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Ca

Viscosities of fuming and diluted sulfuric acid and sodium sulfide. V. E. Postnikov and L. L. Kuz'min. *Khimstroi* 6, 527-9(1934).—Tabular presentation of the viscosities of fuming H_2SO_4 at −20° to 120° and of Na_2S at 10° to 170° and a wide range of concns. For the viscosity of dil. H_2SO_4 cf. Rhodes and Barbourg (*C. A.* 17, 2037). Chas. Blanc

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B·I-8

Reaction of sulphur dioxide with water under pressure. L. L. Kuzmin and V. F. Pastushov (J. Chem. Ind. Russ., 1935, 12, 571—580).—80% of the SO_2 is converted into S and H_2SO_4 (> 25%) by heating equal vols. of H_2O and liquid SO_2 in containers of > twice the vol. of the liquid mixture, at 250—300°, according to the reaction $3SO_2 + 2H_2O \rightarrow 2H_2SO_4 + S$. The velocity of the reaction falls practically to zero as the $[H_2SO_4]$ rises to 50%. The reaction $(NH_4)_2SO_3 + 2NH_4HSO_3 \rightarrow 2(NH_4)_2SO_4 + S + H_2O$ is considered to have greater practical possibilities than the above. R. T.

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B-I-8

Removal of arsenic from sulphuric acid factory gases by absorption in sulphuric acid. V. F. Pozhnikov, L. L. Kuzmin, and N. K. Vorobjev (J. Chem. Ind. Russ., 1933, 10, No. 9, 55—59).—The solubility of As_2O_3 in H_2SO_4 (I) increases with the temp., and diminishes with the concn. of (I) to 69%, rises to a max. at 78%, and then falls again. SO_2 from pyrites is best freed from As by passing through a scrubber containing 78% (I) at 100°, and then through a second scrubber with 31% (I). The ppt. separating from the cooled acid contains 66% As_2O_3. R. T.

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[illegible] catalyst of [illegible] of high [illegible] and oxygen contents. V. F. [illegible], [illegible] I. [illegible], and T. I. [illegible] (J. Appl. Chem. [illegible], 1934, 7, [illegible]).—The velocity of oxidation of SO_2 at a KVO_3-SiO_2-Cs silicate catalyst for a SO_2 30, O_2 61% mixture is 5 times as great as that for a SO_2 7—8, O_2 19, N_2 73% mixture; the optimum temp. is the same in both cases. R. T.

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Distillation of the free lime in commercial calcium cyanamide. V. F. Postnikov, A. Kh. Breusnikov and I. P. Kirillov. *J. Applied Chem.* (U. S. S. R.) 10, 881-7 (in French 827)(1937).—A mixt. of NH_3, CO and HCN obtained by passing CO and NH_3 over a catalyst of Al_2O_3 or C, is made to react with the com. cyanamide or the catalyst is mixed with the cyanamide and the mixt. treated directly with CO and NH_3 at 700-800°. A. A. P.

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Phosphorus nitride, its preparation and properties. V. F. Postnikov and L. L. Kuz'min. *J. Applied Chem.* (U. S. S. R.) 8, 429-38 (in English 438) (1935).—P_3N_5 was synthesized from P and N_2 by the action of silent elec. discharges in the presence of catalysts (Ni oxide and Pt asbestos), as well as by Stock's method (heating P_3S_5 in NH_3). P_3N_5 is not attacked and not dissolved by H_2O, until heated to 180°. At 250° it is completely dissolved according to $P_3N_5 + 12H_2O = 5NH_3 + 3H_3PO_4$. It can be heated to 120° without decompn., its decompn. starting at 800°, yielding N_2 and P in a stream of N_2, and a residue of P_2O_5 in the presence of air. It is insol. in dil. HNO_3 and HCl, and alkalies. It is slightly decompd. in concd. HNO_3 and dil. H_2SO_4. Hot H_2SO_4 completely decomposes P_3N_5 into NH_4^+ and H_3PO_4. Twenty-three references.

A. A. Boehtlingk

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Analysis of cyanamide and calcium nitride. V. E. Postnikov and N. S. Lapshin. *Zavodskaya Lab.* 14, 401-3(1948).—Aniline, dimethylaniline, and o-toluidine can be used for detg. nitride in the presence of cyanamide. The $CaCN_2$ cannot be detd. accurately by treating with H_2SO_4 and titrating the liberated CO_2 with alkali hydroxide. After 16 hrs.' heating of Ca_3N_2 in anhyd. EtOH, the extent of decompn. is only 80%. By applying a coeff. of 1.25, this method can be used for the approx. detn. of Ca_3N_2 in tech. products contg. both nitride and cyanamide.

B. Z. Kamich

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The question of purification of sulfur-burner gases containing arsenious oxide by absorbing it in sulfuric acid. V. F. Postnikov, L. L. Kuzmin and N. K. Vorob'ev. *J. Chem. Ind.* (Moscow) 1933, No. 9, 55-9.—The hot gases are passed through 77-79% H_2SO_4 and then through 30% acid. H_2O is an unsatisfactory solvent. The mixt. of As_2O_3 and SO_2 recovered from the acid is washed rapidly with H_2O and gives practically pure As_2O_3. H. M. L.

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Purification of the hydrogen used in the synthesis of ammonia by removing hydrogen sulfide with activated carbon. V. F. Postnikov and I. P. Kirillov. *J. Applied Chem.* (U. S. S. R.) 6, 240-4(1933).—The capacity of the charcoal depends upon the concn. and is expressed by $K = 5.88\ C_0^{0.307}$, where the coeffs. 5.88 and 0.307 were detd. graphically from the equation $\log K = \log a + b \log C_0$ in the coördinate system $\log K$ = ordinate and $\log C_0$ = abscissa. An increase in the grain of the charcoal lowers its capacity. Expts. carried out on desorption of H_2S by blowing the charcoal with H_2 and air at 100° and with the use of vacuum restored the activity to 55-65%.

A. A. Boehtlingk

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The question of purification of sulfur-burner gases containing arsenious oxide by absorbing it in sulfuric acid. V. F. Postnikov, L. L. Kurmin and N. K. Vorob'ev. *J. Chem. Ind.* (Moscow) 1933, No. 9, 55-9.—The hot gases are passed through 77-79% H_2SO_4 and then through 20% acid. H_2O is an unsatisfactory solvent. The mixt. of As_2O_3 and SO_2 recovered from the acid is washed rapidly with H_2O and gives practically pure As_2O_3. H. M. L.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

POSTNIKOV, V. F.
N. N. KOROBOV, ZhOKh 9, 1920-5, 1936

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Preparation of sodium hexametaphosphate. A. Kh. Bronnikov and V. F. Postnikov. *J. Applied Chem.* (U. S. S. R.) 11, 1295-1310(in French, 1310)(1938).—Monosodium phosphate was prepd. by the evapn. of a stoichiometric mixt. of H_3PO_4 and pure Na_2CO_3 to d. 1.48 and crystn. at 16° (if the mixt. be evapd. to d. 1.3, crystn. should be carried out at 3-4°). The crystals contained 49.7% P_2O_5. In the prepn. of the same compd. from tech. reagents evapn. to dryness is necessary, since the product does not recrystallize. The least corrosive action of the evapg. soln. was observed with Pb and the highest with Fe. The best conditions for prepn. of $(NaPO_3)_6$ were heating $NaH_2PO_4.2H_2O$ at 620° for 15-30 min. and rapid cooling of the molten mass by immersion of the container in cold water. The "activity" of $(NaPO_3)_6$ was detd. by titration with 1% soln. of $BaCl_2.2H_2O$ at room temp. to appearance of opalescence of soln. and by the amt. of gypsum dissolved in the $(NaPO_3)_6$ soln. The "activity" of $(NaPO_3)_6$ was higher in the products contg. less pyrophosphate. The product contained about 82% of $(NaPO_3)_6$. Fe, cast Fe and steel cannot be used for the construction of app., but fused basalt and fire clay were used and gave satisfactory results.

A. A. Podgorny

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Increasing the productivity of mechanical ovens for burning pyrites. V. F. Postnikov, T. I. Kunin and A. V. Baganov. *J. Chem. Ind.* (U. S. S. R.) 14, 276-84 (1937).

H. M. Leicester

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Laboratory investigation of the purification of waste water from a sodium sulfide plant. V. F. Postnikov, A. A. Astasheva and T. I. Kunin. *J. Applied Chem.* (U. S. S. R.) **10**, 639-51 (in French 651) (1937).—Oxidation of Na_2S with the O of the air is best in dil. solns. Increase of the amt. of air passing through the soln., time and temp. increase the velocity and the percentage of oxidation. $FeSO_4.7H_2O$ and $CuSO_4$ catalyze the reaction. The oxidation of Na_2S proceeds to thiosulfate and partially to sulfite, and that at 80° and in dil. soln. partially to sulfate. The use of flue gases for the purification of the above water yielded good results. An increase of temp. of soln. increases the velocity of carbonization. An increase of the CO_2 amt. (at av. velocity) leads to practically a complete purification of the above water. An increase of the gas velocity leads to a decrease of the degree of purification and the percentage of utilization of CO_2. The oxidation reaction is not observed in the purification of water with the above gases, although it is present at somewhat elevated temps. The chem. purification of waste water is not suitable for practical purposes. The flue-gas purification is the most economical. Seven references.

A. A. Podgornyy

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Fertilizer. L. L. Kuz'min and V. F. Postnikov. Russ. 41,536, Feb. 28, 1935. P_2N_5 is heated with concd. H_2SO_4 or H_3PO_4 until it is completely dissolved.

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Investigations of the production of rongalite. V. F. Postnikov and T. I. Kunin. *Trans. Inst. Chem. Tech. Ivanovo* (U. S. S. R.) 1940, No. 3, 126-36.—See C. A. 35, 5851. W. R. Henn

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POSTNIKOV, V.F.

RT-797 /Purification of hydrogen used in ammonia synthesis by removing hydrogen sulfide with activated charcoal/ Ochistka vodoroda dlia sinteza ammiaka ot primesi serovodoroda aktivirovannym uglem.
Zhurnal Prikladnoi Khimii, 6(2): 240-244, 1933.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

POSTNIKOV, V. F.

"Sur l'obtention et certains proprietes des $PbCl_4$, H_2PbCl_6 et $(NH_4)_2PbCl_6$".,

Postnikov, V. F. et Speranskij, A. I., (p. 1328)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1940, Volume 10, no. 14.

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Reactions of calcium phosphate with sodium sulfate and bisulfate in aqueous solutions at high temperatures. V. F. Postnikov, L. L. Kuz'min, N. N. Korobov and O. N. Mishina. *Trans. Inst. Chem. Tech. Ivanovo* (U. S. S. R.) No. 2, 42–7(1939).—The possibility of producing Na phosphates by reaction of $Ca_3(PO_4)_2$ with $NaHSO_4$ and Na_2SO_4 in aq. solns. at high temps. was detd. A definite amt. of the components was placed in a glass tube and heated in a tubular elec. oven. At the end of the reaction the tube was cooled and the contents were analyzed for P_2O_5. With an optimum ratio of 1:4 for $Ca_3(PO_4)_2$:Na_2SO_4, 10.1% $Ca_3(PO_4)_2$ was decompd. at 200°. At higher temps. the decompn. decreased sharply. In the expts. with $NaHSO_4$ the best decompn. (99.9%) was obtained when $NaHSO_4$:$Ca_3(PO_4)_2$ was 4:1, temp. 100°, and time of heating 9 hrs. At higher temps. the decompn. decreased. The formation of the sol. phosphates was favored in dil. solns. contg. 2% $NaHSO_4$. Increasing the concn. of the $NaHSO_4$ decreased the decompn. Expts. were also made on phosphorite, apatite concentrate, and bone meal with solns. contg. 20% $NaHSO_4$ and a $NaHSO_4$:$Ca_3(PO_4)_2$ ratio of 4:1. In these cases too, the decompn. decreased with increasing temp. The following max. results were obtained: (1) apatite decompn., 66.9% at 200°; (2) bone meal decompn. 77.0% at 100°; and (3) phosphorite decompn., 67.0% at 200°. B. Z. Kanich

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The heat balance of the Beskov [superphosphate] chamber. V. F. Postnikov and V. A. Mikhailov. *Trans. Inst. Chem. Tech. Ivanovo* (U. S. S. R.) 1940, No. 3, 96-102.—The calcn. of the heat balance confirmed the contention that in the reaction between apatite and H_2SO_4, $CaSO_4.0.5H_2O$ is formed instead of $CaSO_4.2H_2O$. The Al silicate accompanying the apatite used for the expts. was found to be $Al_2O_3.2SiO_2$ instead of the arbitrarily accepted $Al_2(SiO_3)_3$ as used by other investigators. Increase to 70° of the temp. of H_2SO_4 used for the decompn. of apatite does not change materially the temp. regime of the chamber. This fact is of a great practical importance, since the increased temp. of the acid increases the sepn. of the gaseous F compds. The temp. of H_2SO_4 entering the system should be 30-35° in order that an acid of the required temp. shall reach the chamber. W. R. Henn

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Burning ammonia to nitrous oxide. V. F. Postnikov, L. L. Kuz'min and N. K. Tsal'm. *J. Chem. Ind.* (U. S. S. R.) 13, 1348-50(1936).—When NH_3 is passed over a Mn catalyst contg. Fe or Bi, at 200-300° and a rate of 60 cc. per min., an 81-8% yield of N_2O is obtained. Most of the remaining NH_3 forms N_2. H. M. L.

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Contact properties of chromium oxide in the oxidation of sulfur dioxide. V. F. Postnikov, T. I. Kunin and A. A. Ashtasheva. *J. Applied Chem.* (U. S. S. R.) 9, 1373-7 (in German 1377)(1936).—The catalytic power of Cr_2O_3 in the oxidation of SO_2 depends upon the initial materials and the method of prepg. the gel. The gel pptd. with NH_4OH from a 10% $CrCl_3$ or $Cr(NO_3)_3$ soln. has the highest activity; activity of that pptd. with KOH or NaOH is very low. Water vapor increased the activity of pure Cr_2O_3, simultaneously shifting the contact curve to the side of higher temp., in comparison with that obtained in the absence of water vapor. Activity of Cr_2O_3 gel pptd. with NH_4OH is not increased by acetates of Ca, Zn, Al and Ni. Activity of the gel pptd. with NaOH was improved by these acetates, but it was always less than that of pure Cr_2O_3 pptd. with NH_4OH. Twelve literature and four patent references.

A. A. Podgorny

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The treatment of calcium cyanamide with phosphoric acid. V. F. Postnikov, T. I. Kunin and A. A. Astashova. *J. Chem. Ind.* (U. S. S. R.) 13, 1228-31(1936).—When $CaCN_2$ is treated with 80% of its wt. of H_3PO_4 contg. 25% P_2O_5, its powdery nature is the same as that of $CaCN_2$ treated with mineral oil. If 80% acid is used in slight excess, a granular product, which does not require drying, is obtained. If $CaCN_2$ is treated with the theoretical amt. of H_3PO_4 and 5-15% NH_4NO_3 and then the theoretical amt. of NH_3 is added, almost all the N is found as urea, and almost all the P_2O_5 is available. H. M. L.

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Electrolysis of aqueous solutions of sulfurous acid. T. I. Kunin, V. P. Postnikov and E. F. Derbeneva. *J. Applied Chem.* (U. S. S. R.) 11, 776-85(in French 785) (1938).—The electrolysis of aq. soln. of SO_2 yielded H_2SO_4 and S. Optimal conditions for the electrolysis are c. d. 0.1 amp./sq. cm., 20°. The SO_2 concn. may be varied widely; Pb electrodes are used. Yields: S about 70% current efficiency; H_2SO_4 about 90%. A. A. Podgorny

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The interaction of carbon monoxide and nitrogen peroxide in the manufacture of sulfuric acid. V. P. Postnikov and N. S. Lapshin. *Trans. Inst. Chem. Tech.* (U. S. S. R.) 1940, No. 3, 80-3.—The reaction between CO and NO_2 was effected in a 230-ml. glass cylinder, partially filled with glass beads (50 ml.). An oil thermostat was used to regulate the temp. The products of the reaction were passed into 2 vessels contg. concd. H_2SO_4 for the absorption of the unchanged NO_2. The second vessel contained several crystals of diphenylamine, for the control of the absorption of NO_2 by H_2SO_4 in the 1st vessel. The CO_2 formed was absorbed by KOH. Before each expt. the system was blown out with a mixt. of CO and NO_2, in ratios required for the expt. Each expt. lasted 15 min. At 80-100° the equil. of the reaction between CO and NO_2 is shifted (according to thermodynamic calcns.) practically completely in the direction of the formation of CO_2 and NO. The expts. showed that the formation of CO_2 from the reaction between CO and NO_2 takes place fairly rapidly and that CO is oxidized completely to CO_2 by contact of the gases of not more than 348 sec. In the normal course of the nitrous process the CO content in the gas is very small and the losses of HNO_3 are insignificant. A disruption of the nitrous process (in which the amts. of CO in the gas increase) causes the losses of HNO_3 to increase. Three references. W. R. Henn

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Preparation of rongalite. V. F. Postnikov and T. I. Kunin. *J. Applied Chem.* (U. S. S. R.) 13, 185-90(in French, 190)(1940).—Rongalite ($NaHSO_2.HCHO.2H_2O$) was prepd. by the action of Zn dust on $NaHSO_3$ in the presence of aq. HCHO. The best results were obtained by reducing $NaHSO_3$ in the presence of 1% Na_2SO_3 at 95°. An excess of aq. HCHO retards the reaction without increasing the yield. The following mechanism is proposed: $4NaHSO_3 + Zn = Na_2S_2O_4 + ZnSO_3 + Na_2SO_3 + 2H_2O$, $Na_2S_2O_4 + HCHO + H_2O = NaHSO_2.HCHO + NaHSO$ $2ZnSO_3 + Zn + 2H_2O = ZnS_2O_4 + 2Zn(OH)_2$, ZnS_2O $Na_2SO_3 = Na_2S_2O_4 + ZnSO_3$ and $NaHSO_3 + HCH$ $NaHSO_2.HCHO$

A. A. Podgor

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B-I-5

Retardation of the dissolution of iron in sulphuric acid. V. F. Postnikov and I. P. Kirillov (Chimstr., 1935, 7, 431—434).—On adding 0·5% of $CS(NH_2)_2$ to 26·6% H_2SO_4 the rate of dissolution of Fe was reduced to 1/19 in 6 hr. and to 1/93 in 72 hr.

Ch. Abs. (c)

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Decomposition of Kineshemsk phosphorites with nitric acid. A. Kh. Bronnikov and V. P. Postnikov. *Trans. Inst. Chem. Tech. Ivanovo* (U. S. S. R.) No. 2, 52-6 (1939).—Expts. were conducted with Kineshemsk phosphorites of the following compn: P_2O_5 22.3, CaO 38.6, R_2O_3 3.0, H_2O 2.8 and insol. residue 14.8%. Fifty-g. samples were decompd. by the gradual addn., while stirring, of 15-40% HNO_3. The required acid was added in 15 min., after which the contents were further stirred for 15 min., filtered and the wt. and vol. of the filtrate were detd. The slime was washed with water (60°) and the wt. and vol. of the wash waters were detd. The P_2O_5 in the filtrate and ext. were detd. by Nissen's method. The extn. of the P_2O_5 was found to increase with the concn. of the HNO_3 and reached a max. of 92.5% with 25% HNO_3, after which the extn. decreased. The time required for filtration increased with acid concn. Although the acid was added in 15 min., the reaction reached the max. speed after 10 min. By increasing the length of stirring, after the complete addn. of the acid, from 15 to 60 min. the extn. was increased from 92.5 to 93.7%. By using 5% more acid than the stoichiometric requirements the extn. was increased to only 92.7%, but a 5% decrease reduced the extn. to 59.8%. By increasing the fineness of the material to pass a sieve of 4900 openings per cm.² the extn. increased to 95.2%. In passing from fraction (−2500 and +4900) to fraction (−4900) the extn. increased only from 94.5 to 95.2%. B. Z. Kamich

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18

Operation of the Baturin chamber sulfuric acid plant in Ivanovo (U. S. S. R.). V. F. Postnikov and I. P. Kirillov. *Trans. Inst. Chem. Tech. Ivanovo* (U. S. S. R.) No. 2, 70–82(1939).—A study was made of the operating conditions of the Baturin plant, which consists of 4 lead chambers and 2 Glover and 2 Gay-Lussac towers. Owing to improper operation of the furnaces and the low grade of pyrite the SO_2 averaged about 4.9%. The acid from the first Glover tower after the cooler had a high temp. (54°). Owing to the operating capacity, the 4th chamber produced only 0.1% of the acid. The oxides of N before the Gay-Lussac tower contained more NO_2 than NO. This resulted in an increased absorption zone for the oxides, increased oxide losses, and corrosion of the Pb. The acid coming from the Gay-Lussac tower had 0.21% N_2O_3. It is proposed to increase the SO_2 content to 7-8%, to increase the oxides of N in the chamber to 0.66%, and use water or acid instead of steam is for sprays in the chamber. It is expected that the improvements will raise the output of acid by 50%. B. Z. Kamich

Sulfuric acid tower reaction in the light of modern research. Hugo Petersen. *Chem.-Ztg.* 63, 585–7(1939). G. G.

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18

Extraction of sulfur dioxide from the waste gases of contact sulfuric acid plants. V. F. Postnikov and T. I. Kunin. *Trans. Inst. Chem. Tech. Ivanovo* (U. S. S. R.) No. 2, 60-70(1939).—Expts. were conducted with pure SO_3, pure SO_2 and a gas contg. 0.7% SO_3 and 0.2-0.3% SO_2. Absorbents used were o-toluidine, quinoline, tetralin, pyridine and aniline. All 5 compds. were found to be good solvents for SO_3. By increasing the temp. the soly. in the first 3 absorbents decreased. The stability of the sulfurous salts was measured and the quinoline salt was found to be most stable, but it had a tendency to solidify rapidly. The quinoline could absorb up to 34% SO_3 from pure SO_2, but after prolonged satn. with the mixt. contg. 0.7% SO_3 and 0.2-0.3% SO_2 the product contained only 4.47% SO_3 and 2.03% SO_2. This decreased SO_2 absorption was due to the expulsion of the SO_2 by the SO_3 and also due to the oxidation of the SO_2. The soly. of the SO_2 in quinoline solns. contg. various amts. of water was also investigated and a 1:1 soln. was found to have a considerable absorption speed. The extent to which the SO_2 will accumulate in the quinoline soln., owing to the differences in absorption between the SO_2 and SO_3, and the most desirable frequency for its sepn. are to be detd.

B. Z. Kamich

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BC

A-1

Viscosity of aqueous solutions of various salts. V. F. Postnikov and I. P. Kirillov (J. Appl. Chem. Russ., 1936, 9, 1926—1928).—Vals. of η and d for 0·5—10M-$NaNO_3$, -$(NH_4)_2CO_3$, and -NH_4HSO_4 at 0—100° are recorded. R. T.

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B-II-1

Preparation of rongalite. V. F. Postnikov and T. I. Kurse (J. Appl. Chem. Russ., 1960, 33, 185—190).—$NaHSO_3,CH_2O$ (I) is obtained in max. yield by adding eq. $NaHSO_3$ to Zn (20—30% excess), followed by eq. CH_2O, in theoretical amount, at 95°; 1% of HCO_2H should be present. With variations in the $[NaHSO_3]$ do not affect the result. The following mechanism is proposed: $CH_2O + Zn \rightarrow Na_2S_2O_4 + ZnSO_3 + Na_2SO_3 + 2H_2O$; $Na_2S_2O_4 + CH_2O + H_2O \rightarrow (I) + NaHSO_3$; $2ZnSO_3 + Zn + 2H_2O \rightarrow ZnS_2O_4 + 2Zn(OH)_2$; $ZnS_2O_4 + Na_2SO_3 \rightarrow Na_2S_2O_4 + ZnSO_3$. R. T.

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CA

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Increasing the capacity of furnaces producing calcium cyanamide. V. F. Postnikov and T. I. Kunin. *Trans. Inst. Chem. Tech. Ivanovo* (U. S. S. R.) **1940**, No. 3, 117-25.—Several electrodes can be used in cylindrical furnaces for $CaCN_2$ production. The nitridization period can be shortened appreciably if 3 electrodes are used. Reduction of time (as compared with the time required with 1 electrode) is approx. 19.6% with 3 electrodes and approx. 27.7% with 4. The heat balances calcd. for furnaces with 1 or 4 electrodes do not represent the true heat régime, owing to the absence of accurate data for the heat of reaction of $CaC_2 + N_2$, the heat capacity of $CaCN_2$, etc. Probably excessive temp. at any point of the charge in furnaces with 4 electrodes is avoided. Five references. W. R. H.

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a-1

Laboratory apparatus for ammonia synthesis. V. F. Bondarenko (Trans. Inst. Chem. Tech. Ivanovo, 1939, 66—67).—Apparatus for the study of catalytic NH_3 synthesis at 400°/100 atm. is described. H. T.

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9

Retardation of the solution of iron in sulfuric acid. V. F. Pustoshov and I. P. Kirillov. *Khimstroi* 7, 431-4 (1938); cf. Brauer, *J. Chem. Ind.* (Moscow) No. 9, 64 (1933).—On the addn. of 0.5% $CS(NH_2)_2$ to 26.6% H_2SO_4 the rate of soln. of Fe was reduced to $^1/_{10}$ in 6 hrs. and to $^1/_{50}$ in 72 hrs.

Chas. Blanc

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CA

9

Increasing the production capacity of furnaces for the smelting of flotation pyrite. V. F. Postnikov and T. I. Kunin. *Khim. Mashinostroenie* 1938, No. 3, 4-10; *Khim. Referat. Zhur.* 1, No. 11-12, 81(1938). Lab. expts. showed that the velocity of the smelting of the flotation pyrite can be increased by reducing the time from 6 sec. (for pulverized pyrite) to 2 sec., and the production capacity of the furnace increased from 20 to 60 tons. The calcns. are made for pyrite (contg. 45% of S) sifted through a sieve having 4900 openings/sq. cm. The amt. of SO_2 in the flue gas is 10%. The temp. of the furnace may reach 1200°, which is permissible. These conclusions must be verified by more extensive lab. expts. as well as by practical applications. Good results are obtained when the primary air is preheated to 300° and when it is passed in an amt. equal to 30% of the total air. W. R. Henn

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BC

A-1

Viscosities of [illegible] and [illegible] sulphuric acid and [illegible] sulphide. V. F. [illegible] and L. L. [illegible] (Khimstroi, 1934, [illegible]). Data are recorded for [illegible] to 120° and for Na_2S from [illegible] Ch. Abs. (p)

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A-1

Preparation and properties of lead tetrachloride, hydrochloroplumbic acid, and ammonium plumbichloride. V. F. Postnikov and A. I. Speranski (*J. Gen. Chem. Rust.*, 1940, 10, 1228—1232).—Detailed instructions for prep. of solutions of H_2PbCl_6 (I), of cryst. $(NH_4)_2PbCl_6$ (II), and of $PbCl_4$ are given. The reactions involved are $PbCl_2 + 2HCl + Cl_2$ (I); (I) + $2NH_4Cl$ (II) + 2HCl; (II) + H_2SO_4 → $PbCl_2$ + 2HCl + $(NH_4)_2SO_4$. R. T.

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B-I-8

Chamber sulphuric acid plant at Baturin works in Ivanov. V. F. Postnikov and I. P. Kirillov (Trans. Ivanovo Chem. Tech. Inst., 1939, 70—82).—The working of the plant is critically reviewed. R. C.

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B-I-B

Extraction of sulphur dioxide from exit gases of contact plants. V. F. Postnikov and T. I. Kunin (Trans. Ivanovo Chem. Tech. Inst., 1939, 56—70).—The solubility of SO_2 in *o*-toluidine, quinoline (I), and tetrahydronaphthalene at 18—100° has been measured. In each case the solubility falls with rising temp. (I) holds SO_2 the most firmly, but oxidation to SO_3 may be fairly rapid. The solubilities of SO_2 and SO_3 from air containing 0·7% of SO_2 and 0·2—0·3% of SO_3 have been measured at 17° and 40°. For the recovery of SO_2 from exit gases the most practicable solvent seems to be a 1 : 1 mixture of (I) and H_2O, but it is uncertain how far accumulation of SO_3 may cause difficulty.

R. C.

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B-I-8

Reaction of calcium phosphate with normal and acid sodium sulphate in aqueous solution at high temperatures. V. F. Postrikov, L. L. Kushin, N. N. Korobov, and O. N. Mischina (Trans. Ivanovo Chem. Tech. Inst., 1939, 42—47).—There is but little interaction at 100° between Na_2SO_4 and $Ca_3(PO_4)_2$ and less at higher temp. The optimum temp. for interaction with $NaHSO_4$ is 100°, the proportion of the P_2O_5 rendered H_2O-sol. reaching ~60% for apatite and phosphorite and ~77% for bone meal. R. C.

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B-I-8

Nitrification of calcium carbide. V. F. Postnikov, T. I. Kunin, and N. D. [illegible] (J. Appl. Chem. Russ., 1936, 9, 1021—1022).—$CaCN_2$ containing 22—23% N is prepared by passing N_2 through a mixture of $CaCN_2$ 10—30, 60% CaC_2 70—90, CaF_2 1—2% at 1100°. The CaC_2 should be finely ground (4000 mesh/sq. cm.). No advantage is gained by shaking the mass during nitrification. R. T.

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B-I-8

Contact catalytic activity of chromium oxide in oxidation of sulphur dioxide to sulphur trioxide. V. E. Pospekov, T. I. Kunin, and A. A. Astaschova (J. Appl. Chem. Russ., 1937, 10, 1558—1559).—A reply to Adadurov's criticisms (B., 1937, 778). R. T.

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NITRIFICATION OF CALCIUM OXIDE TO YIELD TECHNICAL CALCIUM CYANAMIDE. V. P. Postnikov, A. C. Beennikov, and I. P. Kirillov (J. Appl. Chem. Russ., 1937, 10, 821-827).

CaO in technical $CaCN_2$ is removed by passing 1:5 NH_3-CO over a mixture of crude $CaCN_2$ and Al_2O_3 or C catalysts at

700—800°, or by passing HCN over the $CaCN_2$ at the same temp. R. T.

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B-I-8

Purification of effluent from sodium sulphide manufacture. V. P. Postnikov, A. A. Astascheva, and T. I. Kunin (J. Appl. Chem. Russ., 1937, 10, 659—661).—The effluent, containing 0·7—3% of Na_2S, may be purified by passing air in presence of FeS or CuS; at room temp. the products are chiefly $Na_2S_2O_3$ and Na_2SO_3, whilst at 80° Na_2SO_4 is also produced. The velocity of the reaction at higher temp. is > at lower, and is inversely ∝ $[Na_2S]$. Complete elimination of H_2S by passing flue gas is possible, with low temp. and flow velocity, and high $[CO_2]$. Chemical methods, depending on the use of $FeSO_4$, $CaOCl_2$, or $CaOCl_2$ + CaO, are not practicable. The most economical method consists in passing flue gas-air mixtures, containing O_2 3·6, CO_2 13·6, and N_2 82·8%, at 80°. R. T.

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B-I-Y

Oxidation of ammonia to nitrous oxide. V. F. Postnikov, L. L. Kuzmin, and N. K. Tralm (J. Chem. Ind. Russ., 1936, 13, 1348—1350).—NH_3–air is passed over a MnO–Bi_2O_3 catalyst at 200—300°, when N_2O is obtained in 80—88% yield; the by-products are chiefly N_2, with traces of NO and NO_2. The yield is independent of the [NH_3] of the mixture, but varies with duration of contact. R. T.

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B C

B-I-8

Conversion of animal refuse into cyanide derivatives. V. F. Postnikov and T. I. Kunin (Trans. Inst. Chem. Tech. Ivanovo, 1935, 87—89).—The material (leather, hoofs, etc.) is subjected to dry distillation at 800° and the gases are heated at 1000°, when 5% of the original N content is recovered as HCN and 50% as NH_3; other products, apart from animal C, are an oily condensate and combustible gases, utilisable for heating the retorts. R. T.

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B-I-8

Interaction of sodium sulphate and pyrites. V. F. Postnikov, A. C. Bronnikov, and I. P. Kirillov (Trans. Inst. Chem. Tech. Ivanovo, 1935, 68—72).—The reaction $Na_2SO_4 + 2FeS_2 + 5O_2 \rightarrow Fe_2O_3, Na_2O + 5SO_2$ does not proceed to any significant extent at 1100°, the product consisting chiefly of unchanged Na_2SO_4 and FeS_2, together with FeS and Fe_3O_4; Na_2SO_3 and Na_2S were not formed. R. T.

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B-I-8

Preparation of sodium ferrocyanide from calcium cyanamide. V. F. Postnikov, T. I. Kunin, and A. C. Bronnikov (Trans. Inst. Chem. Tech. Ivanovo, 1935, 77—86).—39% of the N of $CaCN_2$ is recovered as NaCN by heating a mixture of $CaCN_2$ 43·1, Na_2CO_3 24·1, NaCl 24·1, and C 8·6% at 860° for 10 min., and cooling the melt in H_2O. The NaCN is converted into $Na_4Fe(CN)_6$ by adding a small excess of $FeSO_4$ to the aq. solution, and no difficulties arise owing to the simultaneous crystallisation of $Na_2CO_3,10H_2O$. Crude Na_2CO_3 is applicable to the process. R. T.

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B-I-5

Preparation of calcium cyanamide by the action of carbon monoxide and ammonia on calcium oxide or carbonate. V. F. Postnikov, T. I. Kunin, and N. A. Kuznetsova (J. Chem. Ind. Russ., 1935, 12, 795—803).—A mixture of $CaCN_2$ 81·5, C 17, and Al_2O_3 1·5% reacts at 800—850° with a mixture of N_2 60, CO 30, and NH_3 10% to yield $CaCN_2$ containing 28% N, the reaction being practically completed after 1—2 hr.; the amount of NH_3 taken should be 6 times the theoretical. 8·4% of the NH_3 undergoes dissociation, 15% is used to form $CaCN_2$, 5% to form HCN, and 72% is unchanged. If CaO (containing Al_2O_3 3 and C 10%) is used in place of $CaCO_3$, the optimum temp. is 750—800°, and the gas should contain N_2 50, CO 40, and NH_3 10%; the product contains ≥ 26·8% N. The cost per ton of combined N is 23·6% < for the CaC_2 process. R. T.

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B-I-1

Treatment of calcium cyanamide with phosphoric acid. V. F. Postnikov, T. I. Kunin, and A. A. Astascheva (J. Chem. Ind. Russ., 1936, 13, 1228—1231).—50% H_3PO_4 is added to $CaCN_2$ in amount sufficient to convert the entire Ca present into $Ca(H_2PO_4)_2$ (I), when the $CN \cdot NH_2$ liberated combines with H_2O to yield urea. Aq. NH_3 is then added, in amount corresponding with the reaction (I) + $2NH_3$ → $CaHPO_4$ + $(NH_4)_2HPO_4$, and the product is dried at 42°. The final product is readily granulable and non-hygroscopic; it contains assimilable P_2O_5 51·35, N (as urea and NH_4) 10·5—13%, and > traces of dicyanodiamide. R. T.

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B-I-8

Contact activity of chromium oxide in the oxidation of sulphur dioxide to sulphur trioxide. V. F. Postnikov, T. L. Kunin, and A. A. Astaschewa (J. Appl. Chem. Russ., 1936, 9, 1373—1379).—$Cr(OH)_3$ (I) pptd. by aq. NH_3 is more active than (I) pptd. by KOH or NaOH. The activity is unaffected by addition of K, Zn, Al, or Ni acetate in the former case, but is enhanced in the latter case. Presence of H_2O in the gas increases the activity of (I), but max. conversion is obtained at higher temp. R. T.

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B-I-8

Preparation of sulphur from carboniferous pyrites by combustion with a limited air supply, and in presence of steam. V. F. Postnikov and I. P. Kiselev (J. Chem. Ind. Russ., 1934, 10, No. 9, 51—54).—20% of C is added to carboniferous pyrites, and air mixed with steam is passed at 800°, when the issuing gas contains 2 mols. of H_2S per mol. of SO_2. The residue contains 1% of S. When air is excluded the S is obtained chiefly as H_2S. R. T.

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BC

a-1

Preparation and properties of phosphorus nitride. V. P. Postnikov and L. L. Kumin (J. Appl. Chem., Russ., 1935, 8, 429—438).—P_3N_5 is obtained in good yield by Stock's method (A., 1903, ii, 207), and is also formed in traces from P and N_2 by the silent electrical discharge, or at 600° (Ni and Pt catalysts). P_3N_5 is conveniently analysed by the Kjeldahl method, being quantitatively converted into H_3PO_4 and NH_3 with H_2SO_4 at the b.p. or with H_2O at 120°. The P_3N_5 may be dried in air at 120° without decomp.; at 800° conversion into N_2 and P_2O_5 takes place, whilst in N_2 the products are N_2 and P. Conc. HNO_3 and dil. H_2SO_4 cause only inconsiderable decomp. at the b.p., aq. HCl and aq. alkalis have no effect, whilst fusion with NaOH affords Na phosphate and N_2 or NH_3. R. T.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

L 25795-66 (A) UR/13

ACC NR: AM6008537 Monograph

Kirillov, Boris Nikolayevich (Colonel); Postnikov, Viktor Fedorovich (Colonel) B+1

Tank company in combat (Tankovaya rota v boyu) Moscow, Voyenizdat M-va obor. SSSR, 1965. 159 p. illus. 6000 copies printed.

TOPIC TAGS: military operation, ground force tactic, military training, ground force training, tactics

PURPOSE AND COVERAGE: This book is intended for officers of armored and motorized units, for officers in the reserves, and for students in military schools. It can also be used by students of tactics of armored units. The role, the position, and combat objectives of an armored company, as a part of modern general military forces, are considered here. Various operations of an armored company, before and during combat, are discussed and the company commander is advised on different types of combat actions. Actions of an armored commander during offensive and defensive attacks are shown in specific examples.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

KIRILLOV, Boris Nikolayevich, polkovnik; POSTNIKOV, Viktor Fedorovich, polkovnik; KONKIN, P.I., red.

[Tank company in battle] Tankovaia rota v boiu. Moskva, Voenizdat, 1965. 159 p. (MIRA 19:1)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

POSTNIKOV, V.F. (Khar'kov, ul. Petrovskogo, d.36, kv.10)

Reaction of the sympathetic-adrenal system to surgical intervention for thyrotoxicosis. Klin.khir. no.11:52-58 N '62. (MIRA 16:2)

1. Kafedra khirurgii (zav. - zasluzhennyy deyatel' nauki, prof. G.M. Gurevich) Khar'kovskogo meditsinskogo stomatologicheskogo instituta.
(THYROID GLAND—SURGERY) (ADRENAL GLANDS)
(NERVOUS SYSTEM, SYMPATHETIC)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

POSTNIKOV, V. F.

"The Effect of Feeding on the Crop Structure and Grain Quality of Winter Rye using Various Types of Fallow." Cand Agr Sci, Moscow Agricultural Acad imeni Timiryazev, Moscow, 1954. (RZhBiol, No 7, Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun55

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

POSTNIKOV, V.F., kandidat sel'skokhozyaystvennykh nauk.

Effect of varying ratios of nitrogen, phosphorus and potassium in fertilizers on the yield and quality of winter rye in the non-Chernozem zone. Zemledelie 5 no.3:87-89 Mr '57. (MLRA 10:3)
(Rye) (Fertilizers and manures)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

POSTNIKOV, V.F.

USSR/Cultivated Plants - Grains.

M-2

Abs Jour : Ref Zhur - Biol., No 20, 1958, 91626

Author : Postinkov, V.F.

Inst : Moscow Agricultural Academy im K.A. Timiryazev

Title : The Influence of Various Proportion of NPK in Plant Nutrient on the Yield and Quality of the Winter Rye Grain in Non-Blacksoil Strip.

Orig Pub : Zemledeliye, 1957, No 3, 87-89.

Abstract : At the Experiment Station of Field Cultivation of Moscow Agricultural Academy in 1948 - 1951, tests were conducted to study the effect of various proportions of NPK in fertilizers and their application schedule in side-dressing on the yield and quality of winter rye grain. Feeding rye with phosphorous - potassium fertilizers in fall has a positive effect on the plant growth and winter resistance.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

POSTNIKOV, V.F. (Khar'kov, ul. Basseynaya, d.36, kv.10)

Recurrence of neurinoma of the posterior mediastinum. Nov. khir.arkh. no.1:113-115 Ja-F '59. (MIRA 12:6)

1. Kafedra khirurgii (zav. - zasl.deyatel' nauki prof. G.M. Gurevich) Khar'kovskogo meditsinskogo stomatologicheskogo instituta na baze 17-y klinicheskoy bol'nitsy.
(MEDIASTINUM--TUMORS)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

KARASEV, I.F.; ZOLOTOV, A.N.; POSTNIKOV, V.G.; FUKS, B.A.

Some problems in the field prospecting of fractured carbonate reservoir rocks in the Markovo oil field. Trudy VNII no.43: 144-156 '65. (MIRA 18:6)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

POSTNIKOV, V.G.; POSTNIKOVA, I.Ye.

Possibility of reef formation in the Lower Cambrian sediments of the Markov prospecting area (Irkutsk Province). Dokl. AN SSSR 158 no.3: 605-608 S '64. (MIRA 17:10)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR. Predstavleno akademikom A.A.Trofimukom.

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

POSTNIKOV, V.G.

Volumetric method for calculating oil reserves in fractured reservoir rocks. Trudy VNII no.14:165-177 '58. (MIRA 12:7)
(Oil fields--Valuation)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

KOVALEV, A.G.; KOCHESHKOV, A.A.; POSTNIKOV, V.G.

Some problems concerning the present-day status of geology and the development of fractured oil reservoir rocks (digest of foreign literature). Trudy VNII no.42:362-376 '65. (MIRA 18:5)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

BYKOV, N.Ye.; POSTNIKOV, V.G.

Determining the producing characteristics of oil fields with thinly layered reservoir rocks. Trudy VNII no.23:74-83 '60. (MIRA 13:11)

(Krasnodar Territory--Petroleum geology)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

Postnikov, V.G.

3(5) PHASE I BOOK EXPLOITATION SOV/2682

Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut

Voprosy poiskov, razvedki i dobychi nefti i gaza na territorii USSR; doklady na vyyezdnoy sessii uchenykh sovetov VNIGNI i VNII, prokhodivshey v g. L'vove v maye 1957 g. (Problems in the Exploration and Production of Oil and Gas in the Ukrainian SSR; Reports Presented at a Session of the Scientific Councils of the All-Union Petroleum Scientific Research Institute for Geological Survey and the All-Union Scientific Research Institute, in L'vov, May 1957) Moscow, Gostoptekhizdat, 1959. 282 p. 1,000 copies printed.

Additional Sponsoring Agency: USSR. Ministerstvo geologii i okhrany nedr.

Eds.: I. G. Baranov, V. V. Glushko, and A. S. Muromtsev; Executive Eds.: S. M. Yungans, and A. I. Zaretskaya; Tech Ed.: I. G. Fedotova.

PURPOSE: This book is intended for petroleum geologists and Ukrainian area specialists.

COVERAGE: This book contains 27 reports originally read at a meeting of the scientific councils of the VNIGNI (All-Union Petroleum Scientific Research Institute for Geological Survey), the VNII (All-Union Scientific Research Institute), the VNIIgaz, Ukrneft', Ukrgaz, Ukrvostokneftezavedka, Ukrneftegazrazvedka, and Ukrneftegeofizika held in L'vov in May, 1957. The papers deal with the petroleum geology of the Dnepr-Donets depression, the Carpathians, Ciscarpathia, the southwestern fringe of the Russian Platform, and the northern Black Sea area. Particular attention is given to describing the geological features of those regions most likely to bear oil. Other articles discuss oil production techniques and ways of increasing drilling speed in deep wells. No personalities are mentioned. References accompany individual articles.

Zabolotnyy, F. D. Basic Geological Results of the Geophysical Investigations Carried Out in 1956 in the Dnepr-Donets Depression 165

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POSTNIKOV, V.G.

POSTNIKOV, V.G.

Characteristics of modern oil and gas prospecting methods used in foreign countries. Geol. nefti 1 no.8:62-71 Ag '57. (MIRA 10:12)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut.
(Petroleum geology) (Gas, Natural--Geology)

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TOPCHIYEV, A.V., akademik, redaktor; TROFIMUK, A.A., redaktor; TREBIN, F.A., doktor tekhnicheskikh nauk, redaktor; FEDYNSKIY, V.V., doktor fiziko-matematicheskikh nauk, redaktor; SUKHANOVA, V.P., inzhener, redaktor; POSTNIKOV, V.G., redaktor; VOL'FSON, S.I., redaktor; BEKHMAN, Yu.K., vedushchiy redaktor; KOVALEVA, A.A., vedushchiy redaktor; PERSHINA, Ye.G., vedushchiy redaktor; SAVINA, Z.A., vedushchiy redaktor; USOVA, N.G., vedushchiy redaktor; ZAMARAYEVA, K.M., vedushchiy redaktor; NOVIKOVA, M.M., vedushchiy redaktor; L'VOVA, L.A., vedushchiy redaktor; YERSHOV, P.R., vedushchiy redaktor; POLOSINA, A.S., tekhnicheskiy redaktor; TROFIMOV, A.V., tekhnicheskiy redaktor

[4th International Petroleum Congress] IV Mezhdunarodnyi neftianoi kongress. Moskva, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry. Vol.1. [The geology of oil and gas deposits] Geologiia neftianykh i gazovykh mestorozhdenii. (Pod red. A.A.Trofimuka). 1956. 534 p. Vol.2. [Geophysical methods in prospecting] Geofizicheskie metody razvedki. (Pod red. V.V.Fedynskogo). 1956. 392 p. Vol.4. [The technology of oil and shale processing] Tekhnologiia pererabotki nefti i slantsev. 1956. 527 p. Vol.5. [Chemical processing of oil and gas] Khimicheskaia pererabotka nefti i gaza. 1956. 302 p. Vol.8. [Equipment, metals and protection from corrosion] Oborudovanie, metally i zashchita ot korrozii. 1956. 227 p. (MLRA 9:12)

1. International Petroleum Congress, 4th, Rome, 1955. 2. Chlen-korrespondent AN SSSR (for Trofimuk)
(Prospecting--Geophysical methods) (Petroleum--Refining)
(Gas, Natural)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

MIKHEYEV, Grigoriy Fedorovich; POSTNIKOV, Vladimir Ivanovich; VORONOVA, A.I., red.; VLASOVA, N.A., tekhn. red.

[Effectiveness of using radioisotopes in the national economy] Effektivnost' primeneniia radioaktivnykh izotopov v narodnom khoziaistve. Moskva, Gosatomizdat, 1962. 102 p. (MIRA 15:7)

1. Institut ekonomiki Akademii nauk SSSR i Kafedra organizatsii proizvodstva Moskovskogo Vysshego tekhnicheskogo uchilishcha im. Baumana (for Mikheyev, Postnikov).
(Radioisotopes—Industrial applications)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

LETENKO, V.A.; POSTNIKOV, V.I.; NADEINSKAYA, Ye.P., doktor tekhn. nauk, retsenzent: SOROKIN, V.S., inzh.-ekon., retsenzent; SHTAN', A.S., kand.khim.nauk, red.; SMIRNOVA, G.V., tekhn.red.

[Economic fundamentals of the use of radioisotopes in the machinery industry] Ekonomicheskie osnovy primeneniia radioaktivnykh izotopov v mashinostroenii. Moskva, Mashgiz, 1963. 218 p. (MIRA 17:1)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7"

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Postnikov, Vladimir Ivanovich; Razumov, Ippolit Mikhaylovich

19

Atomic energy in the national economy; economics and experience of application (Atomnaya energiya v narodnom khozyaystve; ekonomika i opyt primeneniya), Moscow, Izd-vo "Ekonomika", 1964, 174 p. illus., biblio. Errata slip inserted. 4,500 copies printed.

TOPIC TAGS: atomic energy, economics, radioactive isotope, nuclear power engineering, radiation effect

PURPOSE AND COVERAGE: This book discusses the problems of the economic effectiveness of the use of atomic energy in domestic and foreign industry and presents data associated with expanded use of atomic energy. On the basis of a large amount of factual material, the book indicates the most economical ways of introducing the use of radioactive isotopes in the national economy. The book recommends safety measures and gives the details of the use of certain types of radioactive sources. The book is intended for engineers, technicians, economists, planners, teachers, and students of higher educational institutions and technicums and a large audience of readers interested in these problems.

Card 1/2

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SUBMITTED: 30Sep64

SUB CODE: NP, IE

NO REF SOV: 100

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DIAAP WW B+1

AM5020748 BOOK EXPLOITATION UR/ 539.163:004.15(018)

Postnikov, Vladimir Ivanovich 65

Methods for determining the effectiveness of using radioactive isotopes 19,55 (Metodika opredeleniya effektivnosti primeneniya radioaktivnykh izotopov) Moscow, Atomizdat, 1964. 103 p. illus., biblio.

TOPIC TAGS: isotope, radioisotope, industrial nuclear application 14, nonmilitary nuclear application

PURPOSE AND COVERAGE: This book is intended for professional personnel in Soviet industry. Based on actual cases and using concrete examples, the book deals with the efficiency of radioisotope techniques, methods for calculating their efficiency, and facts regarding the use of radioactive isotopes and its effect on technical and economic factors. The book also shows that 14 safety requirements do not affect the efficiency of using radioisotopes in industry. No personalities are mentioned.

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OTHER: 001

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APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

POSTNIKOV, Vladimir Ivanovich; LETENKO, Viktor Aleksandrovich; TATOCHENKO, L.K., kand.tekhn.nauk, retsenzent; KALINOVA, R.S., retsenzent; SHTAN', A.S., kand.khim.nauk, red.; SEMENOVA, M.M., red.izd-va; EL'KIND, V.D., tekhn.red.

[Efficiency of radiographic control in the manufacture of machinery; applicable to gamma-ray flaw detection] Effektivnost' radioaktivnogo kontrolia v mashinostroenii; primenitel'no k gamma-defektoskopii. Predisl. A.V.Topchieva. Moskva, Gos.nauchno-tekhn. izd-vo mashinostroit.lit-ry, 1960. 143 p. (MIRA 14:4)
(Radioisotopes--Industrial applications)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

POSTNIKOV, Vladimir Ivanovich; LETENKO, Viktor Aleksandrovich; TATOCHENKO, L.K., kand.tekhn.nauk, retsenzent; KALINOVA, R.S., retsenzent; SHTAH', A.S., kand.khim.nauk, red.; SEMENOVA, M.M., red.izd-va; EL'KIND, V.D., tekhn.red.

[Efficiency of radioactive control in the machinery industry applied to gamma-ray flaw detection] Effektivnost' radioaktivnogo kontrolia v mashinostroenii; primenitel'no k gamma-defektoskopii. Predisl. A.V.Topchieva. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 143 p. (MIRA 14:4)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

S/122/60/000/008/005/006
A161/A029

AUTHOR: Postnikov, V.I., Candidate of Technical Sciences

TITLE: Application of Radioactive Isotopes in Machine Building Industry

PERIODICAL: Vestnik mashinostroyeniya, 1960, No. 8, pp. 78-80

TEXT: Information is given on an all-Union conference on the application of radioactive isotopes and nuclear radiation in the USSR economy. The conference was convened in Riga in April 1960. Only the practical use of radioactive isotopes and nuclear radiation was discussed. Most of the 167 reports were read by delegates from industrial plants or research and other organizations together with industrial works. Institut ekonomiki AN SSSR (Institute of Economics AS USSR) reported on the countrywide economic effect of isotope application, and the Production Organization Department of MVTU im. Baumana (MVTU im. Bauman) on the effect in machine industry. The high economic effect was illustrated by data in many reports (the works "Russkiy Dizel'" ("Russian Diesel"), PTO im. Kirov and others). The major application in machine industry is to nondestructive inspection (gamma-defectoscopy), study of wear resistance of cutting tools and prime mover parts and automation problems. At the "Krasnyy kotel'shchik" works in

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Taganrog the use of gamma-defectoscopy cut from 60 % down to 10 % the number of complaints about defects in welds; at the locomotive repair works in Dnepropetrovsk complaints went down to 2 % (from former 35 %), and at the Zavod svarnykh konstruktsiy im. Babushkina (Welding Structure Works im. Babushkin) to 10 % (from 50 %). At the Moscow Automobile Works im. Likhachev (or ZIL) the central plant laboratory group of isotopes and radiation makes up to 1,200 gamma-ray photographs monthly for 15 plant shops and is using cobalt 60 (with ГУП-Co-5 (GUP-Co-5)/9 and ГУП-Co-50 (GUP-Co-50)/8 apparatus), and transportable containers with cesium-137 and iridium-192. A filmless defectoscope is under development for inspection of castings on conveyers. The "Krasnyy kotel'shchik" Plant (Taganrog) uses different gamma-ray means since 1947 for welds on boilers. Annular seams on large vessels are inspected by an ampoule with gamma-ray source placed in the mid of the vessel, and sometimes 6-12 ampoules spaced 0.5 m apart are used simultaneously. The plant builds a new laboratory in which stronger radiation sources can be used. In a report "On the Results of the Application of thulium-170 for gamma-defectoscopy" information was given on application to inspection of thin-walled (up to 10 mm) steel work. Thulium-170 of 0.5 g-equ. Ra activity in combination with the new ГУП-Tu-0.5 (GUP-Tu-0.5) installation 78 79

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raises the inspection rate by about 15 % (in combination with X-ray inspection). With a stronger activity the inspection rate can be doubled. Despite the high effect of application, practical use of gamma-defectoscopy is hampered by the low quality of films, insufficient assortment of apparatus and slow supply of radiation sources; automatic gamma-inspection is not possible. Wear inspection of machine parts and prime movers was treated in reports from ZIL: KhTZ (Khar'kov Traktor Works im. Ordzhonikidze); VTZ (Vladimir Traktor Works) NATI (Scientific Research Institute of the Automobile and Tractor Industry) and NAMI (Scientific Research Institute of Automechanics). High-speed test methods were developed for inspection of the wear-resistance of separate parts of the new Д -30 (D-30) engine of VTZ works. Jointly with NATI a method had been developed for studying the wear of parts in operating tractors and the accumulation of the wear products in circulating lubricant in filters; radioactive cobalt-60 tracers were used and proved that the wear of piston rings was three times as high in cold weather than in warm. The wear resistance of the D-30 engine cylinder block group had been raised by 50 %; test time had been cut down to 4-5 hours (from former 500-1,00 hours). A road laboratory of NAMI tests the wear of auto-

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mobile parts in different conditions in very short time. The wear of cutting tools is studied by activation of the specimens at Vsesoyuznyy nauchno-issledovatel'skiy instrumental'nyy institut VNII (All-Union Scientific-Research Institute of Instruments) and at the ZIL. Until now the metallurgical works used chemical laboratory tests for determining the thickness of tin coatings (dissolving the coating in acid) taking 30 minutes during which the shop continued work (probably producing waste), but now the isotope apparatus inspects the coating thickness in a few minutes and on both sides of the metal, and the process can be automated. The report of a delegate from Ukrainskiy nauchno-issledovatel'skiy trubnyy institut (Ukrainian Scientific Research Institute for Pipes) dealt with the application of isotopes to the study of production processes. Sulfur-35 and phosphorus-32 were used for studying the crystalline structure of centrifugally cast tubular billets and the sulfur distribution. The effect of hot rolling on the redistribution of sulfur and phosphorus in ready tubes was also studied, as well as in welds after automatic arc welding with two arcs under flux. It was stated that hot rolling causes sulfur redistribution on grain boundaries only, and more even than in cast steel; in weld metal

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the sulfur content grows mainly on account of the parent metal. ZIL and Moskovskiy stankoinstrumental'nyy institut (Moscow Institute of Machine Tools and Tools) in cooperation with Institut fiziki Latviyskoy SSR (Institute of Physics of the Latvian SSR) reported on automatic fluid level control for soaking the windings of electric motors and transformers at the ZIL works; automatic survey of operating stamping presses, etc. For instance, strontium-90 + yttrium-90 is used in an experiment unit for blocking separate machine units in automatic cold sheet stamping lines at the ZIL. The work of organizations supplying the equipment and materials was criticized in the conference resolution.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

POSTNIKOV, Vladimir Ivanovich; AVAKIMOV, G.G., red.

[Methodology of determining the efficiency of the use of radioisotopes] Metodika opredeleniia effektivnosti primeneniia radioaktivnykh izotopov. Moskva, Atomizdat, 1964. 103 p. (MIRA 17:11)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

POSTNIKOV, Vladimir Ivanovich; RAZUMOV, Ipplit Mikhaylovich; ZAV'YALOVA, A.N., red.

[Atomic energy in the national economy; its economics and use] Atomnaia energiia v narodnom khoziaistve; ekonomika i opyt primeneniia. Moskva, Ekonomika, 1964. 174 p. (MIRA 17:11)

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PHASE I BOOK EXPLOITATION SOV/5260

Postnikov, Vladimir Ivanovich, and Viktor Aleksandrovich Letenko

Effektivnost' radioaktivnogo kontrolya v mashinostroyenii; primenitel'no k gamma-defektoskopii (Effectiveness of Radioactive Control in Machine Building; Gamma-Defectoscopy) Moscow, Mashgiz, 1960. 143 p. Errata slip inserted. 4,000 copies printed.

Ed. (Title page): A.V. Topchiyev, Academician; Reviewers: L.K. Tatochenko, Candidate of Technical Sciences, and R.S. Kalinova; Ed.: A.S. Shtan', Candidate of Chemical Sciences; Ed. of Publishing House: M.M. Semenova; Tech. Ed.: V.D. El'kind; Managing Ed. for Literature on the Economics and Organization of Machine Building: T.D. Saksaganskiy, Engineer.

PURPOSE: This book is intended for specialists in industrial quality control. It will also be of interest to economists and technical personnel in machine-building factories and research institutes.

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POSTNIKOV, V. I., Cand Tech Sci -- "Technical and economic substantiation of the selection of radioactive isotopes in ~~gamma-ray metariology~~ gammaography." Mos, 1959 (Min of Higher Education USSR. Mos Order of Lenin and Order of Labor Red Banner Higher Tech School im Bauman). (KL, 1-61, 196)

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25(6) SOV/32-25-7-43/50

AUTHOR: Postnikov, V. I.

TITLE: Computation Method for the Determination of Expenses in Connection With Irradiation by Means of Radioactive Isotopes and Accelerators (Raschetnyy metod opredeleniya zatrat pri prosvechivanii s pomoshch'yu radioaktivnykh izotopov i uskoriteley)

PERIODICAL: Zavodskaya laboratoriya, 1959, Vol 25, Nr 7, pp 888-890 (USSR)

ABSTRACT: The present paper is a review of the topic mentioned in the title. In connection with the expansion of the use of the gamma-material testing it is advisable to establish the maximum sensitivity and minimum exposition time for certain tests. The use of Co^{60} is most favorable if samples of a thickness of 50-250 mm are irradiated; in the case of a thickness up to 50 mm (as is the case e.g. at the "Russkiy dizel'" factory, etc) the sensitivity of the method decreases and the expenses for protection from radiation increase. The gamma-rays of Cs^{137} are to be used with objects of a thickness of 10-100 mm; nevertheless, Cs^{137} is used for examinations of a thickness of 5-6 mm (e.g. at the Rizhskiy sudoremontnyy zavod (Riga Shipyard)).

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Computation Method for the Determination of Expenses in Connection With Irradiation by Means of Radioactive Isotopes and Accelerators

The isotope $Eu^{152,154}$ was not used very much because of its high price. Ir^{192} has a short half-life and is used for a thickness of 2.5-100 mm. In the present paper the samples to be controlled are divided into 6 groups (with respect to their thickness) (Table 1). Since the exposition time is an important factor in the calculation of the expenses in connection with the tests to be discussed it is calculated according to an equation and given for several radiation sources (Table 2). A computation of the annual expenses is given on account of the half-life of several radiation sources (Table 3). For computing the main expenses an equation (2) is given and the expenses for the irradiation of various isotopes is calculated (Table 4). On account of the results obtained indications are given as to the use of various isotopes in material testing in regard to the least expenses. There are 4 tables and 4 references, 3 of which are Soviet.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

POSTNIKOV, V.I.

Calculation of expenses of examination with the aid of radioactive isotopes and accelerators. Zav.lab. 25 no.7:888-890 '59. (MIRA 12:10)

(Radioisotopes--Industrial applications)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

LETENKO, V.A., kand.tekhn.nauk; POSTNIKOV, V.I., inzh.

Economical efficiency of using radioisotopes in machine building and metal cutting. Mashinostroitel' no.10:36-40 O '58. (MIRA 11:10)

(Radioisotopes--Industrial applications)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

SOV-117-58-10-25/35

AUTHORS: Letenko, V.A., Candidate of Economical Sciences; Postnikov, V.I., Engineer

TITLE: Problems of the Economical Effectiveness of the Use of Radioactive Isotopes in Machine Construction and Machining of Metal (Voprosy ekonomicheskoy effektivnosti primeneniya radioaktivnykh izotopov v mashinostroyenii i metalloobrabotke)

PERIODICAL: Mashinostroitel', 1958, Nr 10, pp 36 - 40 (USSR)

ABSTRACT: The authors comment on articles published in Soviet economical papers concerning the economical effectiveness of the use of radioactive isotopes in machine construction and machining of metal. They also point to similar investigations and results in the US presented by doctor V.F. Libby (Libbi) and M.E. Merchant (Merchent). Less concerned with theoretical deliberations and economical indices the authors base their preliminary conclusion on the high economy already obtained by the introduction of radioactive isotopes in these fields and the still greater savings expected in the near future on factual material gathered from Soviet plants and enterprises. They investigate problems in the use of radioactive isotopes in the contact-

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less thickness control of rollable sheet metal, in the contactless thickness control of metal plating by the method of reflection of radioactive radiation and in the utilization of marking and determination of optimal cutting conditions by aid of the marked atoms method. Inquiries of the Tsentral'naya laboratoriya avtomatiki tresta "Energochermet" (Central Laboratory of Automation of the "Energochermet" Trust), the manufacturer of devices utilizing radioactive isotopes for the control of the thickness of rollable sheet metal and the thickness of tin plating of tin plate, revealed that the following plants had made great savings both of material and money by the application of radioactive isotopes: the Magnitogorskiy metallurgicheskiy kombinat (Magnitogorsk Metallurgical Combine), Zavod "Zaporozhstal'" imeni S. Ordzhonikidze (The "Zaporozhstal'" Plant imeni S. Ordzhonikidze), the Leningradskiy staleprokatnyy i provolochno-kanatnyy zavod (Leningrad Steel Rolling and Wire and Rope Plant) and Lys'venskiy metallurgicheskiy zavod (The Lys'va Metallurgical Plant). The Central Laboratory of Automation of the "Energochermet" Trust and Fizicheskiy institut imeni P.N. Lebedeva AN SSSR (The AS USSR's Physical Institute imeni P.N. Lebedev) have

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developed an apparatus for the thickness control of rollable steel strip of 0.005 to 1 mm thickness at a possible rolling speed of up to 30 m per second. Since 1953, the following metallurgical and steel-rolling plants have used to advantage convenient apparatus of this kind: the Magnitogorsk Metallurgical Combine, the "Zaporozhstal'" Plant, the Leningrad Steel-rolling and Wire and Rope Plant, Leningradskiy zavod imeni Voroshilova (The Leningrad Plant imeni Voroshilov), Moskovskiy metallurgicheskiy zavod (The Moscow Metallurgical Plant), etc. These devices comprise 3 groups, depending on the thickness to be measured: 1) for 0.005 to 0.15 mm, using the radioactive isotope thallium 204; 2) 0.05 to 1.0 mm, using the isotopes of cerium 144, praseodymium 144 and, at present, mainly strontium 90; 3) 2.0 to 10 mm, using the radioactive isotopes iridium 192 and wolfram 185. Chemical analyses of the ekspress-laboratoriya MMK (Express Laboratory MMK) confirmed the positive results of the plants. The Institut fiziki AN Latviyskoy SSR (Physical Institute, AS Latvian SSR) and Leningradskiy staleprokatnyy zavod (The Leningrad Steel-Rolling Mill) cooperated in the first utilization of the

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radioactive isotope phosphorus 32 for the control of sorting cold-rolled steel strip in processing operations. For marking purposes, a radioactive isotope is applied on the steel band by aid of a special electrode containing phosphorus 32 in its compound. The isotope emits beta rays and has a half-decay period of 14.3 days. This method reduced the number of necessary chemical analyses from 8,635 to 3,369 a month. Radioactive isotope marking is also used in the same plant for the control of the welding seams (per coil) of wire passed through the wire-drawing mills. Basic study of the wear of cutting tools is under way at the Vsesoyuznyy nauchno-issledovatel'skiy instrumental'nyy institut (All-Union Scientific Research Tool Institute), the Institut mashinovedeniya AN SSSR (AS USSR Institute of Mechanical Engineering), the Moskovskiy avtozavod imeni Likhacheva (Moscow Automobile Plant imeni Likhachev), the kombinat tverdykh splavov (Hard Alloys Combine)

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and several other organizations. In connection with this research, the isotopes of cobalt 60, wolfram 185, wolfram 187 and others are "inserted". Results are entered on a graph, comparing the speed and cost of the investigation. Large savings were obtained. Reports from plants and research institutes on the use of radioactivated isotopes presented favorable balances.

1. Machines--Production 2. Radioisotopes--Applications

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A006/A101

AUTHOR: Postnikov, V. I.

TITLE: Selection of economically effective gamma emitters for flaw detection

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 12, 1961, 66, abstract 12E408 (V sb. "Radioakt. izotopy i yadern. izlucheniya v nar kh-ve SSSR,V. 3", Moscow, Gostoptekhizdat, 1961, 57-61)

TEXT: A study was made for the purpose of establishing the limits of the most efficient use of gamma-emitters, and of developing optimum limits of applying and selecting gamma-emitters on the basis of technical and economical indices. Nomograms are plotted which can be used to select both the source and its operational conditions, in order to assure highest inspection efficiency at minimum expense. The author established gammagraph expenses as a function of such factors as the thickness of metal to be inspected, type and intensity of the source, and gamma-raying conditions connected directly with industrial conditions. Comparison graphs make it possible to draw particular conclusions as to the limits of the most effective use of the analyzed sources. For up to

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Selection of economically effective gamma ...

100 mm thick metal, independent of the source intensity, Ir, Cs and Eu are preferable to Co, in respect to efficiency, transportation time, and expenses for the gammagraph. The application limit may be 60 mm for iridium, 100 mm and more for Cs and Eu. It is not recommended to use Tu on a thickness of over 10 - 15 mm. Co should be empoloyed for > 80 mm thick metals. Data are also presented on the use of gamma-flaw-detection at industrial enterprises and the economical effect obtained.

V. Tarisova

[Abstracter's note: Complete translation]

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342620015-7

BEZZUBOV, Aleksey Dmitriyevich; POSTNIKOV, Vladimir Ivanovich; FAYNBOYM, I.B., red.; ATROSHCHENKO, L.Ye., tekhn.red.

[Radioisotopes in the food industry] Radioaktivnye izotopy v pishchevoi promyshlennosti. Moskva, Izd-vo "Znanie," 1958. 30 p. (Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii. Ser. 8, vyp. 2, no.26) (MIRA 12:2)
(Food industry) (Radioisotopes--Industrial applications)

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