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The polythermal field of crystallization of Glauber salt in the system  $\text{NaCl} + \text{MgSO}_4 + \text{H}_2\text{O}$ . V. E. MALINOVSKI AND A. F. SLODINACHVIL. *J. Russ. Phys.-Chem. Soc.* 64, 1932-74(1932).—In the temp. limits  $+32.4^\circ$  to  $-1.2^\circ$  a considerable increase in the field of crystn. of Glauber salt takes place with lowering of temp. The increase of the field of crystn. of Glauber salt from  $+32.4^\circ$  to  $+20^\circ$  takes place mainly at the expense of the thenardite (active  $\text{Na}_2\text{SO}_4$ ) field. From  $+20^\circ$  to  $-8^\circ$  the increase takes place at the expense of  $\text{NaCl}$ , astrakanite and  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ . Beginning with  $-1.2^\circ$  the crystn. field of Glauber salt decreases rapidly with fall of temp. since a new field of  $\text{H}_2\text{O}$  appears. The displacement of the triple point IIIa from  $+25^\circ$  to  $-8^\circ$ , runs parallel with the diagonal  $\text{Na}_2\text{SO}_4 - \text{MgSO}_4$ . S. L. MALINOVSKI

458-11A METALLURGICAL LITERATURE CLASSIFICATION

101002 H10 ONV 001

101002 H10 ONV 001

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POLYMERIC PHASE OF CRYSTALLIZATION OF DISOLVED SALT FROM THE SOLUTIONS OF LITHIUM CHLORIDE AND MAGNESIUM SULFATE. V. P. DUBOVSKIY AND G. E. KISHENKOY. *Izv. Akad. Nauk SSSR, Ser. Khim. Nauk, No. 4, 1968, 46-48 (1968); cf. Zh. Fiz. Khim., Ser. Phys. Chem. Sec. 61, 1987-74 (1987).*—Cryst. production of  $\text{Na}_2\text{SO}_4$  from  $\text{NaCl}$  and  $\text{MgSO}_4$  brine as obtained at the salt works of Crimea saline lakes is described. The deposit, formed in summer on evaporation of the saline brine for production of  $\text{MgCl}_2$ , is dissolved in the same reservoir by admixture of sea water; the salt, on cooling to  $0^\circ$  in winter tanks, about 80% of  $\text{Na}_2\text{SO}_4$  (based on the wt. of brine), which is collected after the mother liquor is drawn off. This is an improvement over methods based on crystals of 0.5-1% of  $\text{Na}_2\text{SO}_4$  (of the wt. of brine) and dependent on propitious weather and times of  $-6-7^\circ$ .  
 CRAS. FILANC

METALLURGICAL LITERATURE CLASSIFICATION

PUBLICATION AND PROPERTY INDEX

4

CR

Electrodeposition of chromium. V. P. IL'DIKHII, N. P. LAPIN AND L. N. GOLTZ.  
*Zhur. Prikladnoi Khim.* 3, 200-20(1930). The increase in concn. of sulfate ions (above  
 3 g. of  $\text{Cr}_2(\text{SO}_4)_3$  per l.) decreases the current efficiency, improves the luster of the de-  
 posited metal, increases to a certain extent the permissible working interval between  
 the min. and max. allowable c. d., and probably increases the hardness of the deposits.  
 For protection of Fe from corrosion the layer of Cr must be about 0.03 mm thick. The  
 expl. work showed that, by increasing the concn. of sulfate ions in the electrolytic bath,  
 Cr films are obtained which are more resistant to corrosion than the Cr films deposited  
 from solutions with smaller concn. of sulfate ions. The data are tabulated so as to permit  
 the selection of the operating conditions for the particular type of the Cr plate which is  
 desired for covering the metal surface. V. KALITIMOV

ASB-524 METALLURGICAL LITERATURE CLASSIFICATION

EXAM. CONTROL

SEARCHED INDEXED SERIALIZED FILED

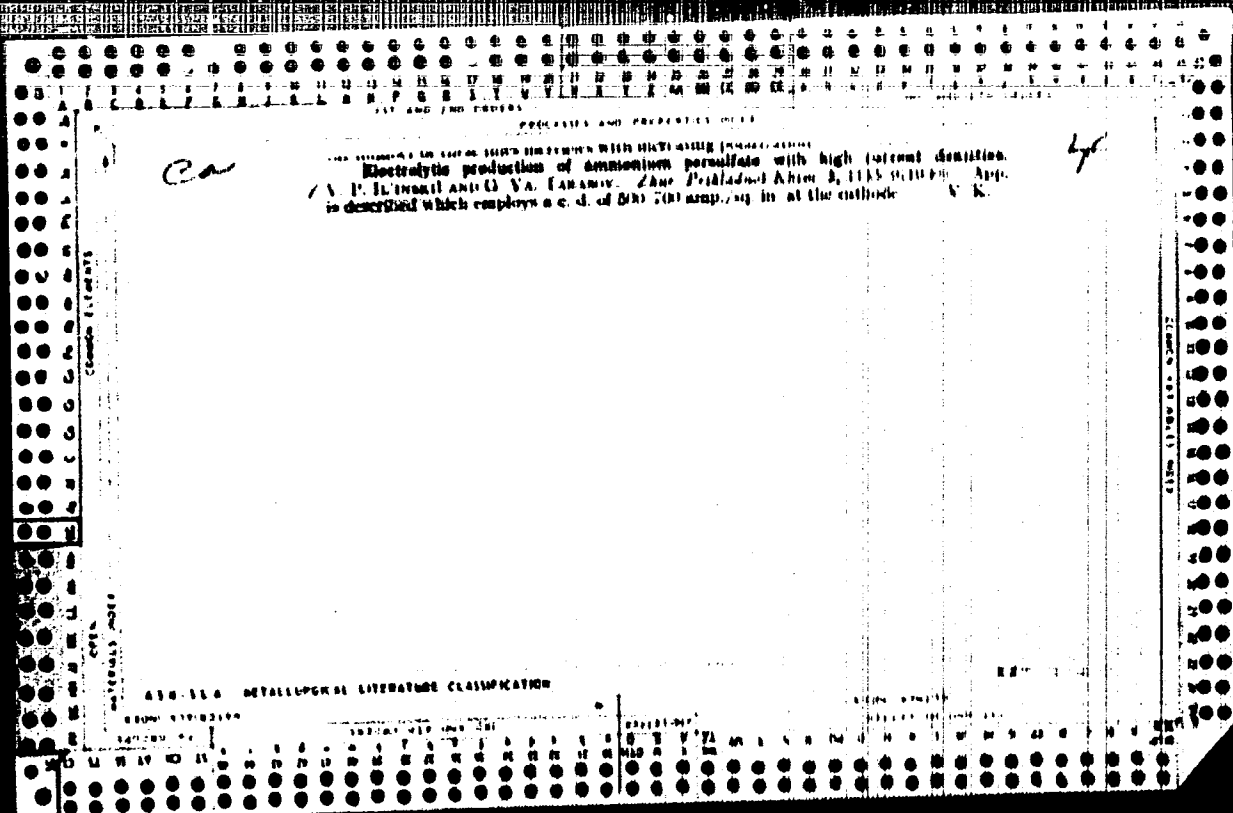
APR 1964

RUSSIAN AND FOREIGN LITERATURE

Electrolytic production of potassium ferricyanide, V. P. LEVIN and N. I. LAPIN. *Zhur. Prikladnoi Khim.* 4, 901-903 (1961). A soln. of  $K_4Fe(CN)_6$  (10%) at 20°C is electrolyzed at 55° between the Fe cathode and Ni anode. The anode vol. is 5 amp. and at the cathode 20 to 50 amp. with and 150-200 amp./cm<sup>2</sup> in. without diaphragm. The diaphragm, at the cathode, increases the current output, but it soon deteriorates because of the mech. action of H<sub>2</sub>. Anodes is retained alkali period by treating it with HCl and heating at 150°-200°. If the distance between electrodes is less than 4 cm, the distribution of current at the anode is irregular. Voltage is 2.0-3.0 v. with, and 3.3-3.9 v. without diaphragm.  $K_2S_2O_8$  acts on the Ni anode and if present should be sepal. from  $K_4Fe(CN)_6$  by recrystn. Electrolysis is discontinued when the  $K_4Fe(CN)_6$  concn. falls to 15-20 g./l.  $K_4Fe(CN)_6$  is crystal. from the soln. cooled to 15°. The mother liquor is again used with  $K_4Fe(CN)_6$  at 50° and the process repeated. After the 4th cycle the soln. is evaporated to dryness.  $K_4Fe(CN)_6$  thus obtained contains a small quantity of CN compds., but it might be utilized for red.  $K_4Fe(CN)_6$ . A flow sheet of the process based on semi-conv. scale equip. is appended. The following body diagrams are given: mixts. of  $K_4Fe(CN)_6$  and  $K_2S_2O_8$  at 25°, 40°, 55° and at 5 v.; mixts. of  $K_4Fe(CN)_6$  and  $K_2S_2O_8$  in water, 1 N and 2 N KOH at 25°, 40° and 55°. V. K.

450-31A METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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PROCESSED AND PROPERTY INDEX

2

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Polythermic domain of crystallization in the system:  $2NaCl + MgSO_4$  (see  $Na_2SO_4 + MgCl_2$ , V. P. Izrael and A. P. Sagal'dachvili, *J. Gen. Chem.* (U.S.S.R.), 1954-N (1951); cf. C. A. 26, 2128). The polytherms of the system:  $2NaCl + MgSO_4$  (see  $Na_2SO_4 + MgCl_2$ ) were investigated. at  $-5^\circ$ ,  $-8^\circ$ ,  $-15^\circ$  and  $-20^\circ$ . The field of crystn. of  $NaCl \cdot 12H_2O$  lies between  $0^\circ$  and  $-5^\circ$  and is extensive at  $-5^\circ$ . As the temp. is lowered, the field of  $NaCl \cdot 12H_2O$  extends at the expense of  $NaCl$ , which almost disappears at  $-20^\circ$ . Change of only of  $NaCl \cdot 12H_2O$  or  $NaCl$  with temp. is insignificant. Beginning with temps. between  $-8^\circ$  and  $-15^\circ$  the field of crystn. of  $NaCl \cdot 12H_2O$  is adjacent to the field of  $MgSO_4 \cdot 7H_2O$  crystn. (On applying these data to the problem of sepr. salt from sea-water industrially, it is concluded that since the amt. of  $H_2O$  in sea-water is 10 times that required for the sepr. of the salt, the formation of a large amt. of ice will interfere with the collection of the salt at temps. below  $0^\circ$ . Salt soln. of sea-water type, below  $0^\circ$ , lie in the field of crystn. of  $NaCl \cdot 12H_2O$ ; hence, on cooling, this salt will separate together with ice, as a salt. of this ... with  $NaCl$  hydrate and ice. S. L. Makhovskiy

METALLURGICAL LITERATURE CLASSIFICATION

PROCESSING AND REPORTING GUIDE

LIST AND FILE CHECKS

18

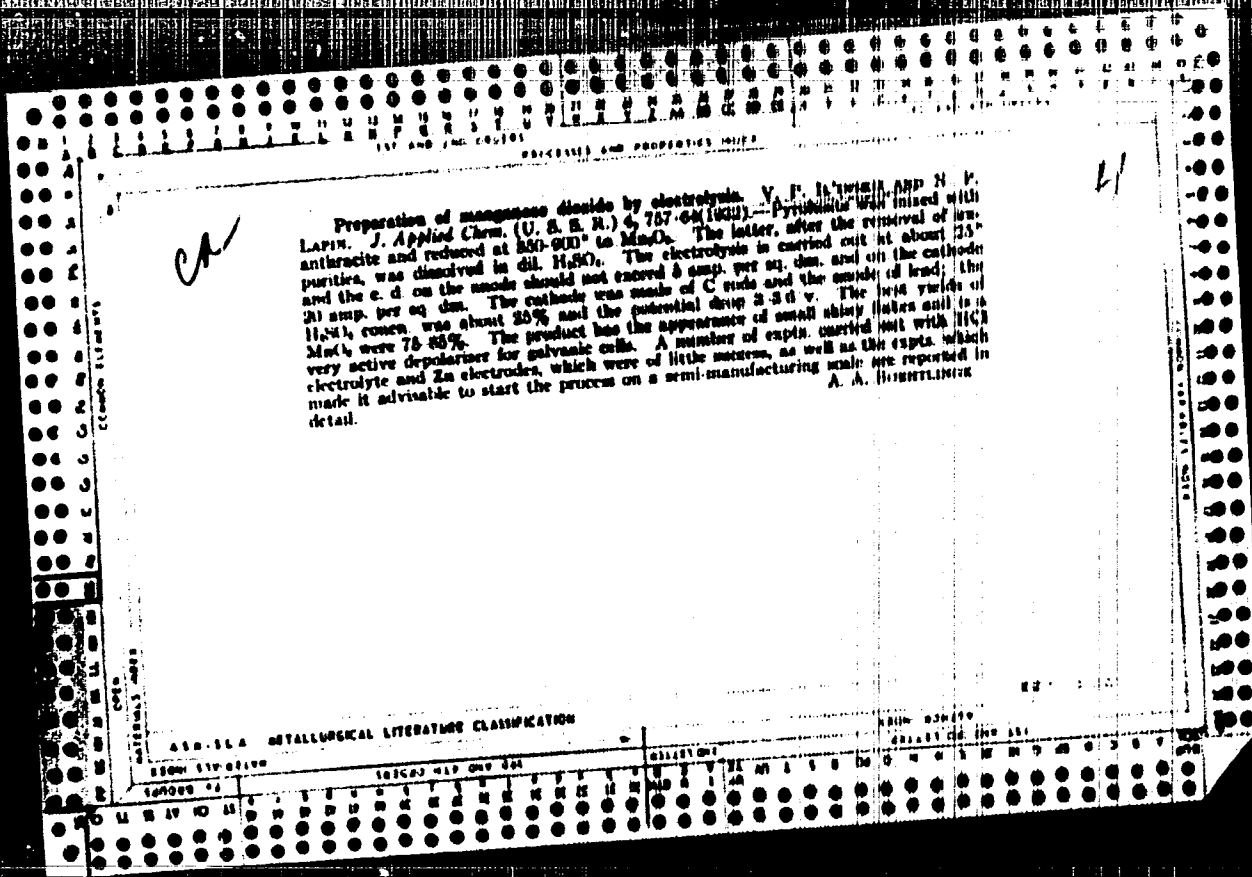
*ca*

The preparation of anhydrous magnesium chloride from magnesium oxide and hydrogen chloride. V. P. J. JENSEN, N. P. LAPIN AND T. V. KOMINIKHERNA. *J. Chem. Ind. (Moscow)* 4, Pt. 2, 1-5 (1931).--The optimum temp. for the reaction between dry HCl and MgO is 450°. At this temp., the reaction goes almost to completion in 1 hr. when MgO is used from the basic carbonate or MgCl<sub>2</sub> is used. When naturally occurring MgO minerals are used the reaction is slower. If 1.5% H<sub>2</sub>O is present in the HCl the reaction is slowed up 2-4 times. HCl contg. 27% H<sub>2</sub>O gives a double salt, and that contg. 63% gives entirely Mg(OH)<sub>2</sub>. H. M. KUCHEVSKY

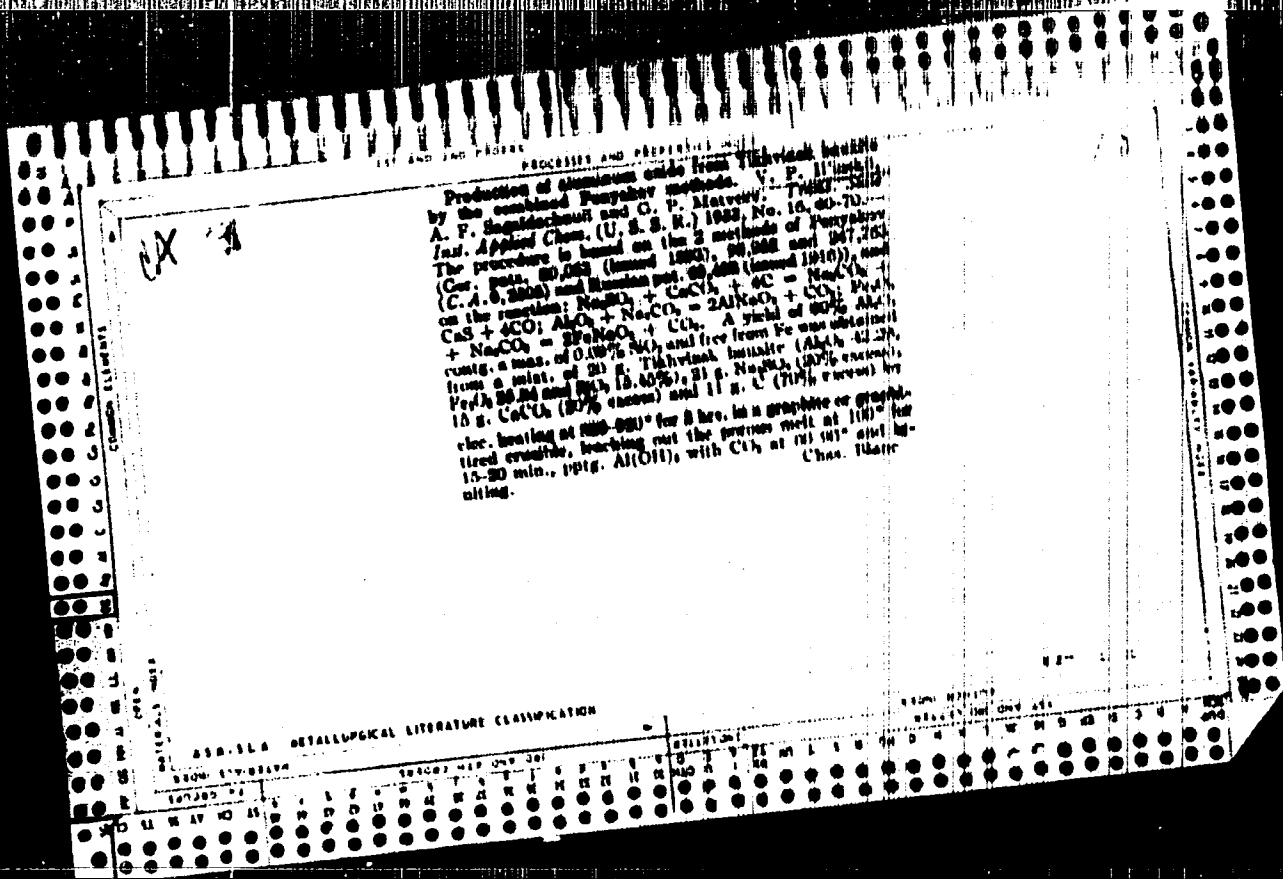
ASB-11A META SOCIAL LITERATURE CLASSIFICATION

BOOK SYMBOLS

100000 017 007 001







PROCESSING AND PRESERVATION INDEX

73

Reduction of sodium sulfate with hydrogen, methane and water gas. V. P. Il'inski, O. Vn. Yaroviy and A. A. Glasberg. *Trans. Acad. Sci. USSR Div. Chem. (U. S. S. R.)* 1952, No. 10, 20-5; cf. Burdakov, C. A. 21, 203; U. S. pat. 2,527,627; Ger. pat. 404,511.—Lab. expts. produced optimum results of 88% Na<sub>2</sub>S by heating Na<sub>2</sub>SO<sub>4</sub> in the presence of 8.6% C catalyst at 800° for 1 hr, with H<sub>2</sub> and water gas and 61% Na<sub>2</sub>S with CH<sub>4</sub>. Al<sub>2</sub>O<sub>3</sub> does not catalyze the reaction. Chas. Blawie

METALLURGICAL LITERATURE CLASSIFICATION

MIN. 63M 70

CLASS. CODE (MAY 55)

REAGENTS AND PROPERTIES INDEX

Production of sodium azide by thermoelectric method.  
 V. E. Kaban, O. Ya. Tarasov and O. Ya. Kaban.  
 Russ. Chem. Rev. (U. S. S. R.) 1962,  
 No. 3, 55-56; of Freeman, C. A. 10, 3682. Anhyd.  
 C. P. NaOH, was thoroughly mixed with charcoal (1  
 mol of NaOH: 0.5 mol of C to 1 mol of NaOH),  
 the mixt. was heated in a porcelain crucible in an elec.  
 furnace at 500° for 2-30 min. Optimum results were  
 obtained in 10-20 min. with NaOH 2.5, NaOH/O 2.2,  
 NaOH, mass. loss 8.8%, NaOH, 2.2) and least. residue  
 1.0%. A certain relation between the percentages of  
 unreacted NaOH and NaOH, suggests that the latter  
 results from the interaction of NaOH with NaCl, which  
 is the product of heating of the main NaOH component with  
 the loss of H and is added to NaOH. By increasing  
 the proportion of C, the loss of H is somewhat decreased,  
 the proportion of by-products is increased and the yield of  
 the NaOH is unaltered. By increasing the temp. to 500°, the  
 reaction is accelerated, the by-products are decreased and  
 the losses increased. An adm. of KNO<sub>3</sub> to the mixt.  
 results in a more complete reduction of NaOH to NaCl  
 but does not decrease the consumption of elec. energy.  
 Chem. Abstr.

ASD SIA METALLURGICAL LITERATURE CLASSIFICATION

CP

Production of bromides by the action of bromine on bases in the presence of formate. V. P. Il'inski, A. I. Chertok and S. I. Kakhilovich. *Zhurn. Prikl. Khim.*, 1956, 29, 26. A brief review of methods for the production of bromides. Two methods developed in the U. S. S. R. are described: *Il'inski's method*:  $Br_2$  is passed into the basic soln.,  $3Br_2 + 3Na_2CO_3 + 3H_2O = 6NaBr + NaBrO_3 + 3CO_2 + 3H_2O$ . The bromate is then sepd. from the soln. by fractional crystn. The soln. after crystn. is bromide and some of the bromate remaining in soln. is converted to bromide by means of iron filings:  $NaBrO_3 + 2Fe + 3H_2O = 2Fe(OH)_3 + NaBr$ . The soln. is filtered free from  $Fe(OH)_3$  and the filtrate evapd. NaBr is centrifuged and dried. The crystal. bromate is redissolved and the soln. added to the bromide soln. and treated with acid:  $3NaBrO_3 + NaBrO_3 + 3H_2SO_4 = 3HBrO_4 + 3Na_2SO_4 + 3H_2O$ . The filtered  $HBrO_4$  is returned to the process. The bromate is not destroyed by chemical reagents. *Kakhilovich's method* consists of the action of  $Br_2$  on a soln. contg. an equiv. quantity of alkali and formate. The reaction takes place in 2 steps: (1)  $6NaOH + 4Br_2 = 6NaBr + NaBrO_3 + 3H_2O$ ; (2)  $3HCOONa + NaBrO_3 + 3H_2O = 3NaBr + 3H_2CO_3 = 3CO_2$ . The most important conditions are: The reaction does not require heating and is conducted at 60°; it takes place equally well at all concentrations of the reactants and takes about 1.5 hrs.; with a slight excess of formate there are no traces of bromates formed.

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involved and the soln. added to the bromide soln. and treated with acid:  $3NaBrO_3 + NaBrO_3 + 3H_2SO_4 = 3HBrO_4 + 3Na_2SO_4 + 3H_2O$ . The filtered  $HBrO_4$  is returned to the process. The bromate is not destroyed by chemical reagents. *Kakhilovich's method* consists of the action of  $Br_2$  on a soln. contg. an equiv. quantity of alkali and formate. The reaction takes place in 2 steps: (1)  $6NaOH + 4Br_2 = 6NaBr + NaBrO_3 + 3H_2O$ ; (2)  $3HCOONa + NaBrO_3 + 3H_2O = 3NaBr + 3H_2CO_3 = 3CO_2$ . The most important conditions are: The reaction does not require heating and is conducted at 60°; it takes place equally well at all concentrations of the reactants and takes about 1.5 hrs.; with a slight excess of formate there are no traces of bromates formed.

James Scott

859-558 METALLURGICAL LITERATURE CLASSIFICATION

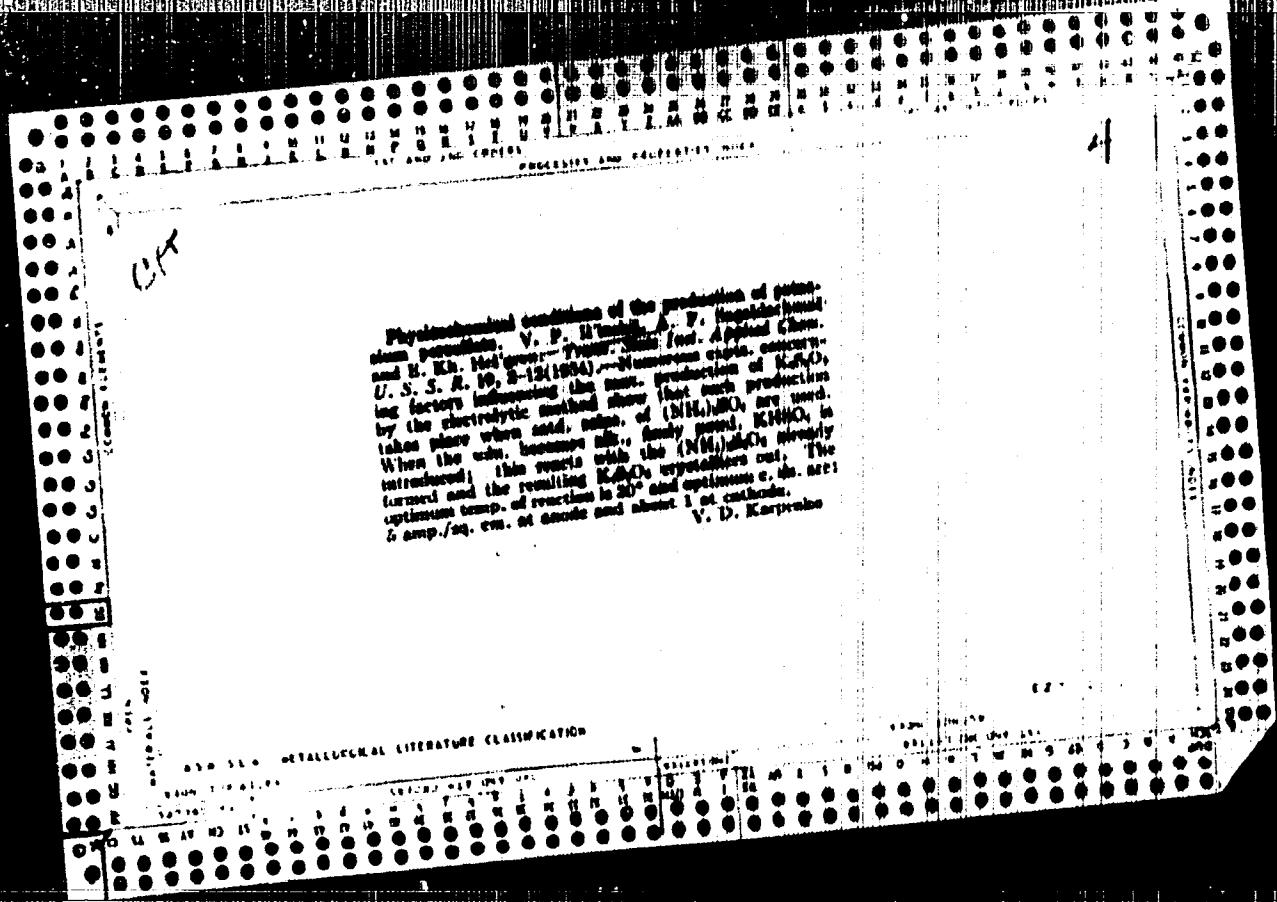
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*ca*

New methods for working up sodium oxides into soda ash and sulfur. V. P. Il'inski, N. V. Merin, I. N. Ostrovskii, and others. *V. P. Il'inski, N. V. Merin, I. N. Ostrovskii, and others. Zh. Fiz. Khim.* (Moscow) 1966, No. 10, 27-33. When a  $\text{Na}_2\text{O}$  salt is treated at  $105^\circ$  with  $\text{CO}_2$ , a max. amt. of  $\text{NaHCO}_3$  is formed when 70% of the  $\text{Na}_2\text{O}$  is decomposed. The ppt. impurities are then filtered off, and more  $\text{CO}_2$  is passed in to ppt. very pure  $\text{NaHCO}_3$ .  $\text{Na}_2\text{S}$  is also formed, and with  $\text{CO}_2$  gives  $\text{NaHS}$  and then  $\text{H}_2\text{S}$ . The max. amt. of  $\text{H}_2\text{S}$  in the outgoing gases is reached 0.5 hr. after beginning the addn. of  $\text{CO}_2$ . Pptn. of  $\text{NaHCO}_3$  interferes with the complete evolution of  $\text{H}_2\text{S}$ . To prevent this, sodium is added and the soln. is boiled for 1.5 hrs. The remaining  $\text{Na}_2\text{S}$  is decomposed by this treatment. The  $\text{CO}_2$  used should not contain more than 2%  $\text{O}_2$  or oxidation of  $\text{Na}_2\text{S}$  to  $\text{Na}_2\text{SO}_3$  will occur. When the  $\text{H}_2\text{S}$  content in the outgoing gas is 20% the concn. of  $\text{CO}_2$  passed in should be 20%. Larger amts. of  $\text{CO}_2$  are undesirable. The optimum speed of addn. of  $\text{CO}_2$  is 0.66 l. per min. and the optimum concn. of  $\text{Na}_2\text{S}$  before the 2nd addn. of  $\text{CO}_2$  is 144 g. per l. The mother liquors from the process are used for  $\text{H}_2\text{S}$  deriving from  $\text{Na}_2\text{SO}_3$ .

H. M. Lohmeyer

ASS-36A METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

18

Sodium sulfide or carbonate. V. P. Hinkil and O. Ya. Kalani. Russ. 12,191, May 57, 1915. 431 melt of  $\text{Na}_2\text{S}$  obtained in the usual manner from  $\text{Na}_2\text{CO}_3$ , or the cooled, soft of this melt is mixed with mirabilite for the purpose of utilizing the heat of the melt and ii) dehydrate the mirabilite. The residue of  $\text{Na}_2\text{SO}_4$  is passed into the furnace to be reduced to  $\text{Na}_2\text{S}$ , and the salt decomposed or evaporated.

ASO-SEA METALLURGICAL LITERATURE CLASSIFICATION

Sodium carbonate. V. P. H'mshil and O. Ya. Kalan.  
Russ. 43,574, Aug. 31, 1933. In the Leblanc soda process  
Na<sub>2</sub>CO<sub>3</sub> is salted out by the use of Na<sub>2</sub>S crystals.

ASB-553 METALLURGICAL LITERATURE CLASSIFICATION



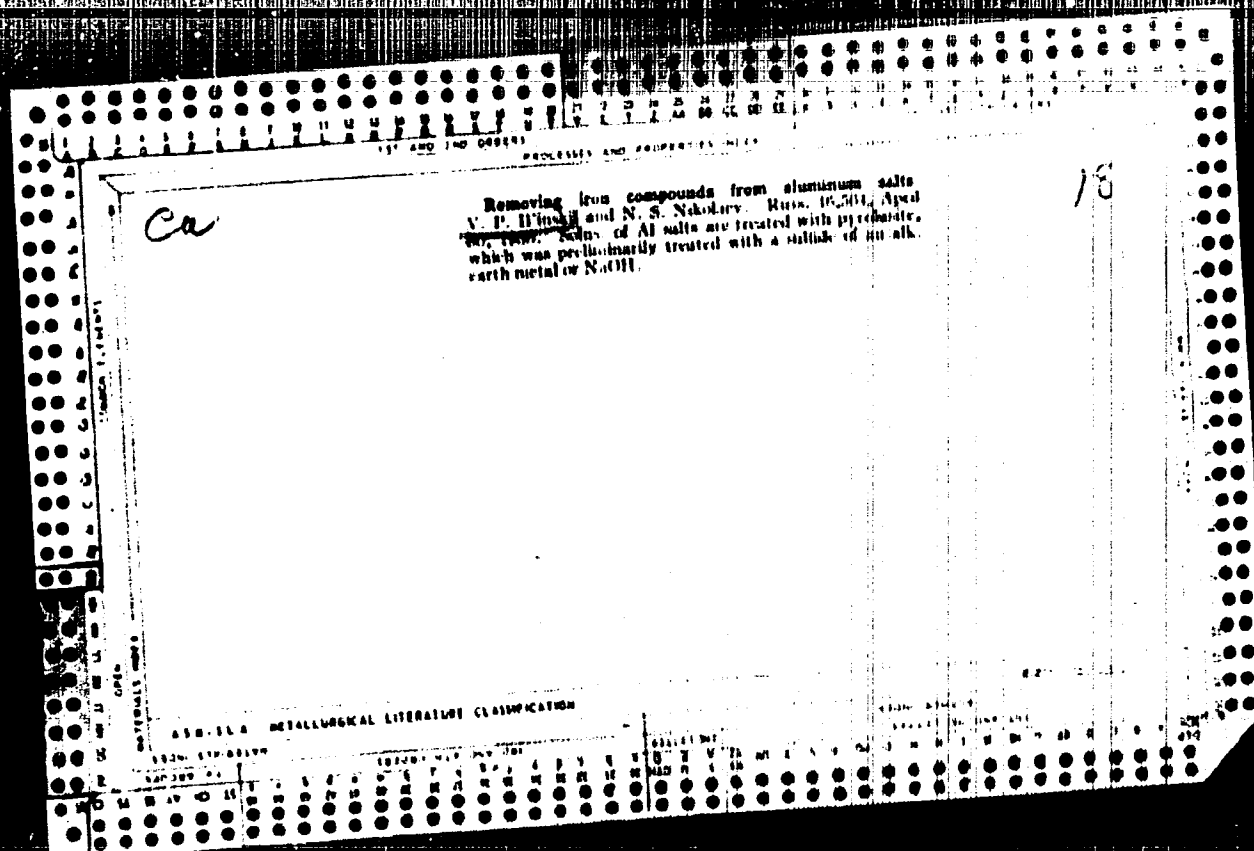
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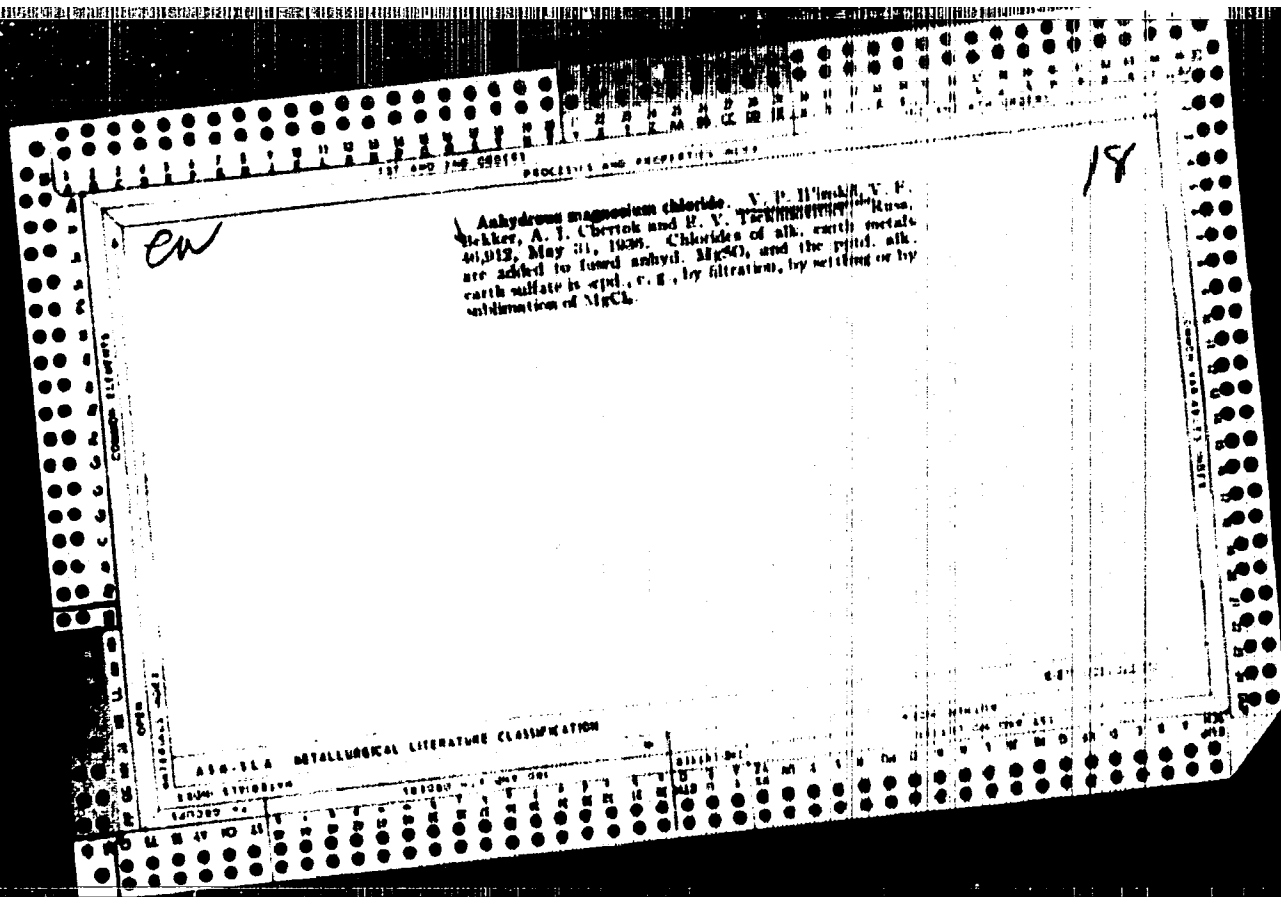
ca

Sodium hydroxide. V. P. Il'inski, A. E. Kruglikov  
and A. S. Izotova. Russ. 46, 347, April (2), 1950; Dietsen  
Na<sub>2</sub>SO<sub>4</sub>·8H<sub>2</sub>O is treated with H<sub>2</sub>S.

ASST. S. A. METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00
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13

Thermal insulator. V. P. Il'inskiĭ. Russ. 47,218, May 31, 1961. A suspension of asbestos fibers in a MgCl<sub>2</sub> soln. is heated to form a basic Mg salt and the solid phase is sepd. and dried.

ASB-15A METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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Ca

ABSTRACTS AND PROCEEDINGS INDEX

The hydrochemistry of the Karabogas Bay. V. P. Ilinski, O. S. Kabanov and Ya. B. Blyumberg. *Trudy Sovetskoi Lab. (Vsesoyuz. Inst. Galergin)* No. 3, 9-17 (1968).—In the mud of the bay appreciable quantities of  $MgCO_3$  were found. A comparison of the salinity of the waters in the bay in 1907 and 1932 shows a 1.4-fold increase. The increase of the Mg content of the saline waters is accounted for by the increased  $MgCO_3$  content of the "white mud." Borings made in 1934-5 proved the presence of mirabilite. Numerous tables on the composition of the saline waters and of the mud at various times during the year are given. I. S. Joffe

ASD SLA METALLURGICAL LITERATURE CLASSIFICATION

1968 11 01 19

1968 11 01 19

TITLE AND SUBJECT INDEX

15

*Investigation of the sulfate problem by the State Institute of Applied Chemistry, V. P. Hryshch, (Ukraine). Inst. Prikladnoi Khim., Sverdlovsk 1970-71, 48-53 (1970); Khim. Referat. Zhur. 1940, No. 2, 111-110. The crystn. of mirabilite and thenardite was investigated. Mirabilite can be obtained in amt. equal to 22% of the wt. of the brine by natural cooling of the brine from 25 to 5°. A basin method comprises extracting mirabilite by solar evapn., pumping the evapd. brine into a reservoir, and natural cooling to 0°, whereupon mirabilite seps. on the bottom in a layer over 1 m. thick. Then the mother liquor is sent to a reservoir for successive evapn. and sepn. of NaCl. Mirabilite can be dehydrated by solar evapn., by neutraliz. by Na<sub>2</sub>S solns., by alk., by NH<sub>3</sub>, by vacuum evapn. and by salting out. Temp. conditions for obtaining NaOH were detd. A new type of rotary furnace for producing Na<sub>2</sub>S, and an electrothermal method for producing NaOH have been developed. The reactions BaS + Na<sub>2</sub>SO<sub>4</sub> + H<sub>2</sub>O → BaSO<sub>4</sub> + Na<sub>2</sub>S + H<sub>2</sub>O, and BaSO<sub>4</sub> → BaS were investigated. A new method for producing solid NaOH from Na<sub>2</sub>S, and a double carbonation of Na<sub>2</sub>S to produce NaHCO<sub>3</sub> and S were developed. Conditions for obtaining Na sulfate in the rotary furnace were detd. Lab. efficiency of Na<sub>2</sub>SO<sub>4</sub> to produce NaOH and H<sub>2</sub>SO<sub>4</sub>, and fusion of bauxite with Na<sub>2</sub>SO<sub>4</sub> and C to produce Al<sub>2</sub>O<sub>3</sub>, Na<sub>2</sub>CO<sub>3</sub> and S were investigated. Com. plant built according to lab. investigations proved very efficient. W. R. Hron*

AISI-513 METALLURGICAL LITERATURE CLASSIFICATION

6-127-100-1-1000

18

C.A

Sea water as an industrial source of bromine. V. P. Pivovarov. *Tranz. Leningrad. M. I. Kaluzh. Polytch. Inst.* 1967, No. 1, 110-23. A new method of extracting bromine from salt solutions of low content, including pure sea water. The carbonates are neutralized with acids, then Br<sub>2</sub> is set free by Cl<sub>2</sub> and distd. by means of an air current. The investigation deals with the changing Br content during the operation and with problems of efficiency. Owing to the presence of carbonates, considerable amounts of Cl<sub>2</sub> are rendered useless according to:  $2\text{OH}^- + \text{Cl}_2 \rightarrow 2\text{ClO}^- + \text{H}_2\text{O}$ . Using H<sub>2</sub>SO<sub>4</sub> for pretreatment results in saving Cl<sub>2</sub>. During evapn. an increasing amt. of Ca and Mg carbonates is pptd. The ratio Br:HCO<sub>3</sub> is changing accordingly from 0.06 at 2°Br. (untreated sea water) to 0.8-0.9 at 20° Br. Consequently the demand for H<sub>2</sub>SO<sub>4</sub> is reduced 10:1. Evapn. of sea water by radiation is limited to 2 kg. Br per cu. m. because the content of MgCl<sub>2</sub> is increasing to the point where vapor pressure declines. The content is then 26-34° Br., most of the NaCl has already pptd. and the crystn. of MgCl<sub>2</sub>·KCl·6H<sub>2</sub>O begins. A higher concn. is economical only if production of MgCl<sub>2</sub> is wanted. Data regarding evapn. in different seasons are also studied. By applying an air current it is possible to produce Br from water having an even lower Br concn. than sea water. 10 references. Ed. P. Hillpert.

AD-6514 METALLURGICAL LITERATURE CLASSIFICATION

SEARCHED	INDEXED	SERIALIZED	FILED

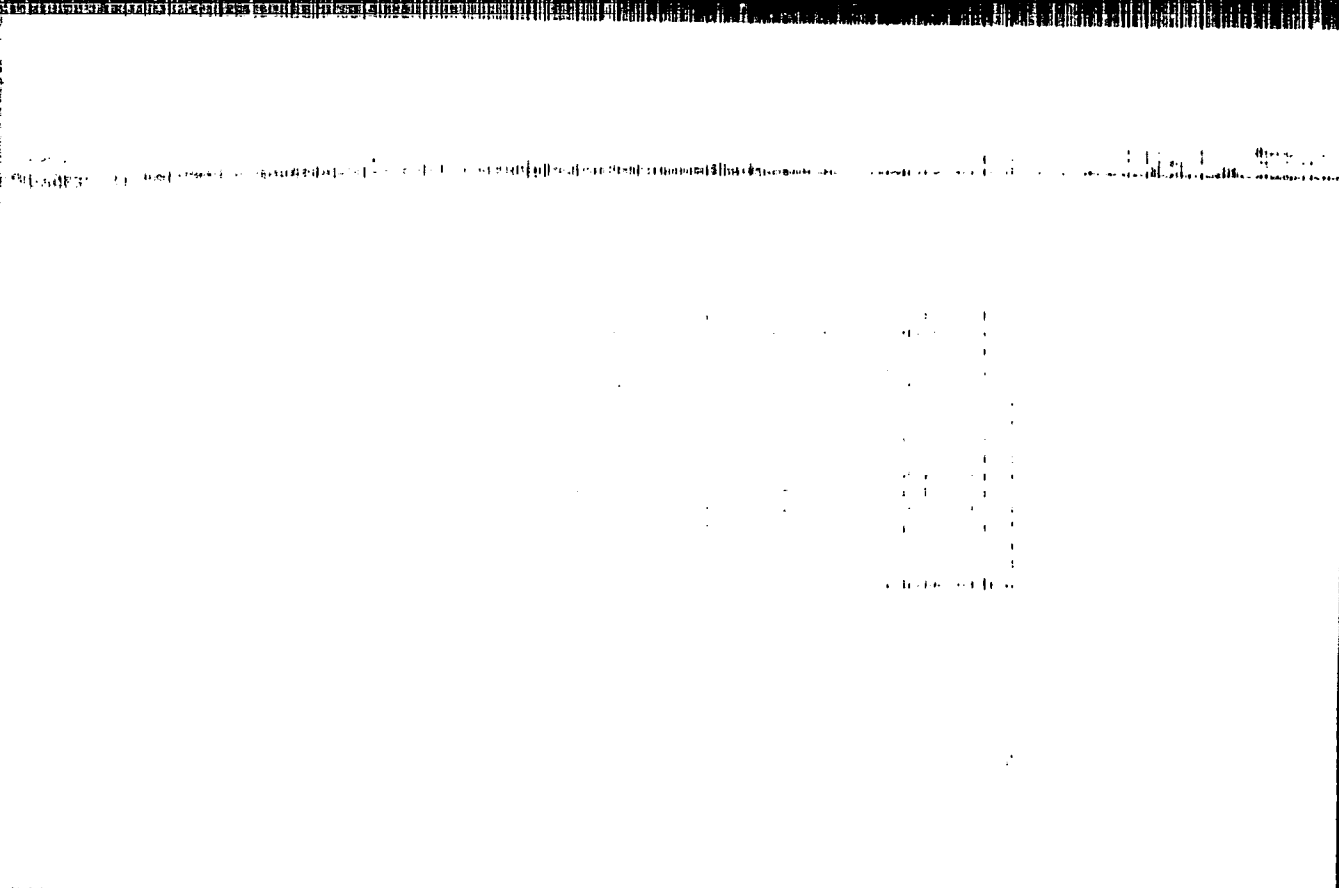
W. P. ...

The dihydrate of sodium chloride. V. P. Illaritskiy, P. Korolev, and B. I. Anisimov. *J. Appl. Chem. U.S.S.R.* 25, 500-77 (1952) (Engl. translation); *Zhur. Priklad. Khim.* 25, 507-15 (1952).—The properties of the dihydrate of NaCl formed in nature are discussed, and the production of pure NaCl by means of the dihydrate is investigated. In the temp. interval 0.15 to  $-21.2^{\circ}$ , the stable phase in the system NaCl- $H_2O$  is the dihydrate. The stability of the solid dihydrate is detd. by the relative humidity of the surrounding air. In natural conditions in chloride lakes having a small content of  $SO_4$  ions in the brine (value of Jaenike's index for  $SO_4$  is 0.8-3.0), the total salt content frequently exceeds 33.0-34.5%. Consequently with a lowering of temp. in winter it is possible for the dihydrate to crystallize from the brine. Pure NaCl is obtained by means of the dihydrate by cooling a satd. soln. to give max. crystals of the dihydrate, which is then sepl. from the mother liquor. At a temp. above  $0.15^{\circ}$ , the sepl. dihydrate breaks up with formation of anhyd. NaCl and a satd. soln. of it. Solns. contg. less than 23.25% NaCl do not sep. the dihydrate on cooling. Calcs. show that by cooling to  $-21.2^{\circ}$ , one metric ton of soln. satd. with NaCl at  $25^{\circ}$  will sep. 42.9 kg. of the dihydrate, contg. 51.3 kg. NaCl. Also, the quantity and yield of NaCl which is formed on melting of the dihydrate is practically const. within the temp. limits of  $0.15^{\circ}$ - $25^{\circ}$ . One metric ton of the dihydrate, melting at  $25^{\circ}$ , yields 481.5 kg. of anhyd. NaCl for a 77.83% yield.

Herbert Liebenluft



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2

The following information was obtained from a review of the files of the Central Intelligence Agency, Office of the Chief of Staff, dated 1974. It is being furnished to you for your information and is not to be disseminated outside your office.



90V/81-59-16-57618

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 16, p 281 (USSR)

AUTHORS: Il'inskiy, V.P., Boytsova, V.F.TITLE: The Sorption of Bromine From a Bromine-Air Mixture by Sulfur Dioxide and the Reprocessing of the Obtained Mixture of Acids to  $\text{Br}_2$  or HBr

PERIODICAL: Sb. tr. Gos. in-ta prikl. khimii, 1958, Nr 41. pp 129-152

ABSTRACT: The reaction of interaction of bromine with  $\text{SO}_2$  in the gaseous and liquid phases is studied and the necessary technological indices of the process are obtained. Methods for processing a mixture of HBr, HCl and  $\text{H}_2\text{SO}_4$  acids to liquid bromine or hydrobromic and sulfuric acids have been developed. It has been shown that the reaction of interaction of  $\text{Br}_2$  from a bromine-air mixture with  $\text{SO}_2$  at room temperature ( $14 - 20^\circ$ ) proceeds quickly and completely at the stoichiometric ratio of  $\text{Br}_2$  and  $\text{SO}_2$ . The sorption of  $\text{Br}_2$  from a bromine-air mixture by an aqueous solution of the mixture of the acids  $\text{HBr} + \text{H}_2\text{SO}_4$  runs to completion, but the consumption of  $\text{SO}_2$  is 30 - 35% higher than in the reaction in the gaseous phase. The reaction products are absorbed to 98 - 99% from the gaseous phase by sprinkling the absorption column with a mixture of acids. The concentration of the HBr acid in the solution can be increased to 20% by means of the re-

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SCV/81-59-16-57618

The Sorption of Bromine From a Bromine-Air Mixture by Sulfur Dioxide and the Reprocessing of the Obtained Mixture of Acids to  $\text{Br}_2$  or  $\text{HBr}$

circulation of the sorbent in the absorption tower. The vapor pressure of  $\text{HBr} + \text{H}_2\text{SO}_4$  over a mixture of  $\text{HBr} + \text{H}_2\text{SO}_4$  acids for the temperatures 0.25 and 50°C is raised with an increase in the  $\text{HBr}$  and  $\text{H}_2\text{SO}_4$  concentrations. The absorption coefficient of  $\text{HBr}$  and  $\text{H}_2\text{SO}_4$ , in the absorption by a mixture of acids, depends principally on the concentration of the sorbent, the temperature and the gas speed and does not depend on the concentration of  $\text{HBr}$  or  $\text{Br}_2$  in the gaseous phase. The value of the absorption coefficient for the absorption of  $\text{HBr}$  at a temperature of 14 - 20°C varies from 37 to 40 m/hr and for  $\text{HCl}$  from 12 to 17 m/hr. The oxidation of the acid mixture ( $\text{HBr} + \text{HCl} + \text{H}_2\text{SO}_4$ ) by chlorine to bromine proceeds practically to completion at the introduction of 1.05 - 1.1 chlorine equ. per 1  $\text{HBr}$  equ. The distillation of bromine from the solution by steam proceeds to completion at a steam consumption of ~5 kg per 1 kg of bromine; bromine obtained in this way corresponds to the type "ch" (pure). The separation of the acid mixture ( $\text{HBr} + \text{HCl} + \text{H}_2\text{SO}_4$ ) by means of distillation makes it possible to obtain  $\text{HBr}$  of 40% and  $\text{H}_2\text{SO}_4$  of 70 - 80%. The yield of  $\text{HBr}$  in the form of a 40% solution is 90 - 95%.

V. Borisova.

Card 2/2

SOV/81-59-16-57619

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 16, p 281 (USSR)

AUTHORS: Il'inskiy, V.P., Rusinova, K.D., Drozdova, Ye.G.

TITLE: The Extraction of Bromine by the Method of Air Desorption From High-Thermal Waters

PERIODICAL: Sb. tr. Gos. in-ta prikl. khimii, 1958, Nr 41, pp 153 - 160

ABSTRACT: The oxidation of the  $\text{Br}^-$ -ion in drilling water by chlorine water and gaseous chlorine at an increased temperature ( $70^\circ\text{C}$ ) has been studied. The pressure of  $\text{Br}_2$ -vapor over Cheleken' drilling water at  $65^\circ\text{C}$ , the coefficient of bromine distribution between the gaseous and liquid phases at 25, 40 and  $65^\circ\text{C}$ , and the coefficient of bromine desorption have been determined.

N. Shirayeva.

Card 1/1

SNV/81-59-16-57620

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 16, p 281 (USSR)

AUTHORS: Ii'inskiy, V.P., Boytsova, V.F., Drozdova, Ye.G., Kuz'mina, N.P., Ru-  
sinova, K.D.

TITLE: The Preparation of Dry Hydrogen Bromide

PERIODICAL: Sb. tr. Gos. in-ta prikl. khimii, 1958, Nr 41, pp 161-170

ABSTRACT: Dry HBr is synthesized from bromine and H<sub>2</sub> in the presence of the "BAU" coal at 600°C; the yield is 91 - 96%. A technological method of purifying and drying HBr has been developed ensuring the preparation of a product containing ~0.04% moisture and H<sub>2</sub>S traces.

N. Shirayeva.

Card 1/1



SOV/81-59-16-57609

Translation from: Referativnyy zhurnal.. Khimiya, 1959, Nr 16, p 280 (USSR)

AUTHORS: Il'inskiy, V.P., Popova, A.V.

TITLE: The Interaction of Chlorides of Alkali Metals With Hydrobromic Acid

PERIODICAL: Sb. tr. Gos. in-ta prikl. khimii, 1958, Nr 41, pp 183-192

ABSTRACT: A new more economic method for obtaining KBr and NaBr has been developed which is based on the interaction of the chlorides of alkali metals and the semi-finished product of bromine production, i.e. solutions of the mixture of the acids  $\text{HBr} + \text{H}_2\text{SO}_4 + \text{H}_2\text{O}$ .

N. Shirayeva.

Card 1/1

SOV/81-59-16-57625

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 16, p 282 (USSR)

AUTHORS: Il'inskiy, V.P., Seferovich, Ya.Ye., Uverskaya, A.T., Volnyanskaya, E.M.  
Vysnenkova, O.I.

TITLE: The Preparation of Crystalline Ferrous Bromide by the Sorption of Bromine  
by a Ferrous Bromide Solution

PERIODICAL: Sb. tr. Gos. in-ta prikl. khimii, 1958, Nr 41, pp 193-209

ABSTRACT: Based on the data of the solubility in the system  $\text{FeBr}_2 - \text{H}_2\text{O}$  and thermo-  
chemical calculations on the system  $\text{FeBr}_2 - \text{Br}_2$  (gas) and  $\text{FeBr}_3 - \text{Fe}$ ,  
the possibility of obtaining  $\text{FeBr}_2$  without smoothing has been proved and  
a method of production has been proposed.

N. Shiryayeva.

Card 1/1

IL'INSKIY, V.P.; KOKOVKINA, L.I.

Production of potassium and sodium iodides from chlorides and hydriodic acid. Med. prom. 13 no.2:20-25 P '59. (MIRA 12:1)

1. Leningradskiy khimiko-farmatsevticheskiy institut.  
(ALKALI METAL IODIDES)  
(HYDRIODIC ACID)

Dissertation: "Vibration Insulation of Industrial Assemblies at the Onset of Dynamic Reactions." Cand Tech Sci, Moscow Inst of Chemical Machine Building, 21 May 54.  
Vechernyaya Moskva, Moscow, 12 May 54.

SO: SUM 284, 26 Nov 1954

IL'INSKIY, V.S.

Protection of laboratory instruments and equipment from vibration.  
Zav.lab.21 no.7:867-868 '55. (MIRA 8:10)

1. Nauchno-issledovatel'skiy institut eksperimental'noy khirurgi-  
cheskoy apparatury i instrumentov  
(Measuring instruments) (Vibration)

IL'INSKIY, V.S. kandidat tekhnicheskikh nauk.

Vibration isolation in equipment of the chemical industry. Khim.  
prom. no.1:35-41 Ja-F '57. (MLSA 10:4)  
(Vibration) (Chemical engineering--Equipment and supplies)

IL'INSKIY, V.S., kandidat tekhnicheskikh nauk.

Vibration absorbers for machine tool and equipment.  
Mashinostroitel' no.2:31-32 F '57.  
(Machinery--Vibration)

(MIRA 10:5)

IL'INSKIY, V.S.

Vibration dampers used for metal-cutting machine tools. Stan. 1  
instr. 28 no. 5:19-20 My '57. (MIRA 10:6)

(Machine tools--Attachments)



117-58-6-16/56

**AUTHOR:** Il'inskiy, V.S., Candidate of Technical Sciences

**TITLE:** Devices for Mechanized Cutting, Welding, Soldering, and Metallization (Prisposobleniya dlya mekhanizirovannoy rezki, svarki, payki i metallizatsii)

**PERIODICAL:** Mashinostroitel', 1958, Nr 6, pp 27-28 (USSR)

**ABSTRACT:** A device which permits the cutting, welding, soldering, and metallization of cylindrical surfaces, pipes, etc. (Figure 1) is described. The cylindrical surface is held by a roller chain. The spring and the rubber ring of the roller ensure an equal and smooth movement of the device on the cylindrical surface. Another device (Figure 2) is used for form-cutting at the junction of pipes with equal or different diameters, and even of pipes with various details, such as cones, balls, etc. The pipes may be connected at any angle by means of this device. At the same time, a part of the detail may be cut off and an opening made in the other. The cutting speed is regulated by changing the rpm of the drive. The device is of simple construction, light and exact. It was developed by the author. There are 2 figures.

**AVAILABLE:** Library of Congress  
Card 1/1

1. Machines-Design 2. Cutting tools 3. Welding 4. Soldering

SOV/122-58-8-26/29

AUTHOR: Ilinskiy, V.S., Candidate of Technical Sciences

TITLE: A Mechanism for Impulsive Feeding of Wire in Apparatus for Welding, Cutting, Depositing, Metallising and Soldering (Mekhanizm impul'snoy podachi provoloki v apparatakh dlya svarki, reški, naplavki, metallizatsii i payki)

PERIODICAL: Vestnik mashinostroyeniya, 1958, Nr 8, pp 84-85 (USSR)

ABSTRACT: Continuous feeding of wire is said to require bulky mechanism. The impulse principle is claimed to accomplish the feeding with less power and so reduces the size of the mechanism, without impairing the uniformity required in practice owing to the high frequency of the impulses. A rotating, eccentric reciprocates a hollow round slider, surrounding the wire. 3 balls inside the slider wedge the wire by pressing against a conical part of the slider bore when the slider moves forward and release the wire when the slider moves back. During the rearward stroke, the wire remains stationary because it is lightly clamped inside the exit nozzle. The wedging balls can be released by a push button. The rate of wire feed is varied by changing the speed of the eccentric or the amount of eccentricity. Experimental units were made in the shops

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SOV/122-58-8-26/29

A Mechanism for Impulsive Feeding of Wire in Apparatus for Welding, Cutting, Depositing, Metallising and Soldering

of the Vsesoyuznyy nauchno-issledovatel'skiy institut avtogennoy obrabotki metallov (All-Union Scientific Research Institute of Metal Welding) with satisfactory results. There is 1 figure.

1. Welding--Equipment 2. Soldering--Equipment 3. Wire--Handling  
4. Feed mechanisms--Performance

Card 2/2

SOV/135-59-1-7/18

AUTHOR: Il'inskiy, V.S., Candidate of Technicial Sciences

TITLE: The Optimum Technology of Oxygen Steel Cutting  
(Optimal'nyye rezhimy kislородnoy rezki stali)

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 1, pp 22-24  
(USSR)

ABSTRACT: A series of experiments were carried out to find the optimum technology in oxygen cutting by determining the interdependence of prevalent parameters, such as oxygen consumption, pressure and density and metal thickness. Formulae were developed to compute the cutting rate, and a comparison of results obtained by calculation and experiments showed a satisfactory agreement. The

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The Optimum Technology of Oxygen Steel Cutting

optimum parameters for cutting low-carbon steel are given. There are 6 graphs, 1 diagram and 2 tables.

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Il'inskiy, V. S.

Voprosy izolyatsii vibratsii i udarov (Problems in the Isolation of Vibration and Shocks). Moscow, Izd-vo "Sovetskoye radio," 1960. 158 p. No. of copies printed not given.

Ed.: Yu. I. Sukhanov; Tech. Ed.: A. A. Sveshnikov.

**PURPOSE:** This book is intended for engineers designing radio equipment. It may also be used as a manual for designing vibration-insulating systems.

**COVERAGE:** The book discusses theoretical and practical problems in protecting various kinds of equipment against vibration and shocks. It deals with a number of currently-used protecting devices and gives such practical details as the data needed to select protective elements for a given equipment. No personalities are mentioned. There are 29 references, 6 Soviet, 21 English and 2 German.

Card ~~1/4~~

ZHMUR, A.S.; IL'INSKIY, V.S.; NENYUKOV, V.P.

Single action accelerometers. Izv.tekh. no.12:12-16  
D '62.

(MIRA 15:12)

(Accelerometers)

IL'INSKIY, V. V.

"Investigation of the Effect of Water-Dissolved Air on Cavitation of Hydroturbines." Cand Tech Sci, Khar'kov Polytechnic Inst imeni V. I. Lenin, Min Higher Education USSR, Khar'kov, 1955. (KL, No 15, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).



1 1 1955 21 12 17  
VASIL'YEV, A.; ZAPASNOY, A.; IL'INSKIY, Ye.; PAKUSHIN, V.; SHEVCHUK, S.

Business accounting for highway-operation sections. Avt.dor.17  
no.1:6 J1-Ag'54. (MIRA 8:10)

(Roads--Estimates and costs)

IL'INSKIY, YE. M.

Mar 1948

USSR/Mines  
Mining Machinery  
Mining Methods

"Mining with Open Hoppers in the Temir-Tau Mine and the Bol'shaya Gora Open-Cut Mine,"  
G. A. Gavelich, Ye. M. Il'inskiy, Mining Engineers, 2½ pp

"Gornyy Zhur" No 3

Describes in detail the accumulative extraction method of mining used in the Temir-Tau magnetite mine and the Bol'shaya Gora open-cut dolomite mine, and explain the open-hopper systems with aid of diagrams.

PA 51T68

IL'INSKIY, YE. M.

USSR/Mining Methods  
Coal

Sep 48

"Hydraulic Stripping at the Krivoy Rog Coal Field,"  
Ye. M. Il'inskiy, 4 pp

"Mek Trud i Tyazh Rabot" No 9

This operation was first tried at mine No 5 of subject coal fields. Briefly describes fundamentals of the operation and results. Tables show relative production for 7-month period in 1946. Suggested that comprehensive study of actual performance of subject method will show even better production results.

28/491107

IL'INSKIY, Ye.V., kandidat veterinarnykh nauk.

Tissue therapy in surgery. Veterinariia 32 no.9:58-60 8 '55.  
(MIRA 8:12)

1. Khar'kovskiy veterinarnyy institut.  
(TISSUE EXTRACTS) (VETERINARY SURGERY)

USSR / General Problems of Pathology. Transplantation U-2  
of Tissues and Tissue Therapy.

Abs Jour: Ref Zhur-Biol., No 15, 1958, 70737.

Author : ~~Illinskiy Ye. V.~~  
Inst : Novocherkassk Zootechnical-Veterinary Institute.  
Title : Comparative Evaluation of Certain Methods in  
Tissue Therapy.

Orig Pub: Tr. Novocherkasskogo zootekhn-vet in-ta, 1957,  
vyp 10, 371-374.

Abstract: Various methods of tissue therapy were used in the  
treatment of the following: 54 horses with purulent  
necrosis in the withers region; 73 animals (horses,  
large horned cattle, dogs and cats) with eye dis-  
eases; 81 animals with ulcers; 40 cows with chronic  
purulent-catarrrhal endometritis. The treatment in-  
cluded: 1. implantation of tissues preserved accord-  
ing to Filatov or treated with a two percent solu-

Card 1/2

IL' INSKIY, Ye.V.

Automatic stand tests of mechanisms with pneumatic drives. Avt.  
prom. no.6:29 Je '60. (MIRA 13:8)

1. L'vovskiy avtobusnyy zavod.  
(Motorbuses--Pneumatic equipment)  
(Electronic instruments)

S/188/61/009/002/005/010  
B113/B2039.2572  
AUTHORS:

Il'inskiy, Yu.A., Karasev, M.D.

TITLE:

Study of transition processes in a two-circuit parametric transformer with sum and difference output frequency

PERIODICAL:

Vestnik Moskovskogo universiteta. Seriya 3, fizika, astronomiya, no. 2, 1961, 12 - 18

TEXT: First, the authors analyze the transition processes. According to Ref. 1 (Karasev, M.D. UFN, LXIX, vyp. 2, 1959), a two-circuit parametric transformer can be described by a system of equations,

Eq. (1)  $\ddot{x}_1 + \omega_1^2 x_1 = 2\delta_1 x_1 + \alpha_1 f(\omega t)(x_1 + x_2) + \beta_1$ . The frequency of the parametric change  $\omega$  by the relation  $\omega = \omega_2 \pm \omega_1 \pm \Delta$  is related to the circuit frequencies. The upper sign holds for a rotating (difference) modulator, the lower one for a non-rotating (sum) modulator;  $\Delta$  is a slight mistuning. The external force is supposed to be introduced in one circuit only so that the slowly variable, complex amplitude  $E_2$  of the external

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Study of transition processes ...

force vanishes and the frequency  $p = \omega_1 + j\Delta_1$ . The damping factor of oscillations after switching off the external signal is obtained from Eq. (2)

$$x_1 = |z_1^{(1)}| e^{\text{Re} \lambda_1 t} \cos \left[ \left( \omega_1 + \frac{\Delta}{2} + |m \lambda_1| \right) t + \arg z_1^{(1)} \right] +$$

$$+ |z_1^{(2)}| e^{\text{Re} \lambda_1 t} \cos \left[ \left( \omega_1 + \frac{\Delta}{2} + |m \lambda_1| \right) t + \arg z_1^{(2)} \right],$$

$$x_2 = |z_2^{(1)}| e^{\text{Re} \lambda_2 t} \cos \left[ \left( \omega_2 \mp \frac{\Delta}{2} \mp |m \lambda_2| \right) t \mp \arg z_2^{(1)} \right] +$$

$$+ |z_2^{(2)}| e^{\text{Re} \lambda_2 t} \cos \left[ \left( \omega_2 \mp \frac{\Delta}{2} \mp |m \lambda_2| \right) t \mp \arg z_2^{(2)} \right].$$

$$z_1^{(1)} = \frac{E}{2\omega_1(\lambda_1 - \lambda_2)} \frac{b_1 + j\frac{\Delta}{2} + \lambda_2}{\lambda_1 + j\frac{\Delta}{2} - j\Delta_1}$$

$$z_2^{(1)} = \mp \frac{E}{2\omega_2(\lambda_1 - \lambda_2)} \frac{j\omega_1/\pi}{2\omega_2} \frac{1}{\lambda_1 + j\frac{\Delta}{2} - j\Delta_1}$$

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B113/B203

Study of transition processes ...

and the formation of oscillations after switching on the external force proceeds by the law  $x_1^s = x_1^{(0)}(t) - x_1^p(t)$ , the steady solution  $x_1^{(0)}$  having the form of Eq. (3)

$$x_1^{(0)} = |x_1^{(0)}| \cos(\omega t + \arg x_1^{(0)})$$

$$x_1^p = |x_1^p| \cos((\omega \mp \rho) t \mp \arg x_1^p)$$

$$x_1^{(0)} = \frac{E}{2j\omega_1} \frac{b_2 - j(\Delta - \Delta_1)}{(\lambda_1 + j\frac{\Delta}{2} - j\Delta_1)(\lambda_2 + j\frac{\Delta}{2} - j\Delta_1)}$$

$$= \frac{E}{2j\omega_1} \frac{b_2 - j(\Delta - \Delta_1)}{(b_1 + j\Delta_1)(b_2 - j(\Delta - \Delta_1)) \mp \frac{\sigma_1 \sigma_2}{4\omega_1 \omega_2} |f_1|^2}$$

$$x_2^{(0)} = \pm \frac{E}{2j\omega_1} \frac{j\omega_2 f_1}{2\omega_2} \frac{1}{(\lambda_1 + j\frac{\Delta}{2} - j\Delta_1)(\lambda_2 + j\frac{\Delta}{2} - j\Delta_1)}$$

$$= \pm \frac{E}{2j\omega_1} \frac{j\omega_2 f_1}{2\omega_2} \frac{1}{(b_1 + j\Delta_1)(b_2 - j(\Delta - \Delta_1)) \mp \frac{\sigma_1 \sigma_2}{4\omega_1 \omega_2} |f_1|^2}$$

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B113/B203

Study of transition processes ...

The trajectories of the roots  $\lambda_{1,2}$  characteristic of transition processes and steady behavior having the form of Eq. (A)

$$\lambda_{1,2} = -\frac{\delta_1 + \delta_2}{2} \pm \sqrt{\frac{1}{4}(\delta_1 - \delta_2 + j\Delta)^2 + \frac{\alpha_1 \alpha_2}{4\omega_1 \omega_2} |f_1|^2}$$

where  $f_1$  is determined by the Fourier expansion of the function  $f(\omega t) = \sum_k f_k e^{i\omega_k t}$ , are shown in Figs. 1 and 2 in the complex plane with a change in the parameter  $\Delta$  and

$k^2 = \frac{\alpha_1 \alpha_2}{4\omega_1 \omega_2} |f_1|^2$ . The trajectories of  $\lambda_2$  are on the left, those of  $\lambda_1$  on the right of  $-\frac{\delta_1 + \delta_2}{2}$ ; the trajectories of the rotating modulator

are within  $-\delta_2$  and  $-\delta_1$ , those of a non-rotating modulator are without. On the basis of Eq. (2) and Eq. (3) and Figs. 1 and 2, the following has been found: In a rotating modulator, the transition process is the sum of two damped harmonic oscillations (with switched-off external signal), or the sum of two damped and one steady oscillation (with switched-on exter-

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## Study of transition processes ...

nal force). For a non-rotating modulator, it follows from Eq. (3) that the frequency characteristic of the amplifier is represented by the product of the frequency characteristics of individual circuits. Experiments dealt with a low-frequency parametric transformer with circuit frequencies of about 100 and 400 kc/sec. In conformity with Eq. (2), the transition processes had two constant times, and pulsations in the transition processes were observed in the case of mistuning. Further, it was found that the duration of the transition process, in the case of large  $K$ , was proportional to  $K$  ( $K$  being the voltage amplification factor in the first circuit of a regenerative transformer). The duration of the transition process was the time during which the oscillation amplitude attained the

$(1 - e^{-1})$ -fold of its steady value. In a non-rotating modulator, the duration of the transition process dropped monotonically with increasing  $k^2$  in both circuits. The time of formation in the second circuit was slightly longer than in the first one due to a slow increase of oscillations in the second circuit at the beginning of the formation process. There are 6 figures and 1 Soviet-bloc reference.

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B/188/61/000/002/003/010  
B113/B203

Study of transition processes . . . .

ASSOCIATION: Kafedra teorij kolebanij (Department of the Theory of  
Oscillations)

SUBMITTED: June 19, 1960

Card 6/8

S/188/61/000/006/001/007  
B108/B138

9,2572

AUTHORS: Il'inskiy, Yu. A., Karasev, M. D.

TITLE: Double-tuned parametric oscillator with external feed

PERIODICAL: Moscow Universitet. Vestnik. Seriya III. Fizika, astronomiya, no. 6, 1961, 3 - 11

TEXT: A double-tuned parametric amplifier operates as an oscillator if the feed amplitude is high enough. A self-excited oscillator whose amplitude is limited by a non-linear resistor in one of its circuits is considered. Synchronization of the oscillator with an external force is also dealt with. In experimental investigations, the authors used a parametric oscillator with frequencies of 100 and 400 kops in the two circuits, with semiconducting diodes of the types ДПД-27 (DPTs-27) and Д809 (D809) serving as nonlinear capacity. It was found that the amplitude is limited either by a nonlinear resistance or by a dependence of the parametric connection between the circuits on amplitude fluctuations. Perturbations that are due to the nonlinear reactance lead to a

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Card 1/2

Double-tuned parametric...

S/188/51/000/006/001/007  
B108/B138

distortion of the amplitude-frequency characteristics. An external force produces the same synchronization and beat phenomena as in a tube generator. In the r.f.-range, calculated and experimental results are entirely consistent. There are 6 figures and 6 Soviet references. VB

ASSOCIATION: Kafedra teorii kolebaniy (Department of the Theory of Oscillations)

SUBMITTED: January 30, 1961

Card 2/2

24895

S/109/61/006/008/015/018  
D207/D3049.2572AUTHORS: Il'inskiy, Yu.A., and Karasev, M.D.

TITLE: Transients in a two circuit parametric amplifier

PERIODICAL: Radiotekhnika i elektronika, v. 6, no. 8, 1961,  
1397 - 1400

TEXT: The authors give a short report on the theoretical and experimental analysis of transients in a two circuit parametric amplifier. The theoretical analysis is carried out assuming a small signal. The equivalent ccts of two circuit parametric amplifiers are shown in Fig. 1. These are systems with two degrees of freedom and with periodically varying reactive element. The equations for the above systems may be written as

$$\ddot{x}_i + \omega_i^2 x_i = \mu (-2\delta_i \dot{x}_i + \alpha_i / (\omega_i) (x_1 + x_2) + e_i) \quad (1)$$

where  $i = 1, 2$  the index related to either the first or the second

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Transients in a two circuit ...

S/109/61/006/008/015/018  
D207/D304

circuit;  $e_1$  - external driving force;  $e_2 = 0$ ;  $\mu$  - a small parameter;  $\sigma$  - attenuation of the  $i$ -th circuit;  $f$  - a periodic function with period 2;  $\omega$  - the frequency of change of the parameter. It follows from Eq. (1) that the cct attenuation and modulation depth are assumed to be small, so that the  $Q$  of the circuits is high and parametric coupling weak; oscillations in the system are very nearly harmonic. The constant coupling may be large. Eq. (1) can be solved by one of the quasi-linear methods, e.g. by averaging. Eq. (1) is first reduced to standard form by assuming  $\omega = \omega_1 + \omega_2$  and putting

$$x_i = Z_i' e^{j\omega_1 t} + Z_{-i}' e^{-j\omega_1 t}, \quad \dot{x}_i = j\omega_1 (Z_i' e^{j\omega_1 t} - Z_{-i}' e^{-j\omega_1 t}),$$

where  $i = 1, 2$ ;  $Z_{-i}' = Z_i'^*$  - complex amplitudes, so that after averaging the shortened form

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14892

S/109/61/006/008/015/018.  
D207/D304

Transients in a two circuit ...

$$\dot{z}_1 = \mu \left\{ -(\delta_1 + j\Delta_1 + \frac{j\alpha_1 f_0}{2\omega_1})z_1 - \frac{j\alpha_1 f_1}{2\omega_1}z_{-2} + \frac{E}{2j\omega_1} \right\}, \quad \dot{z}_{-2} = \mu \left\{ -(\delta_2 - j\Delta_2 - \frac{j\alpha_2 f_0}{2\omega_2})z_{-2} + \frac{j\alpha_2 f_{-1}}{2\omega_2}z_1 \right\} \quad (2)$$

is obtained where  $f_0, f_1, f_{-1}$  - the Fourier coefficients of function  $f(\omega t)$

$$f(\omega t) = \sum_{k=-\infty}^{k=+\infty} f_k e^{j\omega k t}$$

It is assumed further that  $f_0 = 0$  since

$$\Delta_1 = \Delta_1 + \frac{\alpha_1 f_0}{2\omega_1}$$

Card 3/7

Transients in a two circuit ...

S/109/61/006/008/015/018  
D207/p204

can be introduced and the detuning due to the constant component of coupling thus taken into account, the solution of linear equations (2) with constant coefficients is easily found for any external force E and any initial conditions. E.g. the transient state can be determined, i.e., the presence of oscillations in the system; when E = constant and initial condition  $Z_1(0) = 0$  the equations have then the shape of matrix

$$\dot{Z} = AZ + B,$$
$$Z = \begin{pmatrix} Z_1 \\ Z_2 \end{pmatrix}, \quad B = \mu \frac{E}{Z/\omega_1} \begin{pmatrix} 1 \\ 0 \end{pmatrix}.$$

Its solution, satisfying the initial conditions  $Z(0) = 0$  is

$$Z = \int_0^t e^{A(t-s)} B(s) ds =$$
$$\frac{1}{\mu^2 (\lambda_2 - \lambda_1)} \left\{ \frac{1 - e^{\mu \lambda_1 t}}{\lambda_1} [AB - \lambda_1 B] - \frac{1 - e^{\mu \lambda_2 t}}{\lambda_2} [AB - \lambda_2 B] \right\} \quad (3)$$

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24891

S/109/61/006/008/015/018  
D207/DJ04

Transients in a two circuit ...

It follows that in a two circuit parametric amplifier the time of establishment of the steady state does not depend on the relationship between the phase of the suddenly applied signal and the phase of pulsed variation of the parameter: that at optimum tuning ( $\Delta_1 = \Delta_2 = 0$ ) the characteristic roots are real. With  $f_1 = 0$  (no varying parameter) these are essentially equal to  $-\delta_1$  and  $-\delta_2$  and diverge symmetrically with respect to the centre of  $(-\delta_2, -\delta_1)$  with increasing  $|f_1|$ . When the smaller of the roots (absolute value) reaches zero the system becomes self oscillating. When this root assumes smaller absolute values then the duration of the transient process increases. Finally with the detuning of the sets ( $\Delta_1$  or  $\Delta_2 \neq 0$ ), then  $\text{Im } \lambda_{1,2} \neq 0$  and the transient contains damped oscillations. The theory was experimentally applied to a balanced parametric amplifier with its first set tuned to 100 Kc/s and its se-

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37422

S/18B/62/000/002/008/013  
B154/B102

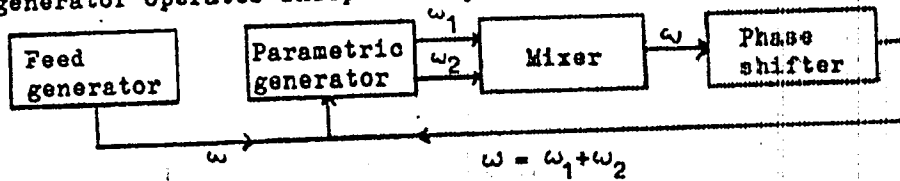
9,2580 (2301)

AUTHOR: Il'inskiy, Yu. A.

TITLE: About a two-circuit parametric generator

PERIODICAL: Moscow. Universitet. Vestnik. Seriya III. Fizika, astronomiya, no. 2, 1962, 60-67

TEXT: For rational ratios  $\omega_1/\omega_2$ , the oscillations (frequencies  $\omega_1$  and  $\omega_2$ ) generated in a two-circuit generator by a frequency  $\omega$  are investigated. The author first demonstrates the existence of a range in which the ratio  $\omega_1/\omega_2$  is rational for  $\omega_1 + \omega_2 = \omega$ . In the arrangement shown the generator operates independently of an external source:



Card 1/3

About a two-circuit parametric ...

S/188/62/000/002/008/013  
B154/B102

When the relation between the natural frequencies  $\omega_{10}$  and  $\omega_{20}$  of the circuits is  $\omega_{20} \approx n\omega_{10}$ , the oscillations can be synchronized by a single external voltage, since also the phases are related by  $n$ . The frequency of this synchronizing voltage has to be close to the natural frequency of one of the circuits. Measurements of the amplitude  $E_1$  of the synchronizing voltage made at  $\omega_{20} \approx 3\omega_{10}$  and  $102.3 \text{ kc} \leq \frac{\omega_1}{2\pi} \leq 103.2 \text{ kc}$  show that the frequencies  $\omega_1$  and  $\omega_2$  are synchronized ( $\omega_2 = 3\omega_1$ ). In this case the range of synchronization virtually does not depend on  $E_1$ , because it is determined by the oscillations themselves and the oscillations essentially do not depend on the synchronizing voltage. Influences on the oscillations by the synchronizing voltage and an expansion of the synchronization band with increasing  $E_1$  were only observed in a few cases. The investigations show that a generator with external excitation can be used as an effective frequency splitter. The band width is maximum if the quality factors of the circuits are almost equal. There are 9 figures.

Card 2/3

About a two-circuit parametric ...

S/188/62/000/002/008/013  
B154/B102

ASSOCIATION: Kafedra teorii kolebaniy, Moskovskiy universitet  
(Department for the Theory of Oscillations, Moscow  
University)

SUBMITTED: July 3, 1961

Card 3/3

IL'INSKIY, Yu.A.

Effect of field gas processing on the efficiency of gas transportation. Gaz. dele no.7:30-33 '65. (MIRA 18:9)

1. Khar'kovskoye upravleniye magistral'nykh gasoprovodov.

IL' INSKIY, Yu. A.

Clinical aspects and therapy of protosan colitis. Klin. med., Moskva 31  
no.6:63-68 June 1953. (GML 25:1)

1. Sixth Course Therapeutic Faculty Student. 2. Of the Clinic for In-  
fectious Diseases (Director -- Prof. A. F. Bilibin), Second Moscow Medi-  
cal Institute imeni I. V. Stalin.



EXTRACTA MEDICA Sec 6 Vol 13/7 Internal Ed. July 65

3427. INVESTIGATION OF THE DISTURBANCE OF THE CARBOHYDRATE FUNCTION OF THE NEURO-GLANDULAR SYSTEM OF THE LIVER IN EPIDEMIC HEPATITIS (Russian text) - Ilinskiy Yu. A. Dept. of the Pirogov Second Med. Inst. of Infect. Dis., Moscow - *BOLEZNI BOTKINA* (Moskva) (Eds: Tareeva E. M. and Shubladze A. K.) 1956 (235-244)

The carbohydrate function of the liver was studied in healthy subjects and in patients with various forms of epidemic hepatitis using Speranski's method which is based on the application of stimulants of varying strength (40 ml. and 5 ml. 40% i. v. glucose solution). In the healthy subjects the curve obtained corresponded exactly to the strength of the stimulant applied. In the 86 investigated patients with epidemic hepatitis (16 mild, 52 moderately severe and 18 severe) the responses did not correspond to the strength of the stimulant. In some cases at the peak of the illness identical or similar rises of the glycaemic curves were observed as a response to the strong as well as to the weak stimulant; in other cases the rise in response to the weak stimulant was higher than to the strong; a negligible rise of the glycaemic curves in response to the strong or either stimulant was observed in isolated cases. These results are to be regarded as an expression of phasic conditions of the neuro-glandular system of the liver - the compensating, paradoxical and inhibitory stages. Differentiated responses corresponding to the strength of the applied stimulant were observed in mild cases of infectious hepatitis and in the period of remission but with a higher hyperglycaemic coefficient than in the healthy subjects. In cases of recovery with residual symptoms a differentiated response to the i. v. injection of stimulants of varying strength was present for a long time, with high hyperglycaemic coefficients.

Guseva - Moscow (S)

USSR/Virology - Viruses of Man and Animals. E  
Viruses of Hepatitis.

Abs Jour : Ref Zhur Biol., No 6, 1959, 23890

Author : Il'inskiy, Yu.A.

Inst : Moscow Medical Institute

Title : Some Colloid Reactions of the Blood in Botkin's Disease

Orig Pub : Uch. zap. 2-y Mosk. med. in-t, 1957, 7, 53-57

Abstract : No abstract.

Card 1/1

KRASNOGOLOVETS, V.N.; IL'INSKIY, Yu.A.

Colimycin and mycerin therapy of acute dysentery [with summary in English]. Antibiotiki 3 no.6:102-107 N-D '58. (MIRA 12:2)

1. Klinika infektsionnykh bolezney (sav. - chlen-korrespondent AMN SSSR prof. A.F. Bilibin) II Moskovskogo meditsinskogo instituta imeni N.I. Pirogova.

(DYSENTERY, BACILLARY, ther.  
colimycin & mycerin (Rus))

(ANTIBIOTICS, ther. use,  
colimycin & mycerin in dysentery (Rus))

IL'INSKIY, Yu.A. (Moskva)

Pneumonia in ornithosis. Klin.med. no.12:96-99 '61.

(MIRA 15:9)

1. Iz kafedry infektsionnykh bolezney (zav. - deystvitel'nyy chlen AMN SSSR prof. A.F. Bilibin) II Moskovskogo meditsinskogo instituta imeni N.I. Pirogova.

(PNEUMONIA)

(ORNITHOSIS)

IL'INSKIY, Yu.A.; MARKOVA, Ye.A. (Moskva)

Forme fruste of Botkin's disease. Klin.med. 39 no.3:46-50  
Mr '61. (MIRA 14:3)

1. Iz kliniki infektsionnykh bolezney (dir. - deystvitel'nyy  
chlen AMN SSSR prof. A.P. Bilibin) II Moskovskogo meditsinskogo  
instituta imeni N.I. Pirogova.  
(HEPATITIS, INFECTIOUS)

BILIBIN, A.F., prof.; IL'INSKIY, Yu.A., kand.med.nauk

Epidemiology and clinical aspects of ornithosis. Klin.med. no.3:  
34-38 '62. (MIRA 15:3)

1. Deystvitel'nyy chlen AMN SSSR (for Bilibin).  
(ORNITHOSIS)

BILIBIN, A.F., prof., red.; IL'INSKIY, Yu.A., red.

[Clinical problems of infectious pathology] Klinicheskie voprosy infektsionnoi patologii. Pod red. A.F.Bilibina. Moskva, Meditsina, 1965. 273 p. (MIRA 18:12)

1. Moscow. Vtorey meditsinskiy institut. 2. Deystvitel'nyy chlen AMN SSSR (for Bilibin).

IL'INSKIY, YU. A.

USSR/Medicine - Therapeutic Sleep, Narcosis

Jul/Aug 51

"Treatment With Prolonged Sleep Brought About by Introducing Intravenously an Alcohol-Containing Solution By the Continuous Drip Method," O. V. Karbikov, Ye. S. Zorina, Yu. A. Il'inskiy

"Nevropatol i Psikhiat" Vol XI, No 4, pp 38-40

Describes clinical aspects of treating psychopathic patients by intravenous introduction of alc and technique of introducing a narcotic mix which has the following compn: sodium chloride 4.0, calcium chloride 1.0, glucose 25.0, distilled alc 60.0-120.0, distilled water up to 500.0

198758



IL'INSKIY, YU. A.

KERBIKOV, O. V., ZORINA, YE. S., IL'INSKIY, YU. A.

Blood - Analysis and Chemistry

Concerning Prof. Ye. Yu. Karu's remarks "On the determination of alcohol in the blood by the Vidmark method." Zhur. nevr, i psikh, 52, no. 3, March 1952.

Monthly List of Russian Accessions, Library Of Congress, August, 1952. Unclassified

IL'INSKIY, Yu. A.

"Clinicoexperimental Data Concerning the Development of One of the Sleep Therapy Methods (The Treatment of Psychotic Patients by Prolonged Sleep Produced by the Intravenous Drip of an Alcohol-Containing Solution)." Cand. Med Sci, Moscow State Medical Inst, Moscow, 1953. (RZhBiol, No 7, Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)  
SO: Sum. No. 556, 24 Jun 55

ZHARIKOV, N.M.; IL'INSKIY, Yu.A.; KERBIKOV, O.V.; MATVIYETS, I.S.

Data on immunological reactivity in schizophrenia. Zhur.nevr. i psikh.  
56 no.8:612-621 '56. (MLRA 9:11)

1. Kafedra psikhiatrii II Moskovskogo meditsinskogo Instituta (sav. -  
prof. O.V.Kerbikov) i laboratoriya tulyaremii (sav. - prof. N.G.  
Olsuf'yev) Instituta epidemiologii i mikrobiologii imeni N.F.Gamalei  
AMN SSSR, Moskva.

(SCHIZOPHRENIA, immunology,  
(Rus))

*IL'INSKIY, Ya.A.*  
IL'INSKIY, Ya.A.

Struggle against refusal of food and emaciation in psychiatric patients. Zhur.nevr. i psikh. Supplement:91-92 '57. (MIRA 11:1)

1. Kafedra psikhiiatrii (zav. - prof. O.V.Kerbikov) II Moskovskogo meditsinskogo instituta imeni I.V.Stalina.  
(PSYCHOSES) (APPETITE) (ALCOHOL--THERAPEUTIC USE)

IL'INSKIY, Yu.A.

"Schizophrenia" [in English and German] by Derek Richter.  
Reviewed by I.U.A. Il'inskii. Sov.med. 23 no.6:156-157  
Je '59. (MIRA 12:9)

(SCHIZOPHRENIA)

(RICHTER, DEREK)

IL'INSKIY, Yu.A.; KULIKOV, L.S.

Immunological reactivity of mental patients following therapy  
with aminazine, insulin, and other methods [with summary in French].  
Zhur.nevr. i psikh. 59 no.2:156-159 '59. (MIRA 12:4)

1. Kafedra psikiatrii (sav. - prof. O.V. Kerzhikov) II Moskovsko-  
go meditsinskogo instituta im. N.I. Pirogova.  
(MENTAL DISORDERS, immunol.  
eff. of ther. (Rus))

IL'INSKIY, Yu.A.

Allergic reactivity of patients with schizophrenia. Zhur. nevr. i  
psikh. 61 no.4:549-556 '61. (MIRA 1417)

1. Kafedra psikiatrii (sav. - prof. O.V.Kerbikov) i kafedra patologiche-  
skoy fiziologii (sav. - prof. A.D.Ado) II Moskovskogo meditsinskogo  
instiuta imeni N.I.Pirogova.  
(SCHIZOPHRENIA) (ALLERGY)

IL'INSKIY, Yu.A.

Changes in some allergic indices in the treatment of schizophrenia patients. Probl. sud. psikh. no.13:74-84 '62. (MIRA 18:9)



IL'INSKIY, Yu.A., kand. med. nauk

Antistaphylococcal immunity in schizophrenia. Vrach. delo no.11:  
79-82 N'63 (MIRA 16:12)

1. Kafedra psikhatrii (sav. - deystvitel'nyy chlen ANM SSSR,  
prof. O.V.Kerbikov) 2-go Moskovskogo instituta.

IL'INSKIY, Yu.A.

Immunological reactivity of patients with schizophrenia during reserpine treatment. Vest. AMN SSSR 17 no.1:43-51 '62. (MIRA 15:3)

1. Iz kafedry psikiatrii (sav. - chlen-korrespondent AMN SSSR prof. O.V. Kerbikov) II Moskovskogo meditsinskogo instituta imeni N.I. Pirogova.

(RESERPINE)

(SCHIZOPHRENIA)

(IMMUNOLOGY)

5 (2), 5 (4)  
AUTHORS:SOV/74-5-1-2/45  
Shchukarev, S. A., Oranskaya, M. A., Tolmacheva, T. A.,  
Il'inskiy, Yu. S.

TITLE:

Thermal Dissociation of Vanadium Dichloride

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1960, Vol 5, Nr 1, pp 8 - 11  
(USSR)

ABSTRACT:

Publications give different data for the formation enthalpy  $\Delta H$  of  $VCl_2$ . The authors report on their indirect determination of  $\Delta H$  by investigation of the equilibrium of  $VCl_2$  reduction by means of H at  $750^\circ$ ,  $775^\circ$ ,  $800^\circ$ , and  $825^\circ$ . The method is described in references 9,10. The experiments lasted for 100-200 hours. Table 1 shows the values of the dissociation pressure of  $VCl_2$ . Figure 1 shows the linear dependence of  $\lg P_{VCl_2}$  on  $\frac{1}{T}$ . The computed values of the formation enthalpy  $\Delta H$  and of the absolute entropy  $\Delta S$  are shown in table 2. The value found for  $\Delta H$  is in good agreement with that assumed by the U.S.A. Bureau of Standards. Figure 2 and table 3 show the opposite behavior of

Card 1/2

Thermal Dissociation of Vanadium Dichloride

SOV/78-5-1-2/45

the dissociation enthalpy on the one hand and of the sum of the two ionization potentials and the sublimation energy on the other hand in the case of elements with the atomic numbers 21 - 30. There are 2 figures, 3 tables, and 18 references, 9 of which are Soviet.



SUBMITTED: October 27, 1958

Card 2/2

IL'INYKH, A., inzh.

Modernizing a "rondel" machine. Prom.koop. 1) no.5:12  
My '59. (MIRA 12:9)

1. Obipromsovet, g.Perm.  
(Pearl button industry--Equipment and supplies)

**ZININ, V.P.; IL'DNYEH, A.F.**

Automatic electrically operated vintilation door. Trudy Unipromedi  
no.2:174-182 '57. (MIRA 11:11)  
(Mine ventilation) (Automatic control)

PETROV, I.P.; dotsent; ~~IL'INYKH, A.F.~~, inzh.

Multichannel TU-TS system with polarity-amplitude block  
selection. Izv.vys.ucheb.zav.; gor.shur. no.4:61-86 '59.  
(MIRA 13:5)

1. Sverdlovskiy gornyy institut imeni V.V.Valdhrusheva.  
Rekomendovana kafedroy gornoy elektrotehniki.  
(Mine communications)  
(Remote control)  
(Telemetry)

IL'INYKH, A.F., inzh.

Selection of an efficient TU-TS system for remote control of substations. *Izv.vys.ucheb.sav.; gor.shur. no.3:133-138 '61.*

(MIRA 15:4)

1. Sverdlovskiy gornyy institut imeni V.V.Vakhrusheva; rekomendovana kafedroy obshchey elektrotehniki Sverdlovskogo gornogo instituta,  
(Mine communications) (Remote control)



ARSHINSKIY, V.M.; BAGAUTINOV, G.A.; BESPALOV, M.V.; GASPARIKOVICH, P.I.;  
COLOMIDOV, I.N.; GOLUBOV, G.B.; GRIN, L.T.; ZEL'SKIY, S.A.;  
~~IL'INYKH, A.F.~~; KOZIN, V.Z.; KRYUKOV, V.P.; KULAKOV, S.N.;  
LUKAS, V.A.; MINEYEV, V.A.; PETROV, Yu.S.; PIRUSHKO, M.G.;  
PROKOF'YEV, Ye.V.; REBETS, B.A.; STARTSEV, N.V.; THOP, A.Ye.,  
prof.; KHRAMOV, V.A.; ABRAMOV, V.I., otv. red.; PROZDROVSKAYA,  
V.L., tekhn. red.; BOLDYREVA, Z.A., tekhn. red.

[Handbook on electric equipment for mines] Spravochnik gornogo elektrotekhnika. Pod obshchei red. A.E.Tropa. Moskva, Gosgortekhnizdat, 1962. 400 p. (MIRA 16:5)  
(Electricity in mining)

RUDNEV, D.F.; IL'INYKH, A.I.

Results of using DDT solution in diesel fuel to combat orchard pests.  
Nauch.trudy Inst.ent.i fit. 6:89-91 '55, (MLRA 9:7)  
(DDT (Insecticide)) (Fruit--Diseases and pests)

IL'INYKH, A.P.

Effect of ACTH and cortisone on the blood serum proteins and soluble liver proteins in experimental tuberculosis. Probl. tub. 42 no.10:69-74 '64. (MIRA 18:11)

1. Biokhimicheskaya laboratoriya (rukovoditel' - dotsent V.A. Shcherbatskaya) Sverdlovskogo nauchno-issledovatel'skogo instituta tuberkuleza (direktor - prof. I.A. Shakhlein).

IL'INYKH, A.P.

Liver proteins in the development of tuberculosis in rabbits.  
Pat. fiziol. i eksp. terap. 8 no.1:40-43 Ja-F '64.

(MIRA 18:2)

1. Biokhimicheskaya laboratoriya "rukovoditel' V.A. Shcherbatskaya)  
Sverdlovskogo nauchno-issledovatel'skogo instituta tuberkuleza (dir.-  
prof. I.A. Shaklein) Ministerstva zdravookhraneniya RSFSR.