OSIPOV, N.V.

Spontaneous pneumothorax of non-tuberculous origin. Probl.tub. 37 no.6:101-103 '59. (MIRA 13:2)
(PNEUMOTHORAX case reports)

DOLUKHANOV, Mark Pavlovich; OSIPOV, N.V., otv. red.; VENGRENYUK, L.I., red.; SLUTSKIN, A.A., tekhn. red.

OSIPOV, N.V., starshiy inzh.; VARNAKOVA, Ye.D., kand. fil. nauk, red., starshiy nauchnyy sotr.; SHADRINA, M.S., red.; NOVOSELOVA, V.V., tekhn. red.

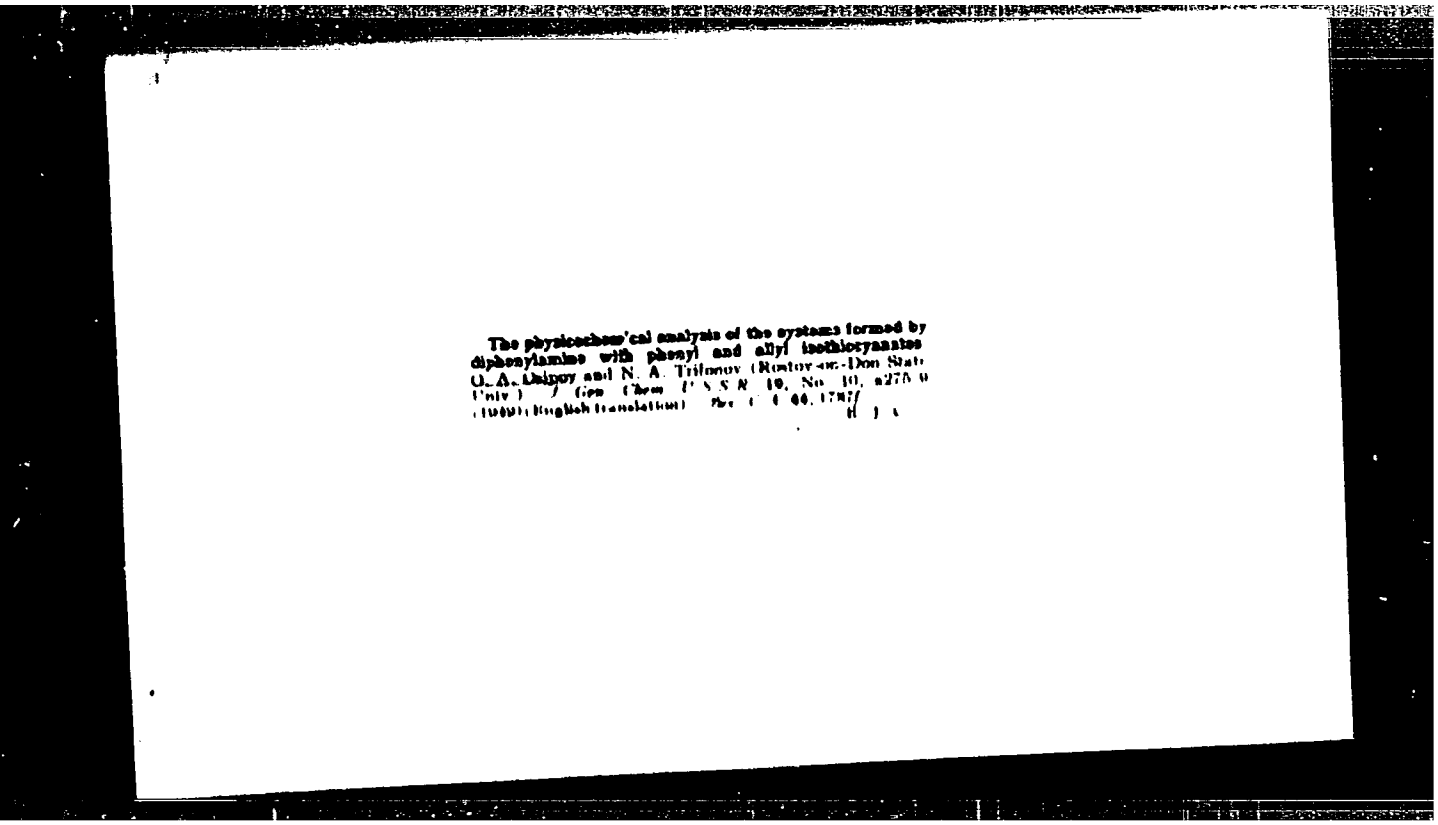
[Training of workers specializing in sewing in secondary schools]Opyt podgotovki rabotnikov shveinykh spetsial'nostei v srednei shkole. Pod red. E.D.Varnakovoi. Moskva, Izd-vo Akad. pedagog. nauk RSFSR, 1962. 93 p. (MIRA 15:9)

1. Akademiya pedagogicheskikh nauk RSFSR, Moscow. Institut proizvodstvennogo obucheniya. 2. Institut proizvodstvennogo obucheniya Akademii pedagogicheskikh nauk RSFSR(for Osipov, Varnakova).

(Sewing—Study and teaching)

OSIPOV, N.V. (Vladivostok)

Treatment of spontaneous pneumothorax [with summary in French].
Probl.tub. 36 no.2:105 '58 (MIRA 11:5)
(PNEUMOTHORAX)



The physicochemical analysis of the systems formed by diphenylamine with phenyl and allyl isothiocyanates
O. A. Dalnov and N. A. Trifonov (Rostov-na-Don State Univ.) J. Gen. Chem. (USSR) 10, No. 10, 1750 (1940) (English translation) See C. A. 34, 1787[illegible]

1. OSIPOV, N.V.

2. USSR (600)

4. Vermouth

7. Soviet vermouth production. Vin. SSSR 12 no.10, 1952.

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

1. MAYOROV, V.S.; OSIPOV, N.V.

2. USSR (600)

4. Wine and Wine Making

7. Wine industry needs precise instructions and direction in chemical and microbiological control. Vin.SSSR 12 no.1 , 1952.

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

1. OSIPOV, N. V.

2. USSR (600)

4. Reduction, Chemical

7. Characteristics of the oxidation-reduction processes in wine. Vin. SSR 12 no. 12, 1952.

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

OSIPOV, N. V.

Wine and Wine Making

Working according to [illegible] Vinodelie SSSR 13, No. [illegible]

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

1. OSIPOV, N. V.

2. USSR (600)

4. Wine and Wine Making - Hungary

7. Wine making in Hungary. Vin. SSSR 13, No. 4, 1953.

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

OSIPOV, N. V. Cand tech sci -- "Setting up of an efficient flow sheet [illegible] of semi-sweet table-grape wines under conditions of the Russian Federation." Mos, 1960 (Min of Higher and Secondary Specialized Education RSFSR. Mos Technological Inst of Food Industry). (KL, 1-61, 120)

VIL'NER, P.D. (Kuybyshev); OGIYOV, N.Ye. (Kuybyshev)

[illegible] natural forms. Izv. vys. ucheb. zav.; av.tekh. 2 no.1: 111-124 '59. (MIRA 12:3)

(Rotors)

OSIPOV, O.

USSR/Miscellaneous

Card 1/1

Author : Osipov, O.

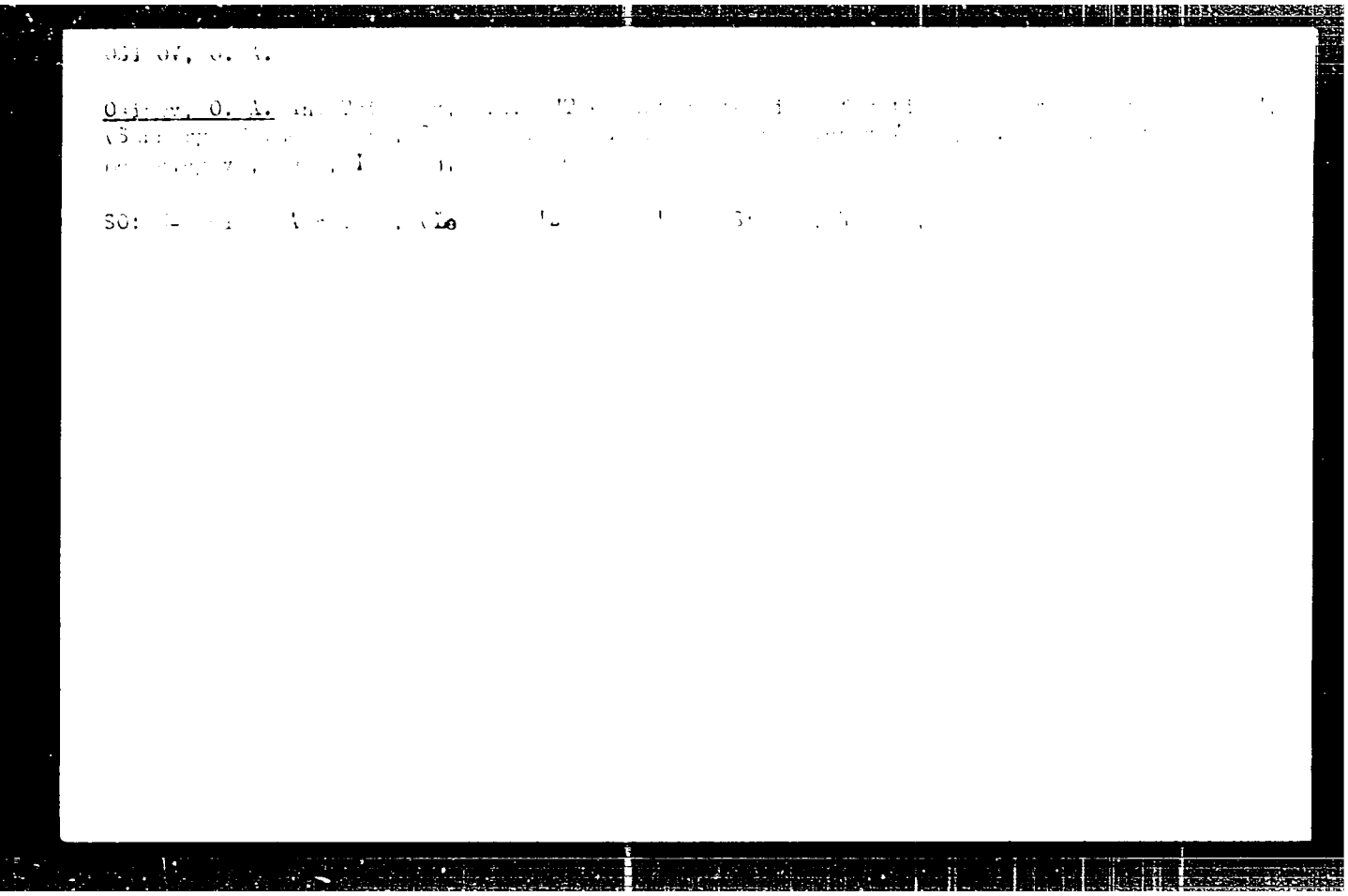
Title : An interesting profession

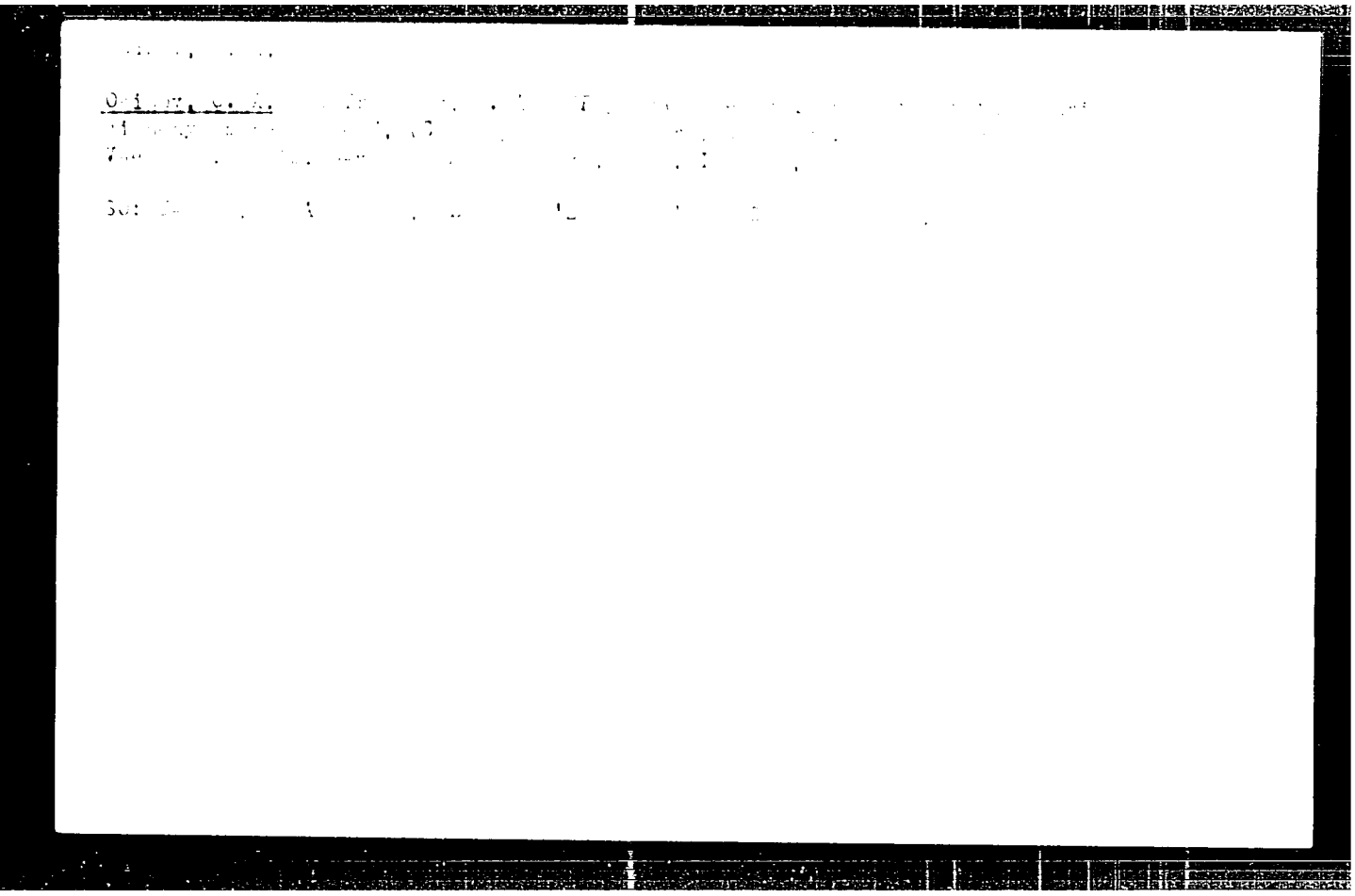
Periodical : Radio,3, 7, Mar, 1954

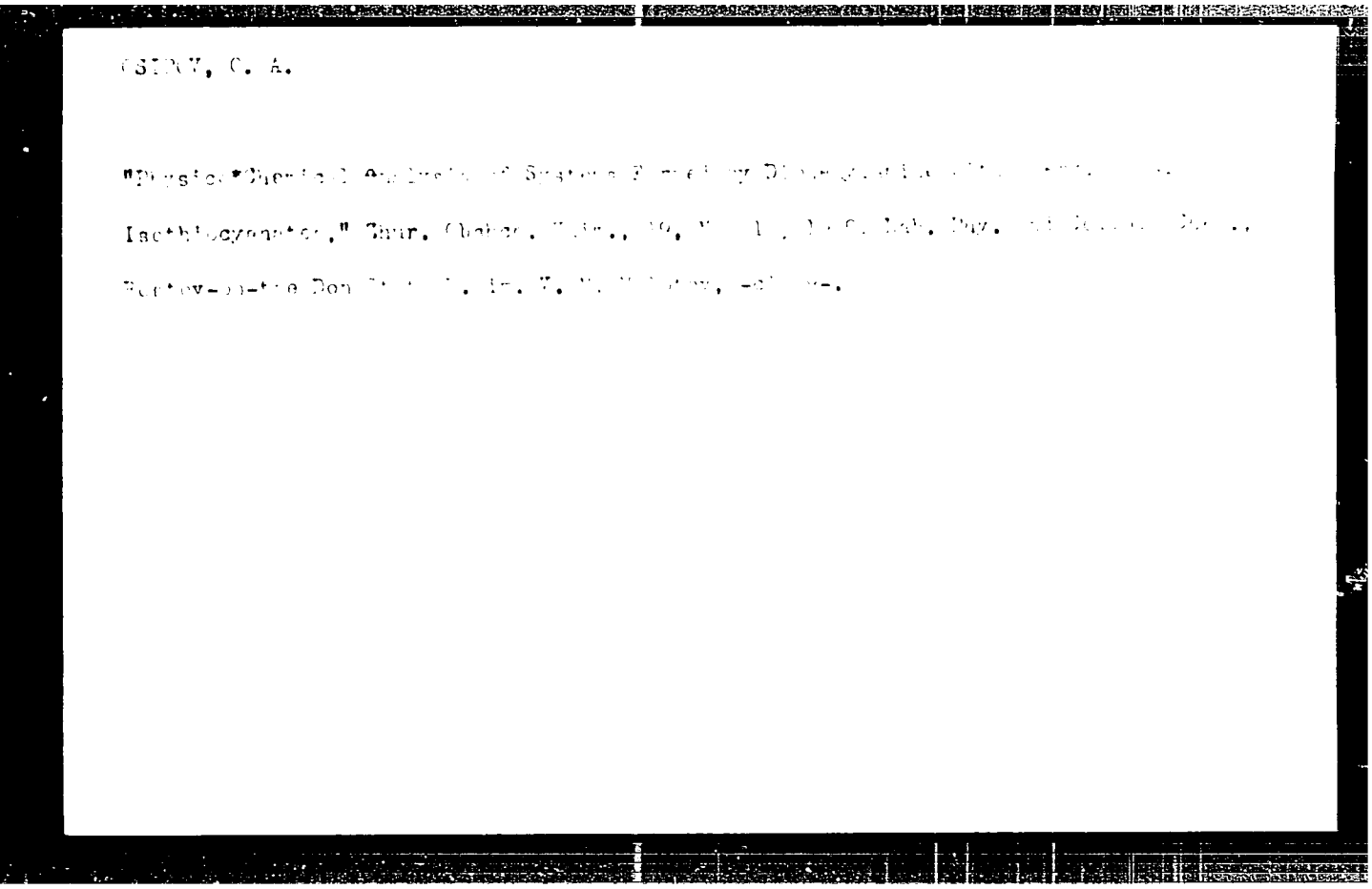
Abstract : About a distinguished radio-technician, Evstolia Mikhilovna Kukonkova, who chose the translation and modulation of radio programs for her work and considered it a very interesting profession.

Institution : .....

Submitted : .....







OSIPOV, O. A.

Chemical Abst.
Vol. 48 No. 4
Feb. 25, 1954
General and Physical Chemistry

Surface tension and total surface energy of rational binary liquid systems. O. A. Osipov and N. A. Trifonov (Rostov State Univ.). *J. Gen. Chem. U.S.S.R.* 21, 899-904(1951) (Engl. translation); *Zhur. Obshchei Khim.* 21, 817-23 (1951); cf. *C.A.* 44, 1787*f*.—Surface-tension (σ) values at 2 or 3 temps. were detd. for several compns. in each of 4 binary systems: I, allyl mustard oil-ethylaniline; II, phenyl mustard oil-diethylamine; III, allyl mustard oil-*m*-toluidine; and IV, phenyl mustard oil-aniline. In system I the components react to form allylethylphenylthiourea (V). Each isotherm consists of 2 branches intersecting in a max. at 50 mole %, corresponding to the compn. of V. The data indicate V is undissocd. in the liquid phase. Deviations of the isotherms from linearity increase with temp. The shape of the isotherms show reaction of V with the oil, but not with the amine. The relative temp. coeff., $\gamma = (1/\sigma_1)(\sigma_1 - \sigma_2)/(t_2 - t_1)$ passes through a min. at 50 mole %. Total surface energies calcd. from the Gibbs-Helmholtz equation are independent of temp. and exhibit a max. at 50 mole %. The other systems are qualitatively similar in physicochem. properties. The large deviations from additivity (50% at 30°, and 53% at 40° at the max.) of the isotherms of II indicate assocn. of the diethylphenylthiourea which is formed.

Bernard M. Zeffert

OSIPOV, O. A.

USSR/Chemistry - Titanium Organic Compounds Jul 52

"The Physicochemical Study of the Reaction of Titanium Tetrachloride With Isoamyl Acetate," O. A. Osipov, V. Suchkov, Rostov-on-Don State U

"Zhur Obshch Khim" Vol 22, No 7, pp 1132-1136

A study was made of the viscosity, density, and elec cond of the system titanium tetrachloride-isoamyl-acetate, at temps of 60 and 70°. A comp was formed in the system with the comp, $TiCl_4 \cdot CH_3COOC_5H_{11}$, which was almost undissocd in the liquid phase. The relative heat coeffs of the viscosity and elec cond was computed.

229T34

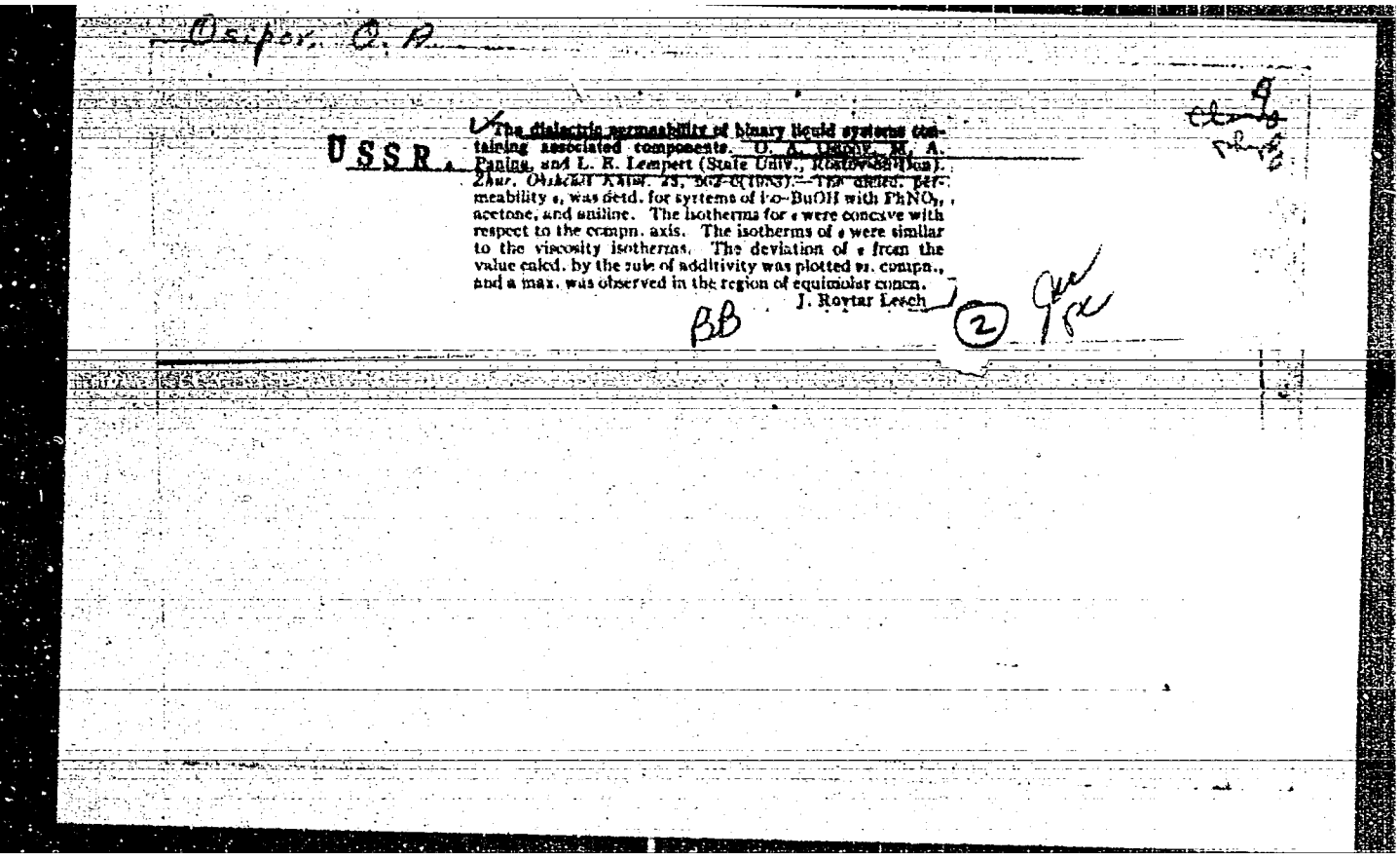
229T34

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001238

OSIPOV, O. A. and KRAVTSOV, YE.

Physico-Chemical Study of the Interaction of Titanium Chloride and Ethyl Formate, Page 216, Sbornik statey po obshchey khimii (Collection of Papers on General Chemistry), Vol I, Moscow-Leningrad, 1953, pages 762-766

Rostov on Don State U



Osipov, O. A.

USSR

The dielectric permeability of binary liquid systems containing associated components. O. A. Osipov, M. A. Panina, and L. K. Lempert (State Univ., Rostov-on-Don). Zhur. Obshchei Khim. 23, 903-6(1953).—The dielec. permeability ε was detd. for systems of i-o-BuOH with $PhNO_2$, acetone, and aniline. The isotherms for ε were concave with respect to the compn. axis. The isotherms of ε were similar to the viscosity isotherms. The deviation of ε from the value calcd. by the rule of additivity was plotted vs. compn., and a max. was observed in the region of equimolar concn.

J. Roytar Lesch

BB

(2)

SOV/137-57-11-22288

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 11, p 232 (USSR)

AUTHORS: Osipov, O.A., Feodos'yev, N.N.

TITLE: Determining the Latent Heat of Deformation of Copper Relative to Degree of Deformation (Opredeleniye skrytoy teploty deformatsii medi v zavisimosti ot stepeni deformatsii)

PERIODICAL: Uch. zap. (Rost. n/D un-t), Vol 20, Tr. khim.-fak., Nr 6, 1954, pp 79-82

ABSTRACT: Bibliographic entry

Card 1/1

Ostroy, O. A

USSR.

Physicochemical study of the reaction of titanium tetrachloride with ethyl acetate. Yu. A. Lysenko and O. A. Ostroy. *J. Gen. Chem. U.S.S.R.* 24, 49-51(1954)(Engl. translation). See *C.A.* 48 8104i. H. L. H.

OSIPOV, O.A.

USSR/Chemistry - Analysis

Card 1/1 Pub. 151 - 9/36

Authors : Lysenko, Yu. A., and Osipov, O. A.

Title : Physico-chemical investigation of the reaction between titanium tetrachloride and ethyl acetate

Periodical : Zhur. ob. khim. 24/1, 53-55, Jan 1954

Abstract : The viscosity, density and electrical conductivity of a $TiCl_4$ - $C_4H_8O_2$ system were measured at 97 and 102° temperatures. The viscosity, density and electrical conductivity isotherms of the binary system, are shown in graphs. The composition of the molecular compound, formed by this binary system, is described. Numerous experimental data show that the density of the investigated system is not of such importance as viscosity which makes it possible to establish the existing chemism between the components and to determine the composition of the obtained compound. Four USSR references (1940-1953). Graphs.

Institution : The V. M. Molotov State University, Rostov/Don

Submitted : June 21, 1953

OSIPOV, G A.

USSR/Chemistry

Card 1/1 : Pub. 151 - 10/42

Authors : Feodosyev, N. N.; Osipov, O. A.; and Morozova, G. K.

Title : Heat of blending dioxane with water

Periodical : Zhur. ob. khim. 24/9, 1540-1542, Sep 1954

Abstract : The surface tension, density, vapor pressure, index of refraction and solidification point of the dioxane-water system were investigated. The heats of blending dioxane with water were measured in a calorimeter with isothermal shell. The isothermal curve, representing the blending heats for the dioxane-water system, was found to have positive as well as negative sections which is explained by the formation of a molecular hydrate type compound between the water and the dioxane and decomposition of the water. Four references: 2-USSR; 1-US\ and 1-German (1907-1949). Table; graph.

Institution : State University, Rostov/Don

Submitted : May 17, 1954

OSIPOV, O. A.
USSR/Chemistry

Card 1/1

Authors : Lysenko, Yu. A., Osipov, O. A., and Feodosy'ev, N. N.

Title : Blending Temperatures for Systems Formed by a Titanium Tetrachloride with Ethylacetate and n-Butylacetate.

Periodical : Zhur. Fiz. Khim. Vol. 28, Ed. 4, 700-702, Apr 1954

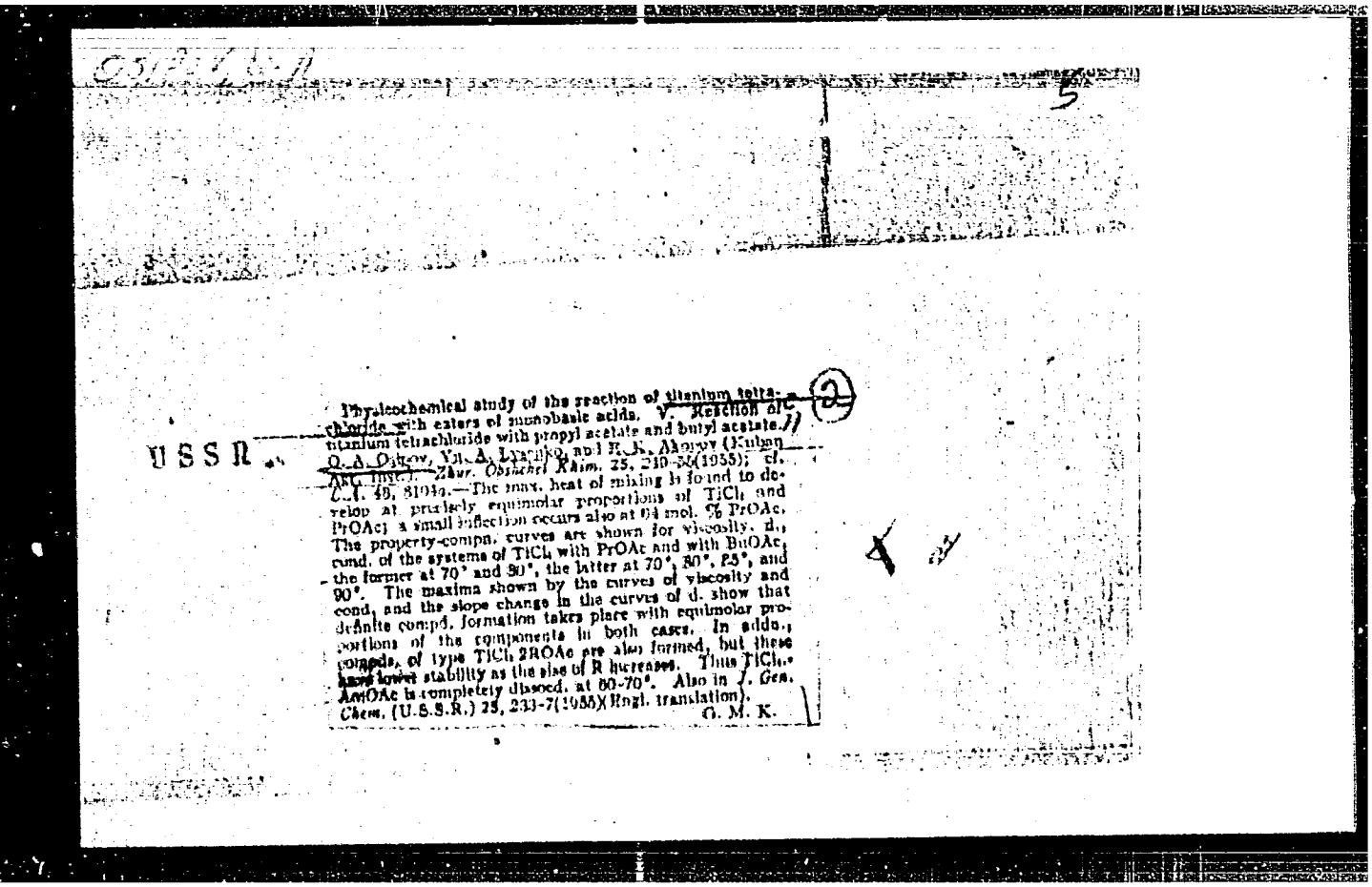
Abstract : Formulas and calculation of the blending temperatures for $TiCl_4$ - $CH_3COOC_2H_5$ and $TiCl_4$ - $CH_3COOC_4H_9$ systems. According to the author of this article the heat effect in the $TiCl_4$ - $CH_3COOC_2H_5$ system is significantly higher than in the $SnCl_4$ - $CH_3COOC_2H_5$ system (8.93 kcal/mole as compared to 5.67 kcal/mole). Six references; graphs.

Institution : Rostov State University.

Submitted : June 26, 1953

Ostrov, Q. D. K.

The surface layer of liquid systems. VII. Surface stratification and the volume properties of solutions of binary systems. B. Ya. Tsiklis and Q. A. Ostrov (V. M. Molotov Univ., Rostov). *Kolloid. Zhur.* 17, 51-8 (1955); cf. *C.A.* 48, 9030c. The activity coeffs. of the 2 components of a binary system may, in the surface layer, be different from those in bulk; thus, the soly. in the surface layer may be incomplete also at temp. T at which the miscibility in bulk is unlimited; hence, de-mixing in a surface layer may occur at any temp. Contrary to Starodubets, *et al.* (*C.A.* 47, 9103b), surface de-mixing need not have any effect on the vol. properties of the soln. O_2NPh and hexane (I) show a sharp max. of foam persistence (after shaking) at 60 mol. % I. The surface tension σ of O_2NPh and I decreases nearly linearly when T rises, but σ of 20-30% solns. of I in O_2NPh is almost independent of T (between 0° and 50°). Presumably, surface de-mixing takes place in these solns. The temp. coeff. of the dielec. const. ϵ of I-O_2NPh mixts. was detd. between 10° and 40°; it showed no anomaly. Also the variations with T of ϵ and d. of $PhNH_2$-cyclohexane mixts. and of d. of a mesitylene-MeOH mixt. were normal. Also in *Colloid J.* (U.S.S.R.) 17, 51-5(1955)(Engl. translation). J. J. Bikerman



USSR

Physicochemical study of the reaction of titanium tetrachloride with esters of monobasic acids. V. Reaction of titanium tetrachloride with propyl acetate and butyl acetate. O. A. Osipov, Yu. A. Lyashko, and E. K. Akopov (Kuban Agric. Inst.). *Zhur. Obshchei Khim.* 25, 230-36(1955); cf. *C.A.* 49, 8104a.—The max. heat of mixing is found to develop at precisely equimolar proportions of $TiCl_4$ and PrOAc; a small inflection occurs also at 04 mol. % PrOAc. The property-compn. curves are shown for viscosity, d., cond. of the systems of $TiCl_4$ with PrOAc and with BuOAc, the former at 70° and 90°, the latter at 70°, 80°, 85°, and 90°. The maxima shown by the curves of viscosity and cond. and the slope change in the curves of d. show that definite compd. formation takes place with equimolar proportions of the components in both cases. In addn., compds. of type $TiCl_4 2ROAc$ are also formed, but these have lower stability as the size of R increases. Thus $TiCl_4 \cdot AmOAc$ is completely dissocd. at 60-70°. Also in *J. Gen. Chem.* (U.S.S.R.) 25, 233-7(1955)(Engl. translation).
G. M. K.

4

The dielectric permeability of binary liquid systems containing associated components. O. A. Gerpov, M. A. Parina, and L. E. Lempert. *J. Gen. Chem. U.S.S.R.* 25, 835–8(1955)(Engl. translation).—See *C.A.* 49, 11341a.
H. L. H.

(2)

OSIPOV, O.A.; PANINA, M.A.; LEMPERT, L.E.

Dielectric constant of binary liquid systems containing associated components. Zhur.ob.khim. 25 no.4:662-666 Ap '55. (MLRA 8:?)

1. Rostovskiy-na-Donu Gosudarstvennyy universitet.
(Systems (Chemistry)--Electric properties)

OSIPOV, O.A.

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

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 3757

Author : Osipov O.A., Senenov A.D.
Title : Molecular Weight of Some Complex Compounds of Titanium Tetrachloride.

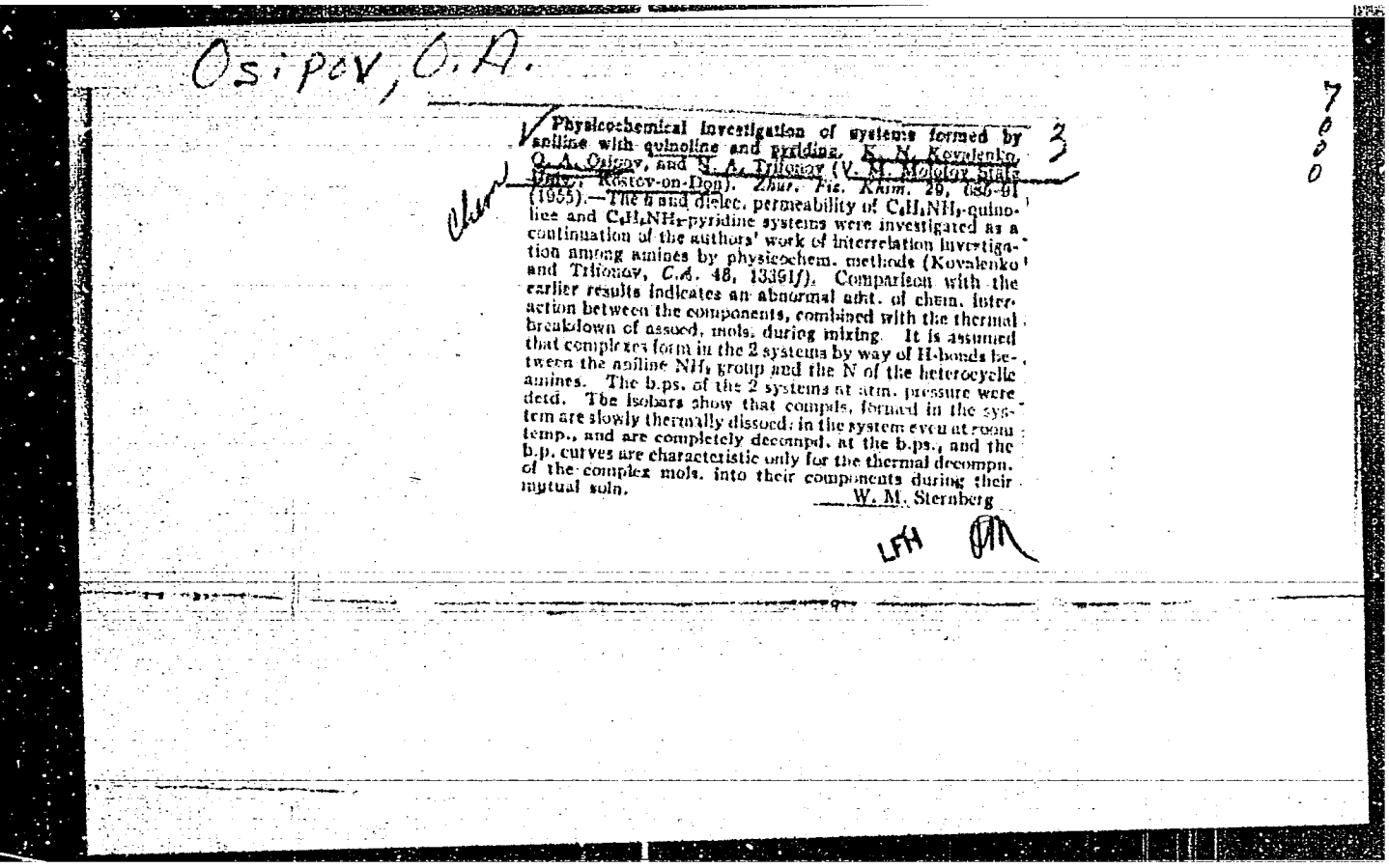
Orig Pub : Zh. obshchey khimii, 1956, 25, No 11, 2059-2062

Abstract : Composition-properties diagrams plotted on the basis of results of determination of viscosity, conductance, fusibility and density of the systems $TiCl_4$-$C_3H_7COOC_4H_9$ (I), $TiCl_4$-$C_3H_7COOC_5H_{11}$ (II) and $TiCl_4$-$CH_2CLCOOC_2H_5$ (III), indicate the formation of thermally stable compounds of the 1:1 type (RZhKhim, 1955, 11279). Cryoscopic determinations of the molecular weights of the complexes were carried out in benzene with equimolecular proportions of

Card 1/3 - 105 -

Osipov, O. A.

The dipole moments of some complex compounds of quadrivalent titanium and tin. VII. O. A. Osipov. J. Gen. Chem. U.S.S.R. [illegible] — See C.A. 50, 11748f. [illegible]



Osipov, O. A.

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Physicochemical investigation of systems formed by aniline with quinoline and pyridine. K. N. Kovalenko, O. A. Osipov, and N. A. Trifonov (V. M. Molotov State Univ., Rostov-on-Don). *Zhur. Fiz. Khim.* 29, 685-91 (1955).—The n and dielec. permeability of $C_6H_5NH_2$-quinoline and $C_6H_5NH_2$-pyridine systems were investigated as a continuation of the authors' work of interrelation investigation among amines by physicochem. methods (Kovalenko and Trifonov, *C.A.* 48, 13391*f*). Comparison with the earlier results indicates an abnormal nat. of chem. interaction between the components, combined with the thermal breakdown of assocd. mols. during mixing. It is assumed that complexes form in the 2 systems by way of H-bonds between the aniline NH_2 group and the N of the heterocyclic amines. The b.ps. of the 2 systems at atm. pressure were detd. The isobars show that compds. formed in the system are slowly thermally dissocd. in the system even at room temp., and are completely decompd. at the b.ps., and the b.p. curves are characteristic only for the thermal decompn. of the complex mols. into their components during their mutual soln.

W. M. Sternberg

LFH

OSIPOV, O.A.

Interrelation among surface tension, binding energy, and ionic radii. O. A. Osipov (State Univ., Rostov-on-Don). *Doklady Akad. Nauk S.S.S.R.* 102, 1171–2(1955).—For the melts of alkali halides, and halides of elements of the fifth group of the periodic system, there is a linear relation among the surface tension and the energy of ordinary binding E, the energy of the crystal lattice U, and the ionic or covalent, element radii r. At temps. near the crystn. point these factors are nearly identical for the liquid and the cryst. states (Ya. I. Frenkel, *Kineticheskaya Teoriya Zhidkostei* 1945). These relations are made evident for the series $LiBO_2$-$NaBO_2$-KBO_2 (at 1200°); Li_2SO_4-Na_2SO_4-K_2SO_4-Rb_2SO_4 (at 1100°); NaF-KF-RbF-CsF (1000°); LiCl-NaCl-KCl-RbCl-CsCl (807°); $NaNO_3$-KNO_3-$RbNO_3$-$CsNO_3$ (500°); NaI-KI-RbI-CsI (800°); NaCl-NaBr-NaI; KCl-KBr-KI; RbF-RbCl-RbBr-RbI; CsF-CsCl-CsBr-CsI; PX_3 (X = Cl, Br, I) (at 75°). The same relations, however, are valid also for the series C_6H_5X (X = F, Cl, Br, I) (at 20°); $CH_3C_6H_4X$ (X = Cl, Br, I) (80°); C_6H_4X (at 20°); C_6H_3X (at 20°). The laws discussed are analogous to the lyotropic series $Na^+ > K^+ > Rb^+ > Cs^+$ for the salting-out effects of these ions in aq. solns.; the corresponding series for the anions is $BO_3^- > SO_4^{2-} > Cl^- > Br^- > NO_3^- > I^-$.

W. Ritel

Chem. Org., Physical, + Colloid Chem.

Physicochemical studies of the reaction of titanium tetrachloride with esters of monobasic acids. X. Fusibility of the systems: titanium tetrachloride esters of monobasic acids. Yu. A. Lysenko, O. A. Osipov, and E. K. Akopov (Kuban Agr. Inst., [illegible]). Zhur. Neorg. Khim. 1, [illegible] 3, [illegible]-41(1956); cf. C.A. 49, 9395h. Compd. formation was observed between $TiCl_4$ and acetate, chloroacetate, and formate esters. The existence of the compds. was verified by a max. in the $TiCl_4$-ester m.p. curve. In each case the max. occurred at 50 mol. % $TiCl_4$. The compds. and their m.ps. are, resp.: $TiCl_4$.MeOAc 145.0°, $TiCl_4$.EtOAc 102.5°, $TiCl_4$.PrOAc 78.0°, $TiCl_4$.BuOAc 90.5°, $TiCl_4$.iso-BuOAc 98.0°, $TiCl_4.CH_3COOCH_2CH_2CH(CH_3)_2$ 65.3°, $TiCl_4$.EtOOCH 60.0°, $TiCl_4$.BuOOCH 30.2°, $TiCl_4.HCOOCH_2CH(CH_3)_2$ 87.0°, $TiCl_4.HCOOCH_2CH_2CH(CH_3)_2$ 51.0°, $TiCl_4$.n-$ClCH_2$COOBu 72.0°, $TiCl_4.ClCH_2COOCH_2CH(CH_3)_2$ 107.3°, $TiCl_4.ClCH_2COOCH_2CH_2CH(CH_3)_2$ 74.0°, $TiCl_4$.EtCOOEt 110.2°, $TiCl_4$.PrCOOEt 103.0°.

C. H. Fuchsman

OSIPOV, O. A.

The dipole moments of some complex compounds of quadrivalent titanium and tin. VII. O. A. Osipov (State Univ., Rostov-on-Don). *Zhur. Obshchei Khim.* 26, 322-8 (1956); cf. *C.A.* 48, 8104a.—The dipole moments of the following compds. were detd.: $TiCl_4 \cdot C_2H_5COOC_2H_5$ (4.52D.), $TiCl_4 \cdot C_2H_5COOC_4H_9$ (4.46D.), $TiCl_4 \cdot C_2H_5COOC_5H_{11}$ (4.37D.), $SnCl_4 \cdot 2C_2H_5COOC_2H_5$ (6.52D.), $SnCl_4 \cdot 2C_2H_5COOC_4H_9$ (6.44D.), and $SnCl_4 \cdot 2C_2H_5COOC_5H_{11}$ (6.38D.). The high dipole moment shows that complex formation for these salts with esters increases the polarity. A comparison of μ for the ester alone and for the complex shows that their difference (for both 1:1 and 1:2 ratios) remains almost const. and that the chain length has little effect. For the Ti complexes the difference is 2.5–2.6D. and for Sn 4D. It is concluded, on the basis of the measurement of the dipole moments, that the complexes of $SnCl_4$ with 2 ester mols. have a cis structure. J. Rovtar Leach

OSIPOV, O. A.

The dipole moments of some complex compounds of quadrivalent titanium and tin. VII. O. A. Osipov. *J. Gen. Chem. U.S.S.R.* 20, 343-8(1950)(English translation). —See *C.A.* 50, 11748*f*.

H. M. K.

OSIPOV, O.A

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

Abs Jour : Referat Zhur - Khimiya, No 3, 1957, 7492

Author : Osipov, O.A. and Shelomov, I.K.
Title : Dialectric Constant and Average Dipole Moment of Binary Liquid Systems

Orig Pub : Zh. fiz. khimii, 1956, Vol 30, No 3, 608-615 (English summary)

Abstract : The dialectric constants of the following binary systems have been investigated over a wide range of concentrations: quinamine-animine, pyridine-animine, acetic acid-dioxane, animine-diethyl ether, chloroform-diethyl ether, animine-dioxane, o-toluidine-dioxane. An attempt is made to formulate a theoretical basis for the impirical formula of Ya.K. Syrkin (Dokl. AN SSSR, 1942, Vol 35, 45) and the possibility of its application to binary liquid systems in which chemical reaction occurs between the

Card 1/2 - 115 -

Ostrov, O. A.

Distr: 4E4j

Dipole moments of $ZrCl_4$, $ZrBr_4$, and $TiCl_4$ in dioxane. O. A. Osipov and Yu. N. Kletnik. *Zhur. Obshch. Khim.* 7, 2406-9(1937).—Concns. in dioxane, dielec. const., and d_4^{25}, resp., for $ZrCl_4$ are: 0.00470 *M*, 2.443, 1.0420; 0.00394 *M*, 2.404, 1.0406; 0.00300 *M*, 2.358, 1.0389; 0.00240 *M*, 2.326, 1.0377; 0.00184 *M*, 2.231, 1.0361; for $TiCl_4$: 0.00208 *M*, 2.239, 1.0363; 0.00170 *M*, 2.232, 1.0358; 0.00141 *M*, 2.227, 1.0353; 0.00126 *M*, 2.224, 1.0351; 0.00103 *M*, 2.220, 1.0348; 0.00096 *M*, 2.218, 1.0347; for $ZrBr_4$ 0.00274, 2.290, 1.0434; 0.00229 *M*, 2.275, 1.0420; 0.00183 *M*, 2.260, 1.0402; 0.00137 *M*, 2.246, 1.0384; 0.00106 *M*, 2.235, 1.0372. The deformational polarization (in cc.), molar polarization at infinite dilu. (in cc.), and dipole moment (D.) are, resp., for $ZrCl_4$, 44.33, 775, 5.94; $TiCl_4$, 40.90, 291, 3.48; and $ZrBr_4$, 53.03, 502, 4.68. The indication from these data that the halides form complexes with the solvent was confirmed by the synthesis of the following new compds.: $ZrCl_4 \cdot 2C_4H_8O_2$, white cryst. hydrolyzes in air, m. about 193°; $TiCl_4 \cdot 2C_4H_8O_2$, yellow, cryst., m. 182°; and $ZrBr_4 \cdot 2C_4H_8O_2$, m. 190°. The stability of these types of complexes formed by tetrahalides from the elements of Group IV increases with increase in the covalent radius of the central atom. 15 references. A. P. Kotlobay

Osipov, O. A.

USSR/Physical Chemistry - Molecule, Chemical Bond. B-4

Abs Jour : Referat Zhur - Khimiya, No 1, 1958, 164

Author : O.A. Osipov, G.S. Samofalova, Ye.I. Glushko.
Inst : -
Title : Dipole Moments of Complex Compounds of Tin Tetrachloride with Some Organic Acids.

Orig Pub : Zh. obshch. khimii, 1957, 27, No 6, 1428-1433.

Abstract : The dipole moments and μ (in D) in benzene of the molecular compounds of $SnCl_4 \cdot 2CH_3COOH$ - 6.38; $SnCl_4 \cdot 2CH_2ClCOOH$ - 3.44; $SnCl_4 \cdot 2CCl_3COOH$ - 2.09; $[SnCl_4 \cdot 2CH_3COOH] \cdot CH_3COOH$ - 7.23; $[SnCl_4 \cdot 2CH_2ClCOOH] \cdot CH_2ClCOOH$ - 3.67; $SnCl_4 \cdot 3CCl_3COOH$ - 1.89; $SnCl_4 \cdot 2C_6H_5COOH$ - 5.73 and $[SnCl_4 \cdot 2C_6H_5COOH] \cdot C_6H_5COOH$ - 6.16 were measured. It was assumed that

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AUTHORS: Osipov, O. A., and Kletenik, Yu. B.

TITLE: Dipole Moments of the Complex Compounds of Zirconium Chloride with Compound Esters of Monobasic Acids XII (Dipol'nyye momenty kompleksnykh soyedineniy tetrakhlorida tsirkoniya s slozhnymi efirami odnoosnovnykh kislot XII).

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, Nr 11, pp. [illegible] (USSR).

ABSTRACT: The interaction of the tetrachlorides of tin and titanium with various organic compounds containing nitrogen and oxygen leads to the formation of complex molecules with high dipole-moments [1-3]. Such a high polarity of the complex compounds with $SnCl_4$ and $TiCl_4$ cannot alone be explained by a polarization-interaction and indicates the occurrence of a strongly polarized donor-acceptor-bonding. In this paper the authors give the results which they obtained in the determination of the dipole-moments of the complex compounds of zirconium chloride, ethyl- and isopropyl-formate, ethyl-, isopropyl-, isobutyl- and benzyl-acetate with the ethyl ester of [illegible] acid. It is shown that the interaction between zirconium chloride and the compound esters of monobasic acids leads to the formation of [illegible] compounds of high polarity. The dipole moments of the resulting [illegible] were

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Dipole Moments of the Complex Compounds of Zirconium Chloride [illegible]
Compound Esters of Monobasic Acids .II.

measured (in benzene). The change of the alcohol part in the ester has no influence upon the height of the dipole-moment in the complex, whereas the increase in the partial weight of the acid residue sharply reduces it. From this follows that the stability of the complex of the type $ZrCl_4 \cdot 2ROOCR_1$ in the solution is chiefly dependent on the quantity of the acid [illegible] corresponding to the monobasic acid. The complex compound of $ZrCl_4$ with two ester-molecules possesses a cis-structure.
There are 3 tables, and 12 references, 11 of which are Soviet.

SUBMITTED: November 23, 195[illegible].

AVAILABLE: Library of Congress.

1. Complex compounds-Dipole moments 2. Zirconium chloride-Dipole moments 3. Organic compounds-Dipole moments

Card 2/2

OSIPOV, O.A.; SHELOMOV, I.K. (Rostov-na-Donu)

The relation between the dipole moment and surface tension [with summary in English]. Zhur.fiz.khim.31 no.8:1756-1761 Ag '57. (MIRA 10:12)

(Dipole moments) (Surface tension)

OSIPOV, O.A.; LYSENKO, Yu.A.

Electrolysis of tetravalent titanium compounds of various monoprotic acid esters. Zhur. neorg. khim. 3 no.7:1605-1607 Jl '58. (MIRA 11:9)
(Esters) (Platinum organic compounds) (Electrolysis)

AUTHORS: Lysenko, Yu. A., Osipov, O. A. SOV/79-28-7-2/64

TITLE: The Investigation of the Conversion of Titanium Chloride With the Eters of Monobasic Acids (Issledovaniye vzaimodeystviya chetyrekhkhloristogo titana so slozhnymi efirami odnoosnovnykh kislot) XII. On the Decomposition of $TiCl_4$.E Compounds(XII. O razlozhenii soyedineniy $TiCl_4$. E)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 7, pp. 1724 - 1727 (USSR)

ABSTRACT: Earlier (Refs 1-6) the author found that the titanium chloride dissolved in the esters of monobasic acids forms compounds of the composition $TiCl_4$.E and $TiCl_4$.2E(where E denotes the ester molecule), with the products $TiCl_4$.E in the liquid phase being stable within a wide temperature interval. Although the data obtained by the authors point to a very stable reaction of most of the esters to $TiCl_4$ (Refs 1-6) the data presented in papers (Refs 8-15) on the decomposition of the ethers and esters in the presence of aluminium halides (and other metal halides) permit to assume that similar reactions must take place

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with some ester compounds of titanium chloride. Proceeding from the experimental results concerning the decomposition of the aluminium esters (Refs 12 - 14) it may be assumed that the decomposition of titanium chloride with esters takes place in such a case where the ester reacting with it consists of a radical of a strong acid and an alcohol radical of minor electronegative character; this is especially the case with isopropyl formiate, benzyl formiate and others; with compounds of titanium chloride and the corresponding esters of trichloroacetic acid, where the tendency to decompose must be greater. According to the conceptions on the polarization it would have to be expected that of the compounds $TiCl_4$.2E, $TiCl_4$.E and $2TiCl_4$.E the two latter display the greatest tendency to decompose. Thus, the results of the conversion experiments of titanium chloride with the above mentioned esters are mentioned and the authors determined that the data of Demarcay (Ref 7) (Demarse) on the compounds $2TiCl_4$.E in liquid phase did not stand up to their checking. It was found that $TiCl_4$ with the

The Investigation of the Conversion of Titanium Chloride With the Esters of Monobasic Acids. XII. On the Decomposition of $TiCl_4$.E Compounds

SOV/79-28-7-2/64

esters of trichloroacetic acid and benzoic acid yields compounds of the composition 1:1. The presence of the compounds $2TiCl_4$.E in solid phase was proved as well as the instability of the binding of the second molecule of titanium chloride with the ester $TiCl_4$.E. There are 2 tables and 22 references, 18 of which are Soviet.

ASSOCIATION: Kubanskiy sel'skokhozyaystvennyy institut (Kuban' Agricultural Institute)

SUBMITTED: June 17, 1957

1. Titanium chlorides--Decomposition 2. Monobasic acid esters --Chemical reactions

Card 3/3

5(4), 5(3)
AUTHORS: Osipov, O. A., Parina, M. A. SOV/76-32-10-10/33

TITLE: The Dielectric Polarization of Systems Composed of Two Liquids (Dielektricheskaya polyarizatsiya sistem, sostavlennykh iz dvukh polyarnykh zhidkostey)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol 32, Nr 10, pp 2287-2293 (USSR)

ABSTRACT: In a previous paper (Ref 1) an equation (A) was given that brings into relation the dielectric constant of the pure polar liquid with the dipolar moment. By a modification (B) this equation may be used for the determination of the dipolar moment of a polar substance in the polar solvent. The present paper gives experimental prove of the applicability of the equation (B) for binary systems consisting of polar components. The method of determination as well as the purification technique of the substances to be investigated has already been described (Refs 2-4). Diethyl ether and methyl benzoate were used as the solvents in which the dipolar moments of nitro-benzene and methyl-ethyl ketone were determined. The dipolar moment of nitro-benzene in diethyl ether is 4,06±0,03 D and in methyl benzoate 3,96±0,04 D,

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The Dielectric Polarization of Systems Composed of Two Liquids

and that of the methyl-ethyl ketone in ether is 2,75±0,02 D and in methyl benzoate 2,76±0,02 D. The dipolar moments of quinoline and pyridine in dimethyl aniline and of chlorobenzene in bromo-benzene were also determined. The results given in tables prove that the equation (B) may be used for such determinations. It may, however, not be used for the determination of the dipolar moment of dissolved substances that react with the solvent. This was proved with the systems chloroform - diethyl ether, aniline - quinoline, acetic acid - dioxane, aniline - diethyl ether, aniline - pyridine, chloroform - quinoline, aniline - dioxane, o-toluidine - dioxane, chloroform-acetone, and chloroform - dioxane, as the deviations of the polarization and of the dipolar moments were obtained from the additive value (around 10-30%). In this way the equation (B) can, however, give an explanation in physical - chemical analyses of liquid systems. Using data of the paper by I. A. Sheka and K. F. Karlysheva (Ref 18) and calculating the dipolar moment according to Debye (Debay) (Ref 19) the authors found with nicotine and chlorobenzene as examples that the orientation polarization, calculated according to equation (A), varies linearly with the temperature. There are 4 tables and 19 ref-

SOV/76-[illegible]

The Dielectric Polarization of Systems Composed of Two Liquids

[illegible] erences, [illegible] of which are Soviet.

ASSOCIATION: Gosudarstvennyy [illegible], R[illegible] (R[illegible] State University)

SUBMITTED: April [illegible]

Card 1/1

5(4)
AUTHORS: Deryagin, B. V., [illegible]

TITLE: On the Problem of the Hydration of Ions in Aqueous Solutions of Electrolytes

PERIODICAL: Doklady Akademii nauk SSSR, 1957, Vol 112, Nr 1, pp [illegible] (USSR)

ABSTRACT: D. Bernal and R. Fowler (Ref 1) and also O. Ya. Samoylov (Ref 2) set out the question of different [illegible] different number of the translatory [illegible] nearest water molecules. The multi-charged ions [illegible] clarify its influence on the intensity of the [illegible] large ions only slightly intensify it, i.e. the small ions intensify the orientation of the H2O in water, [illegible] large ions cause a decrease of exactly this [illegible] phenomenon is called "orientation dehydration"; it can be discussed according to the electrostatic theory of [illegible] state. The authors believe an approximate [illegible] internal field E in any point of the solution [illegible] temperature, E ~ 4,5.10^8 CGS. If the water [illegible] charged ion, the energy state of [illegible]

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SOV/20-122-1-[illegible]

On the Problem of the Hydration of Ions in Aqueous Solutions

[illegible] only in the following case: The force with which the ion acts upon the surrounding molecules, is equal to the force with which the surrounding molecules (naturally without changing the degree of their orientation) act upon the ion (this means an equilibrium of the forces). In other words, the field strength caused by the ion at the centers of the surrounding molecules must be equal to the internal field strength E. For $E_{ion} > E$ there will be a positive hydration, and for $E_{ion} < E$, a negative one. E_{ion} denotes the field strength of the ion. A formula is deduced for the critical radius of the ion where the positive hydration becomes negative. An expression is given also for the effective radius of the water molecule. Finally, the authors calculate the additional energy of the orientation which is transmitted to the ion to the nearest molecules. The values of Δu (additional energy of the orientation of the molecule in the field of the ion) agree well with the experimental data. There are 1 table and 11 references, 11 of which are S viet.

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SOV/20-122-3-29/

On the Problem of the Hydration of Ions in Aqueous Solutions

ASSOCIATION: Rostovskiy-na-Donu gosudarstvenyy universitet (Rostov-na-Donu State University)

PRESENTED: May 17, 1958, by A. N. Frumkin, Academician

SUBMITTED: December 13, 1957

Card 3/3

SOV, [illegible]

5(4)
AUTHORS: Osipov, O. A., Sholomov, I. K.

TITLE: The Determination of the Instability Constant of Complex Compounds by Means of the Polarization Method (Opredeleniye konstanty neustoykosti kompleksnykh soyedineniy metodom polyarizatsii)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1959, Nr 2, pp 253-255 (USSR)

ABSTRACT: The quantitative relationship between the degree of dissociation of complex, of electrically nonconductive compounds and their orientation polarization is investigated. The equations for the orientation polarization are derived and found for the instability constant

$$k = \frac{1 - a'}{a'\left[1 - x_B(2 - a')\right]}$$

(x_B = concentration of the component B'. The polarization equations and the value of the instability constant were tested on binary systems yielding complex compounds by hydrogen bonds. Table 1 shows the values for chloroform diethyl ethe

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The Determination of the Instability Constant of Complex Compounds by Means of the Polarization Method

table 2 for chloroform - methyl acetate. The calculated instability constant amounts to 4.20 ± 0.2 for the first system, to 3.92 ± 0.12 for the second. There are 2 tables and 7 references, 5 of which are Soviet.

PRESENTED BY: Kafedra fizicheskoy i kolloidnoy khimii Rostovskogo-na-Donu gosudarstvennogo universiteta
(Chair of Physical and Colloid Chemistry, Rostov-na-Donu State University)

SUBMITTED: October 23, 1958

5.2620
5 (2), 5 (3)

67033

SOV/153-2-5-7/31

AUTHORS: Kletenik, Yu. B., Osipov, O. A

TITLE: Physico-chemical Examination of Several Complex Compounds of Zirconium Halides With Esters of the Monobasic Carboxylic Acids

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1959, Vol 2, Nr 5, pp 679-684 (USSR)

ABSTRACT: The authors continue their previous studies (Refs 5, 6) on the subject mentioned in the title. In the present paper, additional laws governing the change in polarity, stability and the formation temperature of the zirconium-chloride-bromide-iodide series are studied. The methods are described in references 5-8. Table 1 shows the measurement results of the dielectric constant (ε) and of the density (d) of benzene solutions of the complex $ZrCl_4 \cdot CH_3COOC_2H_5$ and the calculated values of its polarization (P). The polarization of the complexes $ZrHal_4 \cdot CH_3COOC_2H_5$ shows that these complexes do not dissociate in benzene into their components in a marked manner. The complexes $ZrHal_4 \cdot CH_3COOC_2H_5$ dissociate according to the scheme $ZrHal_4 \cdot 2Est. \rightleftharpoons ZrHal_4 \cdot Est. + Est.$ The tendency for dissociation increases in the order

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Physico-chemical Examination of Several Complex [illegible]SOV/[illegible]-5-7/31
Compounds of Zirconium Halides With Esters of the Monobasic Carboxylic Acids

chloride - bromide - iodide. Tables 2 and 3 list the measurement results of the dielectric permeability and the density of the benzene solution of several complexes of zirconium - bromide and zirconium - iodide as well as the polarization values computed for these complexes. A marked change in the polar properties of the complexes [illegible] cannot be determined in the transition from zirconium-chloride to -bromide and -iodide. The polarity of the [illegible] complexes is lower than that of the chloride complexes of zirconium. In the transition from zirconium-chloride to zirconium-bromide and zirconium-iodide, the influence of the alcohol radical of the ester rises which increases the polarity of the complexes. The complexes $ZrHal_4 \cdot 2CH_3COOC_2H_5$ have a cis configuration. The addition temperature of the 2nd ethyl acetate molecule to the zirconium halide is much lower than the addition temperature of the 1st molecule. The transition from zirconium-chloride to zirconium-bromide has little effect on the reaction temperature with ethyl acetate. There are 3 tables and 8 references, 7 of which are Soviet.

Card 2/3

5(2) SOV/78-4-7-6/44

AUTHORS: Osipov, O. A., Kletenik, Yu. B.

TITLE: The Dipole Moments of Halides of Zirconium, Titanium, Tin, and Aluminum in Dioxane (Dipol'nyye momenty galogenidov tsirkoniya, titana, olova i alyuminiya v dioksane)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 7, pp 1494-1497 (USSR)

ABSTRACT: In an earlier paper (Ref 1) the authors proved that in the elements of the fourth group a direct dependence exists on the ratio of the covalent radii of the complex-forming atom and of chlorine for the polarity of the tetrachlorides in dioxane. With a growing value of this ratio polarity increases. In the present paper the dipole moments of $AlBr_3$, AlJ_3, $SnCl_4$, SnJ_4, ZrJ_4 and $TiBr_4$ in dioxane are measured. The values for the dielectric permeability and for the density of the aforementioned compounds (at 20°) are given in tables 1 and 2. Table 3 contains the data concerning the dipole moments in dioxane of the halides of Hg, Al, Ti, Zr, Sn and As as measured by the authors or available in publications. The following was found: For

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The Dipole Moments of Halides of Zirconium, Titanium, Tin, and Aluminum in Dioxane

SOV/78-4-7-6/44

$AlBr_3$ - 3.30D, AlJ_3 - 4.98D, $SnCl_4$ - 5.10D, $SnBr_4$ - 4.13D, SnJ_4 - 1.55D, ZrJ_4 - 5.36D, $TiBr_4$ - 5.05D. The polarity of aluminum halides increases in dioxane in the series Cl - Br - J; that of tin halides decreases in the same direction. The dipole moment of $ZrCl_4$ is higher than that of bromide and iodide. $TiBr_4$ has a higher dipole moment than $TiCl_4$. On the basis of published data and own measurements the following rule is assumed: The polarity of the halides of elements of the 2. and 3. group of the periodic system increases in the series Cl - Br - J, that of the halides of the elements of the main subgroups of the 4. and 5. group decreases. The titanium subgroup occupies an intermediate position. There are 3 tables and 16 references, 11 of which are Soviet.

SUBMITTED: April 26, 1958

Card 2/2

AUTHORS: Kletenik, Yu. B., Sokolov, G. A., SOV/79-2[illegible]
Kravtsov, Ye. Ye.

TITLE: Coordination Compounds of Zirconium Tetrachloride With Esters of Monobasic Acids XV (Koordinatsionnyye soyedineniya tetrakhlorida tsirkoniya s slozhnymi efirami odnoosnovnykh kislot. XV

PERIODICAL: Zhurn. obshchey khimii, 1959, Vol. 29, Nr 1, pp. [illegible] USSR

ABSTRACT: In the previous paper (Ref 1) dealing with the complex compounds of zirconium tetrachloride with esters of monobasic acids it was shown that the formation of the complexes of the type $ZrCl_4 \cdot 2ROOCR$, is accompanied by an intensification of the polar properties. In such complex compounds zirconium has the coordination number 8 which is characteristic for this element. According to Sidgwick (Ref 2) it shows coordination numbers of the order 6, 7, 7 and 8 in its complex compounds. It is the aim of the present paper to investigate the present complexes where zirconium has the minimum coordination number five. Therefore, compounds of the composition $ZrCl_4 \cdot ROOCR$, were investigated in benzene solution as pre-

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Coordination Compounds of Zirconium Tetrachloride With Esters of Monobasic Acids

tive method, and with respect to the polar and ... properties. The determination method of the ... molecular weights and the partial ... had already been described in an earlier paper ... The following complexes were separated and analyzed: $ZrCl_4 \cdot HCOOC_2H_5$, $ZrCl_4 \cdot HCOOC_3H_7$, ... $ZrCl_4 \cdot CH_3COOC_2H_5$ and ... were determined ... It was ... the partial weight of the acid radical ... the ... of the complex decreases. The molecular weights of the above-mentioned complexes were determined according to the cryoscopic method. The cause for the tendency of the complexes towards association was explained. The triple complexes $ZrCl_4 \cdot HCOOC_2H_5 \cdot C_6H_6$ and $ZrCl_4 \cdot HCOOC_2H_5 \cdot C_6H_5CH_3$ were also separated and analyzed. There are 12 tables and 8 references, 4 of which are Soviet.

ASSOCIATION: Rostovskiy gosudarstvennyy universitet (Rostov State University)

Card 2/3

ABSTRACT The complex formation between stannic chloride ... alcohol had been investigated by ... P. Pfeiffer synthesized compounds of the ... $SnCl_4 \cdot 2CH_3OH$ and $SnCl_4$ ... and ... Schnabel investigated the complex ... of the type $SnCl_4 \cdot 2R \cdot H$ (Ref 3). The electric conductivity ... determination of viscosity of the system $SnCl_4$ - ... pointed to the presence of two complex compounds $SnCl_4 \cdot 2C_2H_5OH$ and $SnCl_4 \cdot 4C_2H_5OH$ (Ref 4). A. W. Laubengayer and ... Smith showed by the aid of infrared absorption spectra that $SnCl_4$

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Dipole Moments of the Complex Compounds of Stannic Chloride with Some Aliphatic Alcohols. XVII

SOV/

with C_2H_5OH leads to compound $SnCl_4 \cdot 2C_2H_5OH$ (Ref

R. A. Ford an H. S. Marschall confirmed the complex $SnCl_4 \cdot 2CH_3OH$ by the aid of ultraviolet and infrared spectra (Ref 6). Recently, Yu. N. Vol'nov investigated by the cryoscopic method the reaction of $SnCl_4$ with aliphatic alcohols and ascertained the presence of molecular compounds of the type $SnCl_4 \cdot 2ROH$ (Ref 7). In the present paper the authors specify the results of their determination of the dipole moments in complex compounds, which were obtained by the reaction of stannic chloride with methyl-, n.butyl, isobutyl, and isoamyl alcohol, from the composition $SnCl_4 \cdot 2ROH$ and $\left[SnCl_3 \cdot OR \cdot 2HR\right]_2$. On the basis of the dipole moment values of all mentioned complex compounds a cis-structure can be ascribed to them. It was shown that their dipole moments do not depend on the lenght of the alcohol radical. The dipole moments of the following complex compounds were determined.

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Dipole Moments of the Complex Compounds of Stannic Chloride with Some Aliphatic Alcohols. XVII

$\left[SnCl_3 \cdot OC_2H_5 \cdot OHC_2H_5\right]_2$, $\left[SnCl_3 \cdot OC_4H_9 \cdot OHC_4H_9\text{-n}\right]_2$, $\left[SnCl_3 \cdot OC_4H_9 \cdot OHC_4H_9\text{-iso}\right]_2$, and $\left[SnCl_3 \cdot OC_5H_{11} \cdot OHC_5H_{11}\text{-iso}\right]_2$

The transition from $SnCl_4 \cdot 2ROH$ into $\left[SnCl_3 \cdot OH \cdot HR\right]_2$ is accompanied by a marked decrease in polarity. There are 10 tables and 10 references, 4 of which are Soviet.

ASSOCIATION: Rostovskiy-na-Donu gosudarstvennyy universitet (Rost v-na-D nu State University)

SUBMITTED: January 23, 1958

Card 3/3

5 (4)

AUTHORS: Osipov, O. A., Kletenik, Yu. B. SOV/79-29-4-71/77

TITLE: Physico-chemical Investigation of the Reaction of Zirconium Chloride With Esters of the Monobasic Acids. III. (Fiziko-khimicheskoye issledovaniye vzaimodeystviya khlorida tsirkoniya so slozhnymi efirami odnoosnovnykh kislot.III)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 4, pp 1375 - 1382 (USSR)

ABSTRACT: Publications do not point out the existence of compounds which contain more than two ester molecules for one molecule $MeCl_4$, e. g. $MeCl_4 \cdot 3$ E (ester molecules) (Refs 1-8). It was the authors' task to investigate the reaction of the complexes of the composition $ZrCl_4 \cdot 2$ E with a third ester molecule in benzene. For this investigation more precise data on the molar state of the complexes $ZrCl_4 \cdot$ E and $ZrCl_4 \cdot 2$ E in benzene were necessary. The complicated character of the dependence of the polarization of the complexes $ZrCl_4 \cdot 2$ E on the concentration which was detected (Ref 9) and interpreted earlier by the

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Physico-chemical Investigation of the Reaction of Zirconium Chloride With Esters of the Monobasic Acids. III. SOV/79-29-4-71/7

authors was in the present paper based upon cryoscopic investigations of some of these components. The tables 1-3 and figure 1 give the cryoscopic data of the benzene solutions of the complexes $ZrCl_4 \cdot 2HCOOC_2H_5$, $ZrCl_4 \cdot 2CH_3COOC_2H_5$ and $ZrCl_4 \cdot 2C_3H_7COOC_2H_5$. The comparison of the results confirm the aforesaid assumption concerning the rôle of the concentration. It was found that the complexes of this composition dissociate considerably into the components in benzene solution. The series formiate-acetate--butyrate shows a clear tendency to dissociation. A scheme was suggested for this dissociation. By means of the cryoscopic method and by the determination of the dielectric constant was found that the zirconium chloride reacts in benzene with two ester molecules only. The dielectric constants of the complex computed from the data of polarization and to the cryoscopic method were equal. There are 1 figure, 7 tables, and 10 references, 10 of which are Soviet.

ASSOCIATION: Rostovskiy-na-Donu gosudarstvennyy universitet (Rostov-na-Donu State University)

SUBMITTED: January 23, 1958

Card 2/2

5(2) 5(4) SOV/79-29-5-4,75

AUTHORS: Kletenik, Yu. B., Osipov, O. A.

TITLE: Physical-Chemical Investigation of the Interaction of Zirconium Halides With Esters of Monobasic Acids (Fizike-khimicheskoye issledovaniye vzaimodeystviya galogenidov tsirkoniya so slozhnymi efirami odnoosnovnykh kislot). 4.Complexes of Zirconium Bromide (4.Kompleksy bromida tsirkoniya)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, No 5, pp 1423 - 1429 (USSR)

ABSTRACT: In the present paper the complexes formed from zirconium bromide and esters of monobasic acids were investigated by means of the method of the dielectric constant and cryoscopy in benzene as well as by preparation in a pure condition. The investigation methods and the purification of the reagents used were described previously (Refs 3 and 5). In tables 1-3 the dielectric constants, densities and molecular polarizations of the complexes $ZrBr_4 \cdot HCOOC_2H_5$, $ZrBr_4 \cdot CH_3COOC_2H_5$ and $ZrBr_4 \cdot C_3H_7COOC_2H_5$ in benzene are summarized. The dipole moments of these complexes

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(μ), the dipole moments of the esters contained in them (μ_1) and the difference ($\mu-\mu_1$) are given in table 4. The figure shows the cryoscopic data for the complexes $ZrBr_4 \cdot HCOOC_2H_5$, $ZrBr_4 \cdot CH_3COOC_2H_5$ as well as for $ZrBr_4 \cdot 2HCOOC_2H_5$ and $ZrBr_4 \cdot 2CH_3COOC_2H_5$ in benzene. The tables 5-9 contain data on the dielectric polarization of complexes $ZrBr_4 \cdot 2HCOOC_2H_5$, $ZrBr_4 \cdot 2CH_3COOC_2H_5$, $ZrBr_4 \cdot 2CH_3COOC_3H_7$, $ZrBr_4 \cdot 2CH_3COOC_4H_9$, $ZrBr_4 \cdot 2C_3H_7COOC_2H_5$. Table 10 presents data on the molecular polarization of the complex $ZrBr_4 \cdot 2CH_3COOC_2H_5$ in benzene solutions with different excess of ethyl acetate. The polarization was found to decrease in complexes of a $ZrBr_4 \cdot 2E$-composition (with the exception of ethyl formate) in the series zirconium chloride-bromide and the dissociation of the linkage with the second molecule of the ester was found to increase. The tendency of the $ZrBr_4 \cdot E$-complexes towards dimerization is less pronounced than in similar complexes of the zirconium chloride.

Physical-Chemical Investigation of the Interaction of Zirconium Halides With Esters of Monobasic Acids. 4. Complexes of Zirconium Bromide SOV/79-29-5-4/75

On the strength of the data concerning polarization and cryoscopy of the $ZrBr_4 \cdot 2CH_3COOC_2H_5$-complex its dissociation constant in benzene was calculated. It proved to be about $2 \cdot 10^{-2}$. The polarity was found to increase in $ZrBr_4$-complexes with ethyl acetate, propyl acetate and isobutyl acetate if the alcohol radical increases. The complexes $ZrBr_4 \cdot HCOOC_2H_5$, $ZrBr_4 \cdot CH_3COOC_2H_5$, $ZrBr_4 \cdot C_3H_7COOC_2H_5$ were separated and their melting points determined (108°, 164° and 157°). Also the mixed complex $ZrBr_4 \cdot HCOOC_2H_5 \cdot C_6H_6$ was prepared in pure condition. It was found that the benzene in it is bound to a considerably lower extent than in the similar $ZrCl_4 \cdot HCOOC_2H_5 \cdot C_6H_6$-complex (Ref 6). There are 1 figure, 10 tables, and 12 references, 9 of which are Soviet.

ASSOCIATION: Novocherkasskiy politekhnicheskiy institut (Novocherkassk Polytechnic Institute)

SUBMITTED: March 10, 1958

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5 (2)

AUTHORS: Osipov, O. A., Kletenik, Yu. B. SOV/[illegible]

TITLE: Physicochemical Investigation of the Reaction of Zirconium Halides With Esters of Monobasic Acids (Fiziko-khimicheskoye issledovaniye vzaimodeystviya galogenidov tsirkoniya so slozhnymi efirami odnoosnovnykh kislot). V. Complexes of Zirconium Iodide (V. Kompleksy yodida tsirkoniya)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 7, pp 2119 - 2124 (USSR)

ABSTRACT: In the present paper the results of the investigation of the polar properties of zirconium iodide complexes with esters of monobasic carboxylic acids in benzene are mentioned. The initial benzene solutions of the complexes were produced by dissolving zirconium iodide in benzene which contained an equivalent amount of ester. The dipole moments of the complexes $ZrJ_4 \cdot CH_3COOC_2H_5$, $ZrJ_4 \cdot 2HCOOC_2H_5$, $ZrJ_4 \cdot 2CH_3COOC_2H_5$, $ZrJ_4 \cdot 2CH_3COOC_3H_7$, $ZrJ_4 \cdot 2$ iso-$CH_3COOC_4H_9$ and $ZrJ_4 \cdot 2C_3H_7COOC_2H_5$ in benzene were determined. It was found that the increase of the acid radical of the esters reduces and the increase of the alcohol radical increases the polarity of the complexes investi-

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Physicochemical Investigation of the Reaction of Zirconium Halides With Esters of Monobasic Acids. V. Complexes of Zirconium Iodide

SOV/79-29-3-

gated. The dissociation constant of the complex $ZrJ_4 \cdot 2CH_3COOC_2H_5$ was approximately determined by means of the dielectric constant. In the complexes of zirconium tetrahalides with the esters of monobasic acids in the series of zirconium chloride, bromide, and iodide an increasing tendency of the complexes $ZrHal_4 \cdot 2E$ (E=ester) towards dissociation (separation of the second ester molecule), on the other hand, however, a decreasing tendency of the complexes $ZrHal_4 \cdot E$ towards association and an increasing influence of the alcohol radical were observed. The tendency of the complexes $ZrHal_4 \cdot 2E$ towards dissociation increases with the increasing acid radical. A comparison of the polarity data of the complexes $ZrHal_4 \cdot E$ and $ZrHal_4 \cdot 2E$ (7 tables) leads to the conclusion that all $ZrHal_4 \cdot 2E$ complexes investigated have cis-structure. There are 1 figure, 7 tables, and 8 Soviet references.

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Physicochemical Investigation of the Reaction of Zirconium Halides With Esters of Monobasic Acids. V. Complexes of Zirconium Iodide

SOV/79-29-7-3/83

ASSOCIATION: Novocherkasskiy politekhnicheskiy institut (Novocherkassk Polytechnic Institute)

SUBMITTED: June 10, 1958

Card 3/3

5 (4)

AUTHORS. Zhdanov, Yu. A., Dalgov, O. A., SOV/20 [illegible]
Shelepin, O. Ye., Kogan, V. A.

TITLE. The Dipole Moments and Structure of Some Derivatives of Perinaphthindenone

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 4, pp [illegible] (USSR)

ABSTRACT. Perinaphthindenone (I) and benzanthrone (IV) having weak or no characteristic ketone properties (Refs 1, 2) form very stable complex compounds with protonic and aprotonic acids (Refs 3, 4). This suggests a considerable polarity of the C = O bond. The instability of perinaphthindene and benzanthrene is expressed by their tendency of passing over into a stable oxidized state. The possible existence of a perinaphthindenyl cation, produced recently as a complex salt (Ref 5), had been presumed earlier (Ref 6) although the attempt at producing it had failed. The calculations of the binding energies in the perinaphthindene system by the method of molecular orbits showed that a cation-oid state with a 12π-electron assembly is energetically advantageous for this system. The system is aromatic if it has this assembly (Ref 7). Thus, an intraionic binding character of [illegible]

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can be assumed (according to Ref 8) for the carbonyl compounds of the perinaphthindene series where the negative charge is localized on the oxygen, while the positive one is distributed over the entire carbon system. An extensive analogy of the properties of tropone (II) and perinaphthindenone permits the reduction of its structure to that of perinaphthindenyl oxide (Ia), using also the analogy with tropil oxide (IIa) (see Diagram). For perinaphthindenone, a considerable dipole moment (in the magnitude of 4D) can be expected, all the more so as tropone has a moment between 4.17 and 4.30 D (Ref 9). To clarify this problem, the authors measured the dipole moments of perinaphthindenone and some of its derivatives. Table 1 presents the results showing that the dipole moment in dioxane is reduced by 0.72 D by the introduction of bromine into the nucleus of perinaphthindenone, and in benzanthrone by 1.12 D. The introduction of a benzonal nucleus reduces it by 0.5 - 0.6 D. On the other hand, the dipole moment increases by the introduction of an oxy group into position 7 of perinaphthindenone (V). An intramolecular cycle with a hydrogen bond is formed. Thus, the negative charge of the carbonyl oxygen is stabilized

The Dipole Moments and Structure of Some Derivatives of Perinaphthindenone SOV/20-126-4-23/6

and the C = C group is taken out of the conjugation with the ground skeleton of the molecule due to intracyclic exchange processes via the hydrogen bond. In contrast to the above, the tropolone has a dipole moment much too low (3.7 D) as compared with the tropone. The value of the dipole moment of the complex $C_{13}H_8OSbCl_6$ (8.50 D) permits assumptions as to its structure. [illegible] structure of perinaphthindenylium with a transition of the electron configuration of the antimony atom into the state d^2sp^3 (similar to $HSbCl_6$). The oxygen atom effects a peculiar binding between the cationoid radical of perinaphthindenylium and the antimony atom as one of the addenda of the latter, participating in the coordination sphere with [illegible] one of its valences. There are 1 table and 11 references [illegible] which are Soviet.

ASSOCIATION: Rostovskiy-na-Donu gosudarstvennyy universitet (Rostov-na-Don State University)

Card 3/4

OSIPOV, O.A.; [illegible], V.I.; KLETE[illegible], Yu.V.

[Manual on dipole moments] [illegible] po [illegible] [illegible]mentam. Rostov-na-Donu, Izd-vo Rostovskogo univ., [illegible]. [illegible] p. [illegible] A [illegible]

MINKIN, V.I.; OSIPOV, O.A.; GARNOVSKIY, A.D.; SIDONOV, A.M.

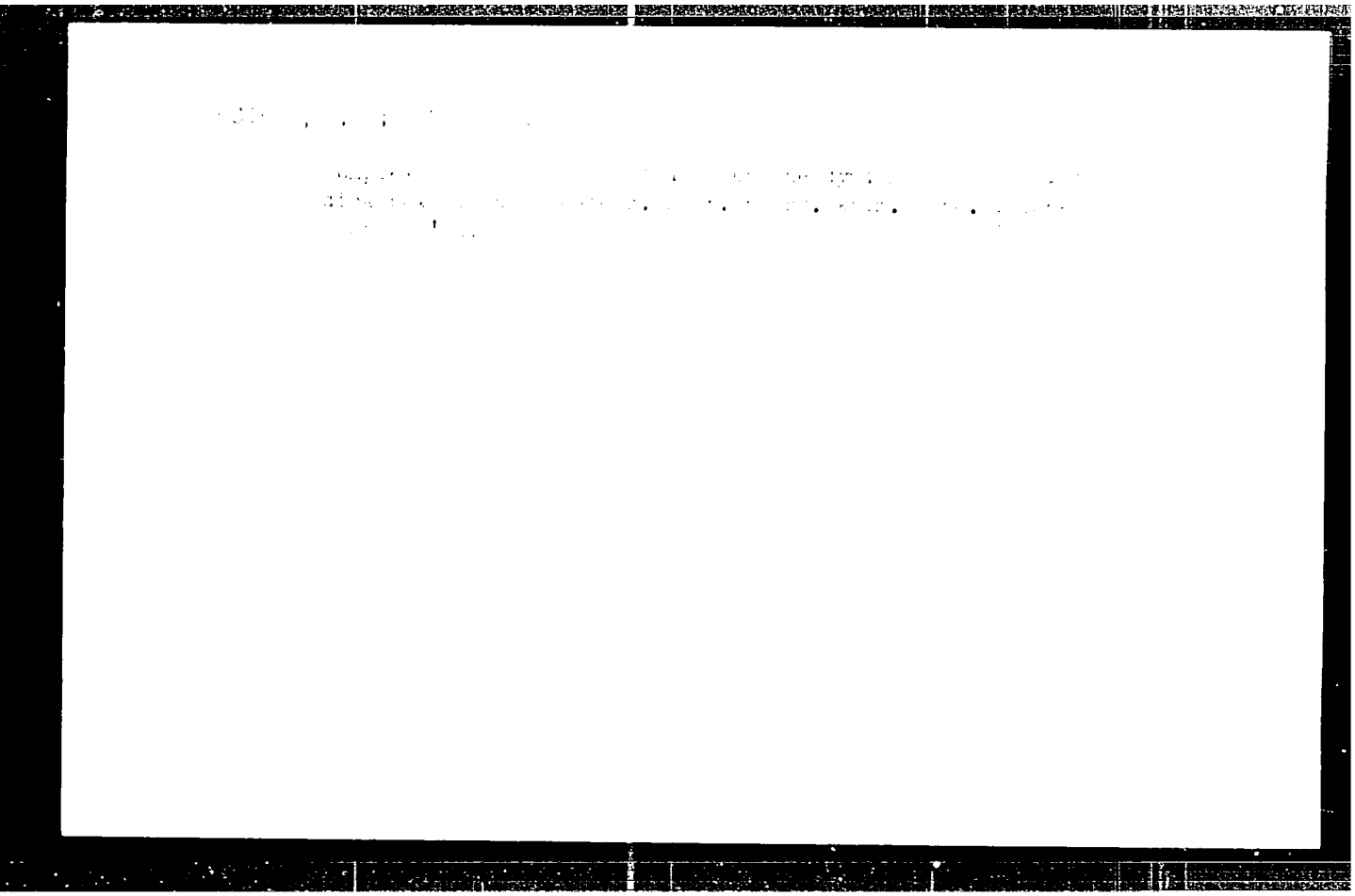
Dipole moments of imidazole and its derivatives. Zhur. fiz. khim. 36 no.3:469-473 Mr '62. (MIRA 17:8)

1. Rostovskiy gosudarstvennyy universitet.

OSIPOV, O.A.; ISMAILOV, Kh.M.; KASHIRENINOV, O.Ye.; GARNOVSKIY, A.D.; ORLOVA, L.V.

Study of some dialkylaminomethylphenols and aromatic sulfides. Dokl. AN Azerb. SSR 19 no.9:21-24 '63. (MIRA 17:8)

1. Rostovskiy-na-Donu gosudarstvennyy universitet i Institut neftekhimicheskikh protsessov AN AzSSR. Predstavleno akademikom AN AzSSR M.A. Dalinym.



APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001238

L 17823-65 EPA(s)-2/EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4/Pt-10 RPL/
RAEM(a) RM/WW

ACCESSION NR: AP4047650 S/0079/64/034/010/3407/3411

AUTHOR: Garnovskiy, A. D.; Osipov, O. A.; Dalgatov, D. D.; Simonov, A. M.; Minkin, V. I.

TITLE: Complex compounds of metals with certain nitrogen-containing ligands. I. Complexes of the 2-o-hydroxyanil benzimidazole series

SOURCE: Zhurnal obshchey khimii, v. 34, no. 10, 1964, 3407-3411

TOPIC TAGS: organometallic compound, chelate compound, benzimidazole derivative, organic complex

ABSTRACT: Two new o-hydroxyanils of 1-methyl-2-formylbenzimidazole were synthesized: 1-methylbenzimidazole-2-aldehyde-2'-hydroxyphenylimine and 1-methylbenzimidazole-2-aldehyde-(2'-acetylamino-5'-methoxy)phenylimine. The complex-forming ability of the first compound was investigated; the complexes of the second compound are to be subsequently described. Heating an alcoholic solution of the compound with the acetates or nitrates of Cu, Ni, Pb, Mn, Th or UO_2 gave brightly colored thermally stable rather insoluble crystals. Based

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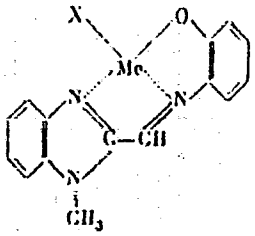
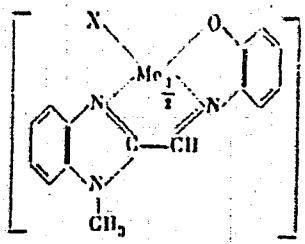
L 17823-65
ACCESSION NR: AP4047650

on elementary analysis and IR spectra, the 1:1 complexes formed with Pb and UO_2 and the 2:1 complexes formed with Ni and Th were assigned the following chelate structures:



(III) Me = Pb, X = $OCOCH_3$, NO_3;
(IV) Me = UO_2, X = $OCOCH_3$.



(V) Me = Ni, X = hydrazo;
(VI) Me = Th, X = NO_3.

1-methylbenzimidazole-2 derivatives containing no hydroxyl group or hydroxyl group in the p-position would not complex. The heteroatom of the imidazole ring

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L 17823-65
ACCESSION NR: AP4047650

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was also shown necessary for chelate formation, since benzal-o-aminophenol would not form a complex under similar conditions. "Spectra were obtained by V. N. Sheynker on the UR-10 (Zeiss) apparatus in a paste with vaseline oil." Orig. art has: 10 formulae

ASSOCIATION: Rostovskiy-na-Dony gosudarstvenny*y universitet (Rostov-on-Don State University)

SUBMITTED: 01Jul63 ENCL: 00

SUB CODE: OC NO REF SOV: 006 OTHER: 010

Card 3/3

SHELOMOV, I.K.; OSIPOV, O.A.; KASHIRENINOV, O.Ye.

Complex formation in diluted solutions by the method of molecular polarizations. Zhur.ob.khim. 33 no.4:1056-1059 Ap '63. Zhur.ob.-khim. 33 no.4:1056-1059 Ap '63. (MIRA 16:5)

1. Rostovskiy-na-Donu gosudarstvennyy universitet.
(Complex compounds--Dipole moments)

OSIPOV, O.A.; GAYVORONSKIY, V.I.

Complex formation of titanium tetrachloride with ketones studied by the infrared spectroscopy method. Zhur.ob.khim. 33 no.4:1346-1349 Ap '63. (MIRA 16:5)

1. Rostovskiy-na-Donu gosudarstvennyy universitet.
(Titanium chlorides) (Ketones) (Spectrum, Infrared)

LYSENKO, Yu.A.; OSIPOV, O.A.; KRAVTSOV, Ye.Ye.

On the existence of titanium etherates. Zhur.neorg.khim. no.3:663-667 Mr '63. (MIRA 16:4)

1. Luganskiy sel'skokhozyaystvennyy institut, kafedra obshchey khimii.
(Titanium compounds) (Esters)

L 31350-65 EWT(m)/EWP(j)/T/EWP(t)/EWP(b) Pc-4 IJP(c)/SSD(a)/APMD(t) JD/JG/RM

ACCESSION NR: AP4044808 S/0078/64/009/009/2126/2128

AUTHORS: Osipov, O.A.; Romova, M.G.

TITLE: Complex compounds of lanthanum and neodymium chlorides with dicarboxylic acid esters

SOURCE: Zhurnal neorganihheskoy khimii, v. 9, no. 9, 1964, 2126-2128

TOPIC TAGS: lanthanum diethyloxalate complex, lanthanum diethylmalonate complex, lanthanum diethylsuccinate complex, neodymium diethyloxalate complex, neodymium diethylmalonate complex, lanthanum diethylsuccinate complex, synthesis, IR spectrum, lanthanum chloride containing complex, neodymium chloride containing complex

ABSTRACT: Molecular compounds of lanthanum and neodymium chlorides with diethyloxalate, malonate and succinate were synthesized by shaking the anhydrous chlorides with excess esters in sealed ampoules, washing the product in benzene and drying in a desiccator. The lanthanum complexes were white and the neodymium were lilac-colored crystalline materials soluble in alcohol but insoluble in other organic solvents. Complexes of the general formulae $2MeCl_3$.ester and $MeCl_3$.ester were formed with the oxalate and malonate; the 2:1

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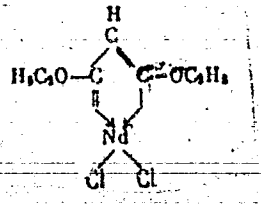
L 31350-65

ACCESSION NR: AP4044808

succinate complex was probably not formed. IR spectra of the compounds were examined in the 100-1800 cm^{-1} range. In the 2:1 complexes both C=O groups were coordinated with the metal, while in the 1:1 complexes only one C=O participated in the donor acceptor bond and the other C=O was free. A chelate of neodymium chloride with the diethylmalonate was synthesized and the following probable formula was proposed:



ASSOCIATION: None

SUBMITTED: 12Jun63 ENCL: 00

SUB CODE: IC, OC NR REF SOV: 003 OTHER: 005

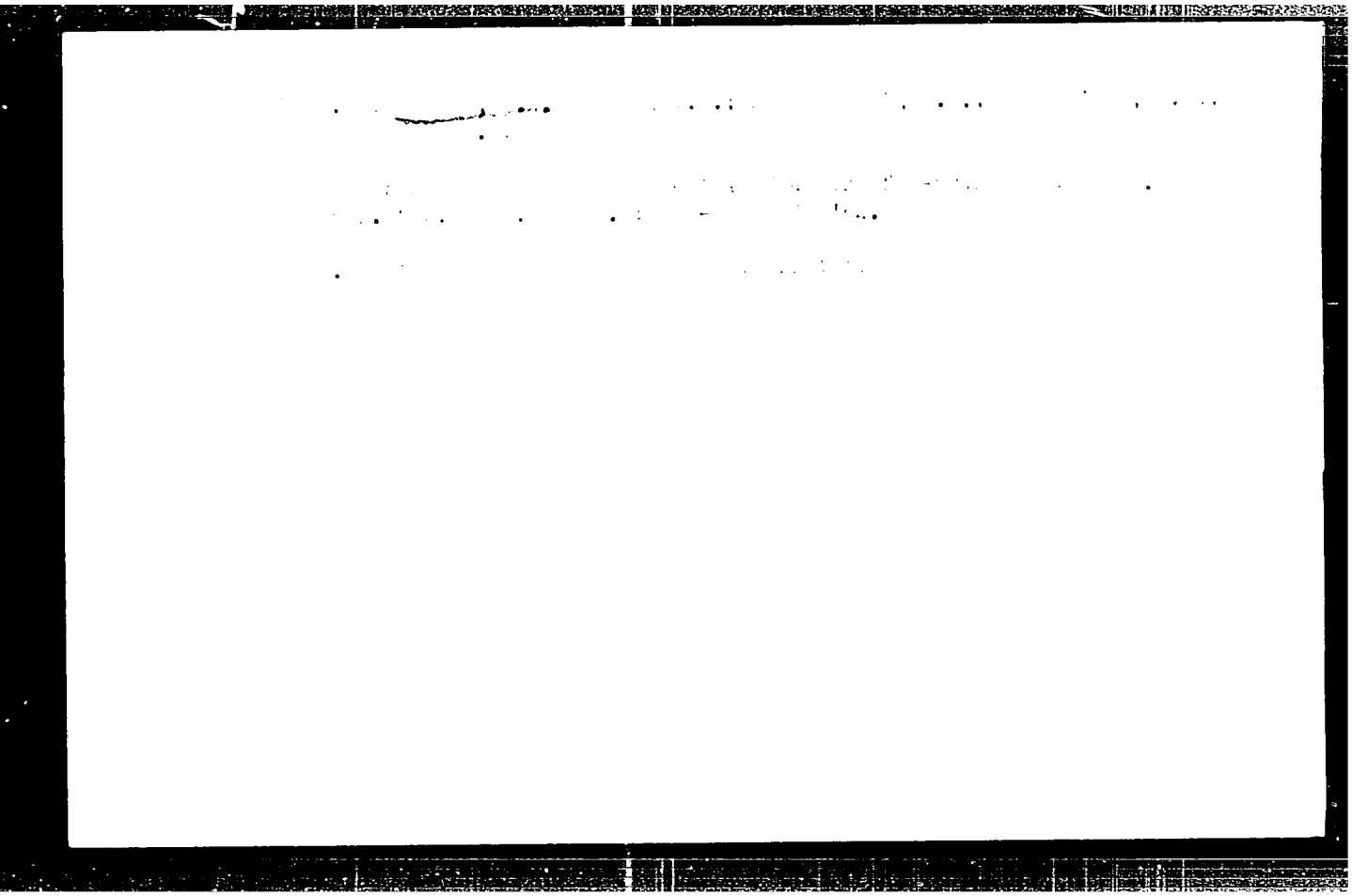
2/2

Card

GARNOVSKIY, A.D.; [illegible], A.A.; [illegible], L.I.; [illegible], A.M.; [illegible], V.I.

Complex compounds of metals with nitrogen-containing ligands.
Part 1: Complexes of o-o-hydroxyanils of the benzimidazole series.
Zhur. obs. khim. 34 no.1:34[illegible]-34[illegible] Ja '64.
(MIRA 17:1)

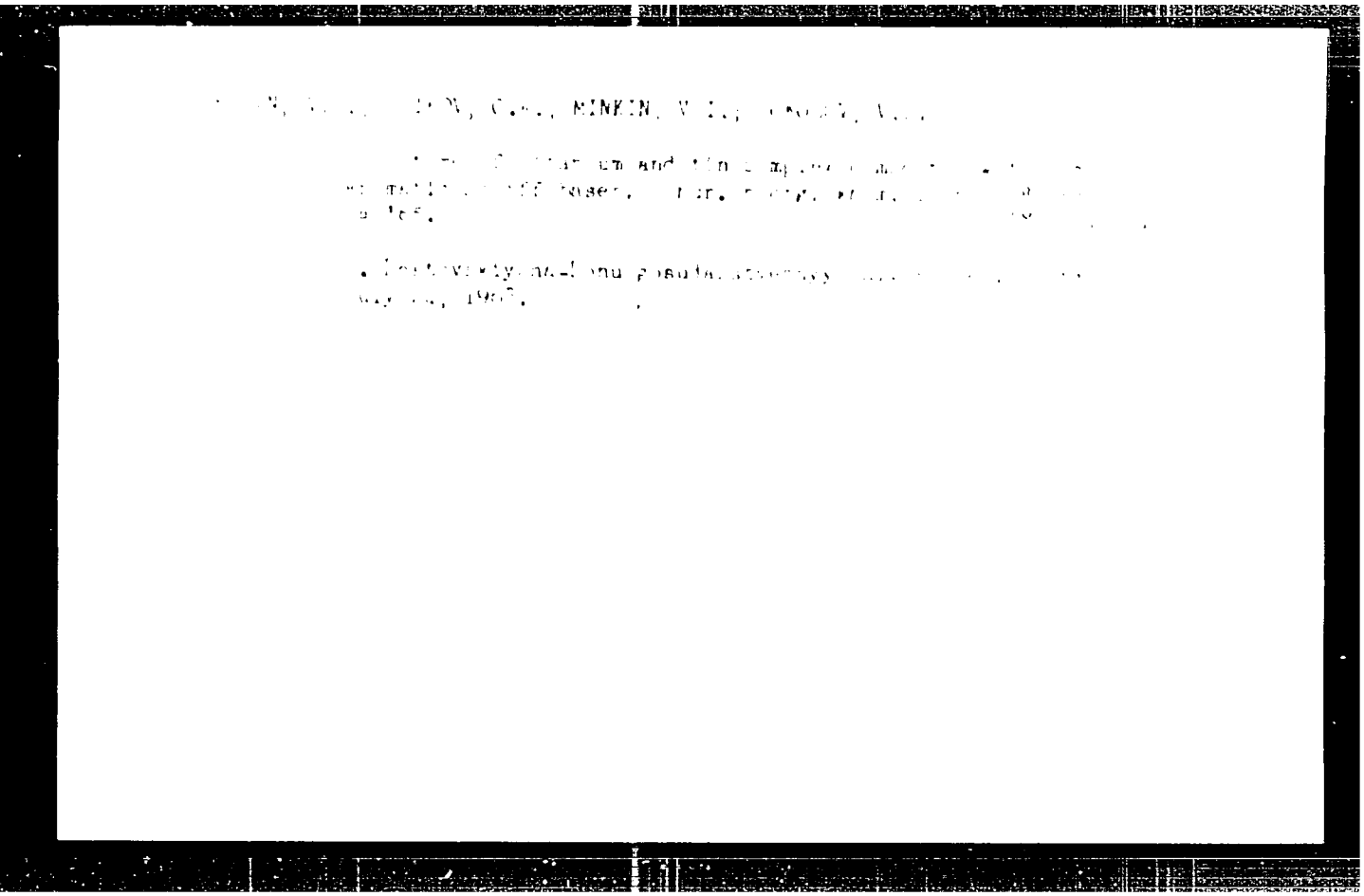
1. Rostovskiy-na-Donu gosudarstvennyy universitet.



APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001238

OSIPOV, Osip Aleksandrovich; MINKIN, Vladimir Isaakovich; ISUPOVA, G.G., red.

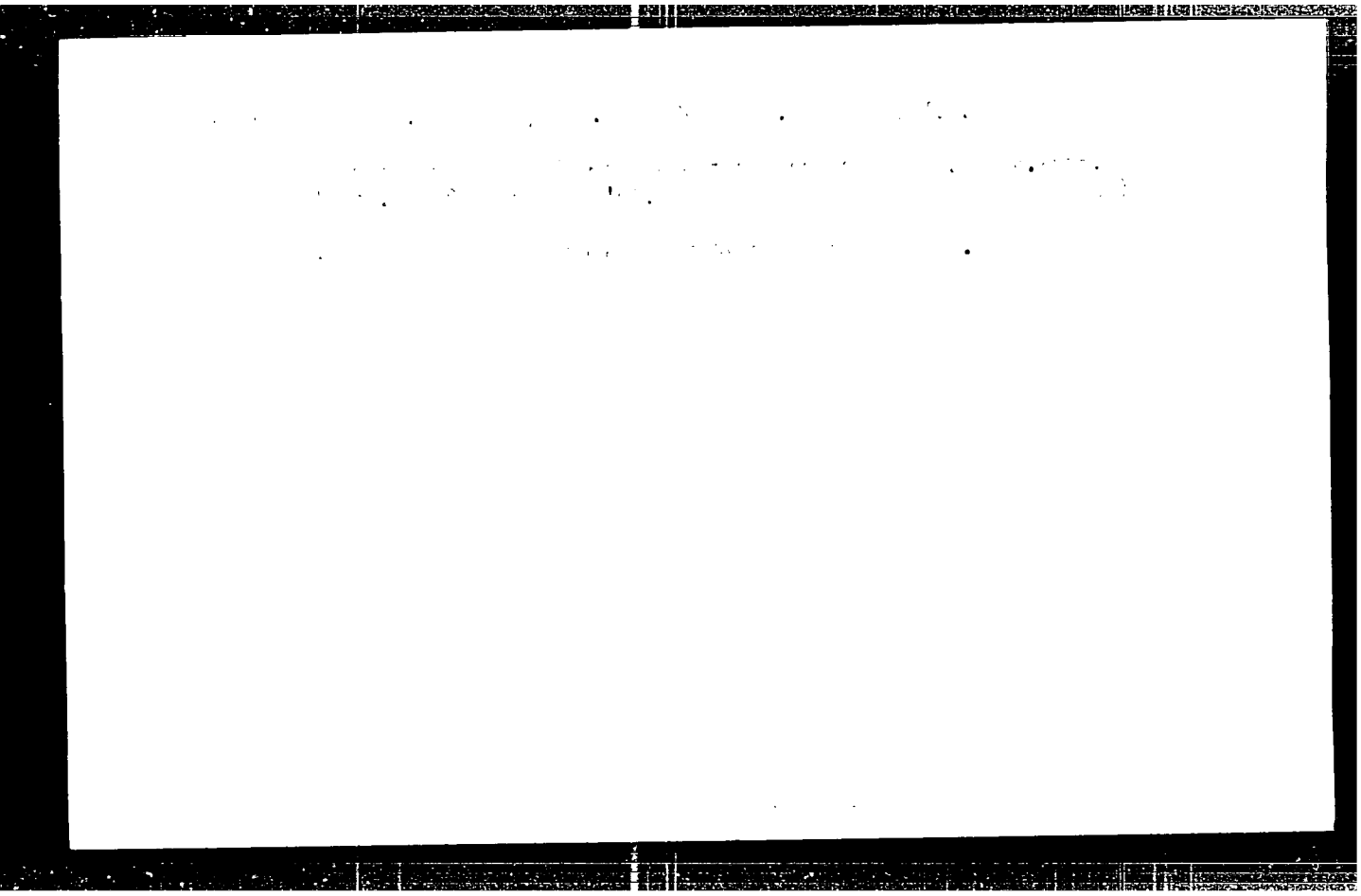
[Handbook on dipole moments] Spravochnik po dipol'nym momentam. Izd. 2., perer. i dop. Moskva, Vysshaia shkola, 1965. 262 p. (MIRA 18:7)



KURBATOV, V.P.; OSIPOV, O.A.; KOVALENKO, K.N.

Inner-complex compounds of copper with β-aminovinyl ketones.
Zhur. neorg. khim. 10 no.2:545-548 F '65. (MIRA 18:11)

1. Submitted June 12, 1964.



APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001238

L 27827-66 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AR6016194 SOURCE CODE: UR/0058/65/000/011/D026/D026

AUTHOR: Osipov, O. A.; Semenova, I. M.; Kogan, V. A.; Minkin, M. I.; Sokolov, V. L.

TITLE: Infrared spectra of gallium, indium, titanium, and tin chlorides with some organic ligands

SOURCE: Ref. zh. Fizika, Abs. 11D203

REF SOURCE: Tr. Komis. po spektroskopii. AN SSSR, t. 3, vyp. 1, 1964, 76-83

TOPIC TAGS: spectrum analysis, chloride, IR spectrum, gallium, indium, titanium, tin

ABSTRACT: An infrared spectrum analysis was used for the study of the characteristics of interaction between gallium and indium chlorides with acetone, methylhexyl ketone, cyclohexanone, acetophenone, benzophenone, and some other oxygen-containing compounds. [Translation of abstract.] [KP]

SUB CODE: 07/ SUBM DATE: none

Card 1/1

L 11727-66 EWT(m)/EWP(j)/T/EWP(t)/ETI IJP(c) JD/JW/WB

ACC NR: AP6020371 (A) SOURCE CODE: UR/0078/66/011/003/0536/0539

AUTHOR: Romova, M. G.; Osipov, O. A.; Inayeva, L. K. 33 b

ORG: none

TITLE: Coordination compounds of rare earth chlorides with esters of dicarboxylic acids

SOURCE: Zhurnal neorganicheskoy khimii, v. 11, no. 3, 1966, 536-539

TOPIC TAGS: praseodymium compound, samarium compound, gadolinium compound, dysprosium compound, lanthanum compound, neodymium compound, dicarboxylic acid, electron donor

ABSTRACT: Continuing their study of the electron-acceptor properties of rare earth halides, the authors investigated the interaction of praseodymium, samarium, gadolinium, and dysprosium chlorides with diethyl oxalate, malonate, and succinate, and the interaction of lanthanum and neodymium chlorides with diethyl adipate, maleate, and phthalate. The structure of the complexes thus obtained (which could not be isolated in the pure form) was studied by comparing the IR spectra of the pure ligands and complexes. It was found that the formation of complexes of the composition 2:1 causes the disappearance of the band corresponding to the stretching vibrations of the free carbonyl group and to the appearance of a strong band in the longer-wave region which can be assigned to the vibrations of the diester carbonyl groups

Card 1/2 UDC: 546.65'131:541.49

DALGATOV, D.D.; TERTOV, B.A.; GAYVORONSKIY, V.M.; OSIPOV, O.A.

Structure of 2-formylbenzimidazole. Zhur. VKHO 8 no.5:582-583 '63. (MIRA 17:1)

1. Rostovskiy gosudarstvennyy universitet.

OSIPOV, O.A.; GAYV[illegible]ONSKIY, V.I., SHVETS, A.A.

Donor properties of phosphoryl and ester oxygen in tributyl phosphate.
Zhur.neorg.khim. 8 [illegible]:2190-2193 S '63. (MIRA 16:10)

ACCESSION NR: AP4014693 S/0249/63/019/009/0021/0024

AUTHORS: Osipov, O. A.; Ismailov, K.A. I.; Kashireninov, O. Ye.; Garnovskiy, A. D.; Orlova, L. V.

TITLE: Investigation of some dialkylaminomethylphenols and aromatic sulfides (Presented by M. A. Dalin, academician of the Azerbaydzhan (AN SSR)

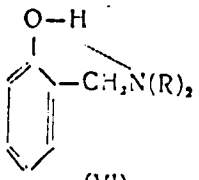
SOURCE: AN AzerbSSR. Doklady, v. [illegible], no. 9, 1963, 21-24

TOPIC TAGS: antioxidant, dialkylaminomethylphenol, sulfide, intramolecular bond, intermolecular bond, hydrogen bond, [illegible]oment, magnetic susceptibility, infrared spectra

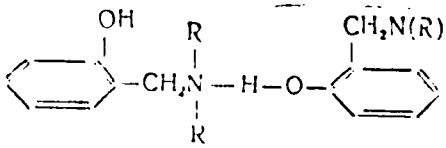
ABSTRACT: The dipole moments and [illegible] susceptibility and the infrared spectra of dialkylaminomethylphenols (DAMP) and aminomethyl derivatives of alkylphenylsulfides (AMAPS) were studied. These substances were of interest as potential antioxidants for lubricating oils, and they all contained a phenolic hydroxyl group in ortho position in respect to the dialkylaminomethyl group. The investigation centered on whether there occurred in these compounds the formation of either intramolecular or intermolecular hydrogen bonds, as

Card 1/3

ACCESSION NR: AP4014693



(VI)



(VII)

To this end, dielectric conductivity measurements were conducted in benzene solutions and the dipole moments calculated, using P. A. Osipov's technique (ZhOKh. 156, t. 26). The existence of intramolecular hydrogen bonds in most of the DAAMP was confirmed, but was proved absent in the AMAPS compounds. Orig. art. has: 2 formulas and 3 tables.

ASSOCIATION: Rostovskiy-na-Donu gosudarstvennyy universitet (Rostov-on-the Don State University); Institut neftekhimicheskikh protsessov (Institute of Petroleum Processes)

Card 2/3

KOGAN, V.A.; OSIPOV, O.A.; MINKIN, V.I.; GORELOV, M.I.

Dipole moments and structure of inner-complex compounds of copper with aromatic Schiff bases. Dokl. AN SSSR 153 no.3: 594-596 N '63. (MIRA 17:1)

1. Rostovskiy-na-Donu gosudarstvennyy universitet. Predstavleno akademikom V.I. Spitsynym.

KOGAN, V.A.; OSIPOV, O.A.; GARNOVSKIY, A.D.

Compounds of thorium tetranitrates with salicylalaniline.
Zhur. neorg. khim. 9 no.2:494 F'64. (MIRA 17:2)

1. Rostovskiy-na-Donu gosudarstvennyy universitet.

ACCESSION NR: AP4019498 S/0078/64/009/003/0734/0737

AUTHOR: Osipov, O. A.; Kashireninov, O. Ye.; Leshchenko, A. V.

TITLE: Electric conductivity of niobium oxychloride in organic solvents

SOURCE: Zhurnal neorg. khimii, v. 9, no. 3, 1964, 734-737

TOPIC TAGS: niobium oxychloride, electric conductivity, niobium liquid extraction, niobium separation, specific conductance, solvent dielectric constant, methanol complex, dioxance complex, dipole moment, donor acceptor reactions, molar polarization

ABSTRACT: In order to develop more effective procedures for separating niobium from other metals by liquid extraction, more data is required on the effect of the chemical nature and the polarity of the solvent on the behavior of niobium compounds. Measurements were therefore made of the electric conductance of niobium oxychloride in a series of organic solvents (1,4-dioxane, methanol, propanol, butanol, heptanol, pyridine and nitrobenzene) in relation to concentration and temperature. In the alcoholic solutions, the specific conductance of $NbOCl_3$ decreases with increase in the weight of the alcohol radical. The specific

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