporation. Communication 9. Analysis of Zirconium

PERIODICAL: Zhurnal analiticheskoy khimii, 1959, Vol 14, Nr 4, pp 497-500 (USSR)

ABSTRACT: The evaporation method for determining the admixtures in ZrO_2 can be applied because the vapor tension of zirconium fluoride vapors is negligible even at relatively high temperatures (Refs 11, 12). Other compounds of zirconium and even metallic zirconium can be easily transferred into fluoride by glowing in the air at 700-800°. This possibility makes gauging very easy as synthetic standards of ZrO_2 are simple to prepare. The success of the evaporation method depends on the right choice of temperature which has to ensure a complete and reproducible separation of the admixtures to be determined from the main component. The optimum temperature of heating zirconium fluoride in air and under decreased pressure is 2000-2100°. The B, Si, Cd, Cr, Fe, K, Na, Li, Si, Mn, Pb, Sb, Sn and Si admixtures which have to be

Card 1/3

determined sublimate almost completely at these temperatures. Al and Mg sublimate to a large percentage. At temperatures $\geq$ 2100° the evaporation of zirconium fluoride takes place. The degree of evaporation of several admixtures was tested with radioactive isotopes (Ref 9). The conditions for the spectrum analysis of the condensate were the same as in earlier studies. Table 1 gives the blackening of the analytic lines of the admixtures after evaporation in air and in vacuum for the following six notes: Al, B, Fe, Mg, Li, Pb. The zirconium fluoride sample contained $1 \cdot 10^{-4}$% of B and Li and $1 \cdot 10^{-3}$% of Al, Fe, Mg and Pb each. The pairs of lines used for the analytic determination are listed in table 2. The condensate forms regular and solid layers in the sublimation of the admixtures in vacuum. Therefore the substance enters the zone of discharge with more effect as when the sublimation is carried out under atmospheric pressure. The condensation coefficients of the additions are higher in vacuum (with the exception of Si, Cd, and Pb). In order to keep the evaporation conditions and the excitation of spectra constant and to eliminate "third" components, the method of the inner

Card 2/3

standard was applied. Cobalt and gallium were used as inner standards. By this a high reproducibility of the determination is achieved: for manganese and chromium 5%, for boron 8%, for iron, nickel, magnesium, silicon, bismuth, antimony, tin, and lead 10%, for cadmium 15% and for aluminum, potassium, sodium, and lithium 20%. The reliability of the method was tested by comparing the obtained results with results obtained in chemical determinations (Table 5). The sensitivity of the determination of the admixtures in ZrO_2 is the same as it is in the analysis of ThO_2 and BeO_2 (Ref 7). It exceeds the sensitivity of the method of fractionated evaporation with a carrier (Ref 8) and the method of the direct "burning" of zirconium in different light sources (Refs 1, 2). The investigations described in this paper were conducted in 1957-1958. There are 2 figures, 5 tables, and 12 references, 7 of which are Russian.

SUBMITTED: April 7, 1958

Card 3/3

Abstract:

USSR/Analysis of Inorganic Substances. G-2

Abs Jour: Ref Zhur-Khimiya, No 5, 1957, 19602

frequency discharge from a VG-2 generator. The lines D_α and H_α are photographed on the spectrograph with a diffraction grating of 600 lines per mm. In case the H and D pressures are low, up to 30% of He is added to the gas mixture for the stability of the discharge. The concentration of H in the metal is determined by the equation: a (weight %) = $(PVT_1 / RTM) \cdot (C_H / C_D) \cdot 100$, where P is the initial pressure of D, V is the capacity of the vessel, M is the weight of the metal, T is the initial absolute temperature of the sample, C_H / C_D is the ratio of the concentrations of H and D in the equilibrium mixture. The method does not require a complete liberation of the gas to

Card 2/3 - 71 -

PETROV K I

PHASE I BOOK EXPLOITATION SOV/4448

Yelinson, Samuil Vladimirovich, and Karl Ivanovich Petrov

Tsirkoniy; khimicheskiye i fizicheskiye metody analiza (Zirconium; Chemical and Physical Methods of Analysis) Moscow, Atomizdat, 1960. 211 p. Errata slip inserted. 5,000 copies printed.

Scientific Ed.: P.N. Paley; Ed.: G.M. Pchelintseva; Tech. Ed.: Ye. I. Mazel'.

PURPOSE: This book is intended for chemists who perform zirconium analyses. It may be used by teachers and students of schools for higher technical education to supplement courses in chemical analysis.

COVERAGE: The monograph is a manual on methods of zirconium analysis and is based on Soviet and non-Soviet literature published up to the second half of 1959. It discusses practical problems in the analytical chemistry of zirconium and describes the more accurate and proven methods of determining zirconium in natural raw materials and in processing products. The effects of impurities and alloying elements on the properties of zirconium are considered. In view of the remarkable mechanical properties of zirconium, i.e., its high corrosion resistance and low cross section for thermal neutron capture, the study included material on zirconium

Card 1/6

5.2/1, 5.4,

AUTHORS: Zakharov, Ye. [illegible] Lipis, L. V., SOV/[illegible]
Petrov, K. I.,

TITLE: The Spectrographic Determination of Impurities of Bismuth, Cadmium, Tin, Lead, and Antimony in Tantalum. Spektral'noye opredeleniye primesey vismuta, kadmiya, olova, svinta i sur'my v tantale.

PERIODICAL: Zhurnal analiticheskoy khimii, [illegible], Vol. [illegible], No. [illegible], [illegible] (USSR)

ABSTRACT: Tantalum of a high degree of purity must not contain more than [illegible] 10^{-4}% of each of the following impurities: Bismuth, [illegible], tin, lead, antimony. For the quantitative determination of these impurities a method having a sensitivity of [illegible] is therefore necessary. In order to avoid the difficulties arising in the spectral analysis of metallic tantalum, the latter is best converted into the oxide, whereby also the impurities go over into the corresponding oxides. Tantalum pentoxide, contrary to the oxides of the 5 impurities to be determined, is relatively difficultly volatile. By employing the vaporization method (Refs. 1, 2) the necessary sensitivity of impurity determination in tantalum can thus be attained.

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The Spectrographic Determination of Impurities of Bismuth, Cadmium, Tin, Lead, and Antimony in Tantalum SOV/75-14-1-23/32

which sensitivity is higher than that attained when using a direct current arc. Oxidation of tantalum was carried out by heating for 1.5 to 2 hours in a muffle furnace at 500 - 700°. Investigations showed that the optimum temperature for the evaporization of the admixed oxides is 1400°. At this temperature the impurities evaporate completely, whereas the main quantity Ta_2O_5 practically does not evaporate at all. Investigations concerning optimum temperature were carried out in the range of between 900 and 1600°. Copper is suited as material for the electrodes on which the evaporated impurities are again condensed. Also spectrochemically pure carbon may be used, but in this case determination is not so accurate. Vaporization of impurities from Ta_2O_5 was brought about in carbon crucibles. In order to obtain reproducible results the method of internal standards was employed. Thallium may be recommended as internal standard. The pairs of lines used for the spectrometric determination of impurities in tantalum pentoxide are given by a table. For the excitation of the spectra of impurities precipitated on the electrodes a con

Card 2/3

AUTHORS:

TITLE:

PERIODICAL:

USSR

ABSTRACT:

Card 1/1

SUBMITTED:

AUTHOR: [illegible]

TITLE: The Determination of Hydrogen in Tantalum, Niobium, and Uranium (Opredeleniye vodoroda v tantale, niobii i urane)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, No. 9, pp. [illegible] (USSR)

ABSTRACT: For these determinations the same method of isotopic counterbalancing was used which was devised for the determination of hydrogen in steel, zirconium and titanium. The apparatus and the experimental procedure were described in an earlier paper. Since the proper conditions must prevail for these determinations, experiments were carried out to determine the optimal conditions. These were found to be: for niobium and tantalum a temperature of 800° and a heating time of 15 minutes; for uranium a temperature of [illegible] and heating for 30 minutes. The analytical results are tabulated. It was found that the hydrogen content of metals can be determined in the equilibrium gas phase resulting after decomposing the isotopic mixture. The sensitivity of the method for 1 gram of metal is 1.10^{-6} % by weight, and the

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[illegible] table, and [illegible] refer

PE 1 REV, K.Z.

Spectrum determination of hydrogen in zirconium by isotopic equilibration. A. N. Zaldel and K. I. Petrov. *Zavodskaya Lab.* 22, 927-8(1956).—The application of Ingram's method (*C.A.* 48, 11407), which consists in heating a sample in D_2 atm. until equil. is reached, and detg. mass spectroscopically the equil. proportion of H/D, is applied. The Cu/Cu concn. in the sample and in the gas phase was found to be the same, and by using the method an H content of up to 1×10^{-4}% was detd. with a root mean square error of ±8-10%. The operation details are given.

W. M. Sternberg

PETROV, K I.

465. Spectrographic determination of hydrogen in zirconium by the method of isotopic equilibrium. A. N. Zaidel' and K. I. Petrov. *Zavod. Lab.*, 1956, 22 (5), 523–526.—A known amount of the sample of Zr, *e.g.*, 1 g, is heated in deuterium at 800° for 15 min. and the isotopic composition of the gas is determined spectrographically. Contents of H in Zr of 1×10^{-4}% can be determined with a mean square error of ±10%. The results are in good agreement with those obtained by vacuum extraction.

G. S. SMITH

24(7) PHASE I BOOK EXPLOITATION SOV/1700

Lvov. Universitet

Materialy X Vsesoyuznogo soveshchaniya po spektroskopii, 1956. t. II: Atomnaya spektroskopiya (Materials of the 10th All-Union Conference on Spectroscopy, 1956. Vol 2: Atomic Spectroscopy) (Lvov) Izd-vo L'vovskogo univ., 1958. 568 p. (Series: Its: Fizicheskiy sbornik, vyp.4(9)) 3,000 copies printed.

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po spektroskopii.

Editorial Board: G.S. Landsberg, Academician, (Resp. Ed.); B.S. Neporent, Doctor of Physical and Mathematical Sciences; I.L. Fabelinskiy, Doctor of Physical and Mathematical Sciences; V.A. Fabrikant, Doctor of Physical and Mathematical Sciences; V.G. Koritskiy, Candidate of Technical Sciences; S.M. Rayskiy, Candidate of Physical and Technical Sciences; L.K. Klimovskaya, Candidate of Physical and Mathematical Sciences; V.S. Milliyanchuk (Deceased), Doctor of Physical and Mathematical Sciences; A.Ye. Glamberman, Doctor of Physical and Mathematical Sciences. Ed.: S.L. Gazer; Tech. Ed.: T.V. Saranyuk.

PURPOSE: This book is intended for scientists and researchers in the field of spectroscopy, as well as for technical personnel using spectrum analysis in various industries.

COVERAGE: This volume contains 177 scientific and technical studies of atomic spectrography presented at the 10th All-Union Conference on Spectroscopy in 1956. The studies were carried out by members of scientific and technical institutes and include extensive bibliographies of Soviet and other sources. The studies cover many phases of spectroscopy: spectra of rare earths, electromagnetic radiation, physicochemical methods for controlling uranium production, physics and technology of gas discharge, optics and spectroscopy, abnormal dispersion in metal vapors, spectroscopy and the combustion theory, spectrum analysis of ores and minerals, photographic methods for quantitative spectrum analysis of metals and alloys, spectral determination of the hydrogen content of metals by means of isotopes, tables and atlases of spectral lines, spark spectrographic analysis, statistical study of variation in the parameters of calibration curves, determination of traces of metals, s[illegible] analysis in metallurgy, thermochemistry in metallurgy, and principles and practice of spectrochemical analysis.

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Materials of the 10th All-Union Conference (Cont.) SOV/1700

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PETROV, K.I.

RUDENKO, Ye.A.; SERGEYEV, A.G.; PETROV, K.I.

Glue for applying Lincrusta to walls and partitions. Rats.i izobr.predl.v stroi. no.60 21-22 '59. (MLRA 7:2)
(Glue) (Lincrusta-Walton)

BASKIN, A.A.; ZAKHAROV, Ye.I.; PETROV, K.I.; RZHEKHINA, Ye.I.

Spectral determination of impurities in niobium. Zhur.anal.khim. 16 no.5:627-630 S-O '61. (MIRA 14:9)
(Niobium--Spectra)

PETROV, [illegible].

Irrigation - Rostov Province

Results of building the primary irrigation network in the Rostov province. [illegible] 4 no. 6, 1951.

Monthly List of Russian Accessions. Library of Congress, December [illegible]. Unclassified.

SOROKIN, P.Ya.; PETROV, K.M.; ZOKIN, A.I.

Degasifying electrical steel in the vacuum. Trudy Inst. met. UFAE SSSR no.2:67-72 '58. (MIRA 12:4)
(Vacuum metallurgy) (Gases in metals)

PETROV, K.M., inzhener; GUBANKOV, N.I., inzhener.

Don-Main Irrigation Canal. Gidr. i mel. 8 no.8:3-10 Ag '56. (MLRA 9:9)

1.Nachal'nik upravleniya stroitel'stva "Rostovdonvodstroy". (Don-Main Irrigation Canal)

PETROV, K.M.

Principles for discriminating physicogeographical complexes on the Karelian Isthmus. Izv.Vses.geog.ob-va 89 no.1:60-64 Ja-F '57. (MLRA 10:3)

(Karelian Isthmus--Physical geography)

S/137/60/000/012/001/041
A006/A001

Translation from: Referativnyy zhurnal, Metallurgiya, 1960, No. 12, p. 60, # 28441

AUTHORS: D'yakonov, V.I., Petrov, K.M.

TITLE: Vacuum Treatment of Structural Steels

PERIODICAL: Byul. nauchno tekhn. inform. Ural'skiy n.-i. in-t chern. metallov, 1959, No. 7, pp. 8 - 14

TEXT: The 38 (M H) A (38KhMYuA), 12 2 4 A (12Kh2N4A), 15 (ShKh15) and band steels were subjected to vacuum treatment. Seven heats were produced in a 250-kg furnace and the same number in a 130-kg induction furnace. Heats of the first group were vacuum treated during syphon-teeming process, heats of the second group were treated in the ladle prior to teeming. The teeming temperature was 1,600 - 1,610°C. Vacuum treatment in the ladle was performed for 15 - 30 minutes at a residual pressure as high as 15 - 30 mm Hg. The mechanical properties of Cr-Ni steel were not improved. Only a slight increase in a_k of

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Vacuum Treatment of Structural Steels

S/137/60/000/012/001/041
A006/A001

12Kh2N4A and band steel was observed. The content of non-metallic impurities decreased only in band and ball-bearing steel. In all steels [H] decreased by about 1 - 1.5 cm^3/100 g, and [N] remained unchanged. The macro and microstructure were satisfactory.

Ye.K.

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

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PETROV, K.M.

Analysis of the distribution of benthic biocenoses of sea shoals based on aerial photography. Vop. ekol. 4:139-140 '62. (MIRA 15:11)

1. Laboratoriya aerometodov AN SSSR, Leningrad.
(Benthos) (Photography, Aerial)

L 07234-67 EWT(1)/FSS-2 IJP(c) JGS/GW/GD
ACC NR: AT6026454 (N) SOURCE CODE: UR/0000/66/000/000/0170/0179

AUTHOR: Petrov, K. M.

ORG: none

TITLE: Landscape method of aerial photograph interpretation of shallow water bottom

SOURCE: AN SSSR. Mezhduvedomstvennaya komissiya po aeros"yemke. Teoriya i praktika deshifrirovaniya aerosnimkov (Interpretation of aerial photographs in theory and practice). Moscow, Izd-vo Nauka, 1966, 170-179

TOPIC TAGS: photo interpretation, aerial photography, aerial surveying, geographic survey, geophysic research

ABSTRACT: The author surveys the so-called landscape method of aerial photograph interpretation as it applies to shallow water bottom photographs. The method was developed over the years (1937 to date) by many Soviet research scientists. The method is based on the fact that an aerial photograph reflects in an objective manner the landscape, its morphologic units, and its components. The paper discusses in considerable detail the landscape correlational interpretation signs, the location of such signs, the aerial photography standards, and the extrapolation of interpretation signs. The basic foundations of the shallow water bottom interpretation methods are discussed. Orig art. has: 5 figures.

SUB CODE: 08,14/ SUBM DATE: 21Jan66/ ORIG REF: 021

Card 1/1

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240430008-9"

GRIGORENKO, N.P., kand. med. nauk, otv. red.; LEONOV, A.N., zam. otv. red.; SPERANSKIY, V.S., dots. red.; ZHERLIN, I.V., prof., red.; KARPOVA, L.P., dots., red.; PETROV, K.M., zasl. vrach RSFSR, red.; KARPOVA, E.V., kand. med. nauk, red.

[Papers on the anatomy of the circulatory system] Sbornik nauchnykh rabot po anatomii krovenosnoi sistemy. Volgograd, Nizhne-Volzhskoe knizhnoe izd-vo, 1964. 2 v. (MIRA 18:12)

1. Volgograd. Meditsinskiy institut. 2. Glavnyy vrach Oblastnogo onkologicheskogo dispansera Volgogradskogo meditsinskogo instituta (for Petrov). 3. Kafedra normal'noy anatomii Volgogradskogo meditsinskogo instituta (for Grigorenko, Speranskiy).

PETROV, K.M.; DYAKONOV, V.I.; FADEYEV, I.G.; SEMENENKO, P.P.; KRYUKOV, L.G.; Prinimali uchastiye: PASTUKHOV, A.I.; SHISHKINA, N.I.; PAZDNIKOVA, T.S.; CHIRKOVA, S.N.; KAREL'SKAYA, T.A.; LOPTEV, A.A.; DZEMYAN, S.K.; ISUPOV, V.F.; BELYAKOV, A.I.; GUDOV, V.I.; SUKHMAN, L.Ya.; SLESAREV, S.G.; GOLOVANOV, M.M.; GLAGOLENKO, V.V.; ISUPOVA, T.A.; ZYABLITSEVA, M.A.; KAMENSKAYA, G.A.; POMUKHIN, M.G.; UTKINA, V.A.; MANEVICH, L.G.

Vacuum treatment of alloyed open hearth steel. Stal' 22 no.2:113-117 F '62. (MIRA 15:2)

1. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov (for Pastukhov, Shishkina, Pazdnikova, Chirkova, Karel'skaya, Loptev, Dzemyan). 2. Metallurgicheskiy kombinat im. A.K. Serova (for Isupov, Belyakov, Gudov, Sukhman, Slesarev, Golovanov, Glagolenko, Isupova, Zyablitseva, Kamenskaya). 3. 6-y Gosudarstvennyy podshipnikovyy zavod (for Pomukhin, Utkina, Manevich).

(Steel—Metallurgy)
(Vacuum metallurgy)

PETROV, K.M.

Submarine vegetation of the Black Sea littoral in the Western Caucasus and Taman' Peninsula. Report No.3: Characteristics of phytocoenoses in the lower sublitteral on rock. Characteristics of phytocoenoses on sandy mud and shelly ground. Vest.LGU 16 no.24: 90-99 '61. (MIRA 14:12)

(Black Sea--Plant communities)

AUTHOR: Petrov, K.M. 12-1-15/26

TITLE: None Given

PERIODICAL: Izvestiya Vsesoyuznogo Geograficheskogo Obshchestva, 1956, # 1, pp 89 - 91 (USSR)

ABSTRACT: The author reviews the first part of a collective volume "Geographical Problems. Physical and Economic Regions" (Voprosy geografii. Fiziko-geograficheskoye rayonirovaniye) dealing with the division into physical and economic regions. The reviewer enumerates various articles of this collection without giving a detailed analysis of each. With regard to different opinions of some authors, he suggests introducing a new method of classification and division, which must be objective and natural.

AVAILABLE: Library of Congress

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USSR / Cultivated Plants. Ornamental. M-8

Abs Jour: Ref Zhur-Biol., No 6, 1958, 25290

Author : ~~Petrov, K. M.~~
Inst : Not given
Title : The Victoria Regia in Ashkhabad

Orig Pub: Priroda, 1957, No 6, 109

Abstract: On the basis of a 15 year trial in cultivating the Victoria regia in the Ashkhabad Botanical Garden from seed in an open basin, it is recommended for open water reservoirs of Southern Turkmenia -- N. S. Lebedeva

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