NIKONENKO, L.M.

Device for calibrating apparatus used in electric prospecting.
Razved. i prom. geofiz. no.21:54-55 '58. (MIRA 11:10)
(Prospecting--Geophysical methods--Equipment and supplies)

3637
S/580/61/000/000/006/016
A057/A126

AUTHORS: Chirko, A.I.; Nikonenko, M.G.

TITLE: Autoxidation of cyclohexylidenecyclohexane

SOURCE: Yerofeyev, B.V. and Tishchenko, I.G., eds. Zhidkofaznoye okisleniye nepredel'nykh organicheskikh soyedineniy, Minsk, 1961, 63 - 72

TEXT: Kinetics and products of initiated liquid-phase autoxidation of cyclohexylidenecyclohexane (I) are investigated in present work. A method employed in an earlier investigation was used in studying kinetics. The method of N.D. Zelinskiy was used to prepare (I) from cyclohexanone. Because of the instability of (I) reproducible results of the autoxidation kinetics could be obtained only with (I) freshly distilled over metallic sodium. Manganese stearate and caprinate, as well as cobalt acetate showed the greatest activity among 8 different initiators tested in autoxidation at 70°C. However, these substances effect also a decomposition of the primarily formed hydroperoxide. The most suitable initiator for the preparation of the hydroperoxide was found to be a 0.5% admixture of manganese acetate. The obtained primary product of autoxidation was determined to be 1-cyclohexylidene-hydroperoxide-cyclohexane-2 since by thermal decomposition of the

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latter 1-cyclohexylidene-cyclohexanone-2 was obtained, i.e., decomposition occurs without rupture of cycle and evolution of CO_2. Thus, the autoxidation occurs on the secondary carbon atom of the α-methylene group of the cycle. The rate of autoxidation was studied in dependence of the concentration of the initiator, of the concentration of (I), of the temperature, and of the molar weight of the anion of the initiator. Acetic acid, formed during autoxidation from the initiator used, was not decarboxylized. It is characteristic that an increase of the concentration [u] of cobalt acetate increases the maximum V_m of autoxidation, but decreases the average rate of autoxidation. The dependence of V_m on the concentration of (I) can be expressed by $V_m = KC_m^n$. From the temperature dependence of the rate of autoxidation $\log V_m - 1/T$ the activation energy was calculated with 19,585 cal//mole. The increase of the molecular weight of the anion of the initiator (manganese formiate, acetate, caprinate, and stearate) causes an increase of V_m and of the oxidation degree, while the content of hydroperoxide decreases (in relation to the oxidation degree). This can be expressed by $V_m = KM$ (M - molecular weight of the anion of the initiator, $K - 1.7 \cdot 10^{-4}$. There are 4 figures and 5 tables.

NIKONENKO, O.F., gornyy inzh.; ANDRIIUTS, G.L., gornyy inzh.;
POLISHCHUK, A.E., gornyy inzh.; VOLIKETS, M.A., gornyy inzh.

Operation of the SDG-1 bit-dressing machine. Sbor. nauch.
trud. KGRI no.15:82-86 '63. (MIRA 17:8)

GARKAVENKO, F.I.; MIRONENKO, [illegible], red.

[Program for the study of the fundamentals of scientific atheism; for clubs of the system of political education] Programma po izucheniiu osnov nauchnogo ateizma; dlia kruzhkov sistemy politicheskogo prosveshcheniia. Moskva, Politizdat, 1964. 15 p.
(MIRA 17:8)

NEGOVSKIY, Vladimir Aleksandrovich, laureat Gosudarstvennoy
premii, prof.; UMANETS, Nikolay Nikolayevich, zhurnalist;
NIKONENKO, S., red.

[Tale of conquered death] Rasskaz o pobezhdennoi smerti.
Moskva, Politizdat, 1965. 142 p. (MIRA 18:9)

Никоненко, В.

NIKONENKO,V.; PROKOF'YEV,A.

Undeveloped possibilities of an artel. Prom.koop. no.4:26-28 Ap'55. (MLRA 8:11)

(Tambov--Clothing industry)

R ✓

NIKONOVOV, K.V.; NIKONENKO, V.A.

Synthesis of some acyl and ethyl carbonic derivatives of dipropoxy-
α-hydroxy-β,β,β-trichloroethylphosphinic acid. Izv.Kazan.fil.
AN SSSR. Ser.khim.nauk no.6:75-80 '61. (MIRA 16:5)
(Phosphinic acid)

NIKONOROV, K.V.; NIKONENKO, V.A.

Synthesis of some esters of α-acetoxy-β,β,β-trichloroethylphosphinic acid. Izv. AN SSSR.Otd.khim.nauk no.10:1882-1884 O '62. (MIRA 15:10)

1. Institut organicheskoy khimii AN SSSR, Kazan'.
(Phosphinic acid)

ACC NR: AP6032589 SOURCE CODE: UR/0062/66/000/008/1373/1377

AUTHOR: Nikonorov, K. V.; Nikonenko, V. A.

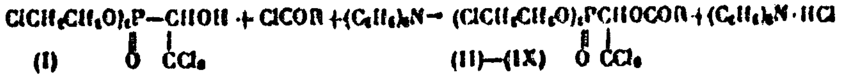
ORG: Institute of Organic Chemistry, Academy of Sciences, SSSR, Kazan' (Institut organicheskoy khimii Akademii nauk SSSR)

TITLE: Synthesis of some derivatives of β,β'-dichlorodiethyl α-hydroxy-β,β,β-trichloroethylphosphonate

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 8, 1966, 1373-1377

TOPIC TAGS: phosphonic acid, organic phosphorus compound

ABSTRACT: Earlier work had shown that some acyl, ethylcarbonic and phosphoric derivatives of dialkyl α-hydroxy-β,β,β-trichlorophosphonates had a marked fungicidal and insecticidal activity. Continuing those studies, the authors describe the synthesis of β,β'-dichlorodiethyl α-hydroxy-β,β,β-trichloroethylphosphonate (I) and some of its reactions with chlorides of lower carboxylic acid and acetic anhydride. Compound (I) was prepared by reacting chloral with β,β'-dichlorodiethylphosphorous acid, and the derivatives of (I) were synthesized as follows:



$$\underset{\text{(I)}}{(ClCH_2CH_2O)_2\underset{\underset{O}{\|}}{P}-\underset{\underset{CCl_3}{|}}{C}HOH} + ClCOR + (C_2H_5)_3N \rightarrow \underset{\text{(II)—(IX)}}{(ClCH_2CH_2O)_2\underset{\underset{O}{\|}}{P}\underset{\underset{CCl_3}{|}}{C}HOCOR} + (C_2H_5)_3N\cdot HCl$$

$R = C_2H_5$, C_3H_7-n, C_3H_7-i, OC_2H_5, CH_2Cl, $CHCl_2$, CCl_3

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ACC NR: AP6032589

Table 1

Number	Formula	Yield %	B.p. °C (P, mm Hg)	M.p. °C	n_D^{20}	d_4^{20}	MR found	MR calculated
(I)	$(ClCH_2CH_2O)_2\underset{\underset{O}{\|}}{P}-\underset{\underset{CCl_3}{|}}{C}HOH$	79,3	—	88—89	—	—	—	—
(II)	$(ClCH_2CH_2O)_2\underset{\underset{O}{\|}}{P}-\underset{\underset{CCl_3}{|}}{C}HOCOCH_3$	75,5	158—159 (0,012)	—	1,4975	1,5228	76,06	75,83
(III)	$(ClCH_2CH_2O)_2\underset{\underset{O}{\|}}{P}-\underset{\underset{CCl_3}{|}}{C}HOCOC_2H_5$	47,0	143—145 (0,013)	—	1,4955	1,4837	80,75	80,51
(IV)	$(ClCH_2CH_2O)_2\underset{\underset{O}{\|}}{P}-\underset{\underset{CCl_3}{|}}{C}HOCOC_3H_7\text{-}n$	46,1	154—155 (0,013)	—	1,4925	1,4445	85,36	85,13
(V)	$(ClCH_2CH_2O)_2\underset{\underset{O}{\|}}{P}-\underset{\underset{CCl_3}{|}}{C}HOCOC_3H_7\text{-}i$	44,7	137—139 (0,015)	—	1,4938	1,4321	85,83	85,13
(VI)	$(ClCH_2CH_2O)_2\underset{\underset{O}{\|}}{P}-\underset{\underset{CCl_3}{|}}{C}HOCOOC_2H_5$	52,2	166—168 (0,012)	—	1,4917	1,5334	82,27	82,15
(VII)	$(ClCH_2CH_2O)_2\underset{\underset{O}{\|}}{P}-\underset{\underset{CCl_3}{|}}{C}HOCOCH_2Cl$	44,8	—	52—53	—	—	—	—
(VIII)	$(ClCH_2CH_2O)_2\underset{\underset{O}{\|}}{P}-\underset{\underset{CCl_3}{|}}{C}HOCOCHCl_2$	55,6	—	81—83	—	—	—	—
(IX)	$(ClCH_2CH_2O)_2\underset{\underset{O}{\|}}{P}-\underset{\underset{CCl_3}{|}}{C}HOCOCCl_3$	44,5	—	61—63	—	—	—	—

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ACC NR: AP6032589

The physical constants of the synthesized derivatives of β,β'-dichloroethyl α-hydroxy-β,β,β-trichloroethylphosphonate are shown in Table 1. Orig. art. has: 1 table.

SUB CODE: 07/ SUBM DATE: 27Feb64/ ORIG REF: 005/ OTH REF: 001

Card 3/3

NIKONETS, I.Ye., LIFSHITS, M.I.

Carbon monoxide poisoning in a paint and varnish factory.
Gig. i san. 23 no.8:75 Ag '58 (MIRA 11:9)

1. Iz L'vovskoy gorodskoy sanitarno-epidemiologicheskoy stantsii.
(CARBON MONOXIDE--TOXICOLOGY)

NIKONETS, I.F.

Hygienic characteristics of histidine production. Gig.truda
i prof.zab. 3 no.4:52 Jl-Ag '59. (MIRA 12:11)

1. Meditsinskiy institut, L'vov.
(HISTIDINE)

NIKONETS, I.F.

Hygienic characteristics of labor conditions in the gray mercury ointment department of the Lwov Chemical and Pharmaceutical Plant. Gig.truda i prof.zab. 3 no.4:52-53 Jl-Ag '59. (MIRA 12:11)

1. Kafedra gigiyeny pitaniya Meditsinskogo instituta, L'vov.
(LVOV--DRUG INDUSTRY--HYGIENIC ASPECTS)
(MERCURY--TOXICOLOGY)

NIKONETS, I.F.; TSINMAN, Ye.Ya.; LIVSHITS, M.I. [deceased]

Improving working conditions in manufacturing "Chistotel" and "Metamorfoza" cremes at the Lvov Perfume Factory. Gig. i san. 24 no.9:81 S '59.
(MIRA 13:1)

1. Iz L'vovskoy gorodskoy sanitarno-epidemiologicheskoy stantsii.
(MERCURY--TOXICOLOGY) (COSMETICS INDUSTRY--HYGIENIC ASPECTS)

NIKONETS, I.F.

Occupational dermatitis related to the production of analgin and para-aminosalicylic acid. Vest. derm. i ven. 34 no.4:60-61 '60.
(MIRA 13:12)

(SKIN—DISEASES) (SALICYLIC ACID)
(AMINOPYRINE)

NIKONETS, I.F.; BELENKOVA, T.A. (L'vov)

Effect of amidopyrine on immunogenesis and the prothrombin forming function of the liver. Vrach. delo no.3:20-21 Mr '64. (MIRA 17:4)

1. Kafedra gigiyeny pitaniya (zav. - prof. A.I.Stolmakova) L'vovskogo meditsinskogo instituta.

FIRSOVA, P.P.; MAYSYUK, A.P.; NIKONOROV, A.I.

Diagnosis and treatment of cartilaginous formations in the lungs. Khirurgiia 38 no.12:28-34 D '62. (MIRA 17:6)

1. Iz Instituta khirgurgii imeni A.V. Vishnevskogo (direktor deystvitel'nyy chlen AMN SSSR prof. A.A. Vishnevskiy) AMN SSSR.

NIKONOROV, A.I.

Morphology of the terminal vascular network of the peritoneum under normal conditions and following the disturbance of portal blood circulation. Arkh. anat., gist. i embr. 49 no.10:6-11 O '65. (MIRA 18:12)

1. Kafedra normal'noy anatomii (zav. - prof. F.P.Markizov) Kuybyshevskogo meditsinskogo instituta. Submitted June 15, 1964.

L 31328-66 EWT(m)/EWA(d)/EWP(t) IJP(c) WJW/JD

ACC NR: AP5025591 SOURCE CODE: UR/0129/65/000/010/0016/0018

8
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3

AUTHOR: Nikonorova, A. I.; Florensova, F. R.

ORG: none

TITLE: Nitriding of austenitic steels

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 10, 1965, 16-18

TOPIC TAGS: nitridation, case hardening, steel, austenitic steel, nitriding, steel nitriding, nitrided case, case hardness, magnetic permeability, paramagnetic case/ * OKh20N4Ag10 steel, 2Kh18N9 steel, EI395 steel, EI702 steel

ABSTRACT: An attempt has been made to obtain a paramagnetic nitrided layer in * OKh20N4Ag10, 2KhN9, EI395, EI702 austenitic steels. Nitriding was done in a mixture of ammonia and ammonium chloride at 560, 600, and 650C. A nitrided case 0.2 mm deep with a respective hardness of 1027—1171 and 857—1027 was obtained in OKh20N4Ag10 and 2Kh18N9 steels. In the other two steels, the case was only 0.07—0.08 mm deep. Nitriding increased the magnetic permeability of all the four steels owing to the formation of magnetic nitrides Fe_4N, $(Fe, Mn)_4N$, and Cr_2N. However, annealing at 750 to 800C substantially reduced the magnetic permeability of the nitrided OKh20N4Ag10 steel. X-ray diffraction pattern showed that annealing at 800C resulted in the

* [Original states 'OX20H4AГ10 18 not OX20H4AГ10]

Card 1/2 UDC: 621.787.6:621.785.52'53

L 31328-66

ACC NR: AP5025592

decomposition of ferromagnetic nitrides and the formation of paramagnetic Mn_2N and CrN nitrides. Nitriding 0Kh20N14G10 steel at 550C for 48 hr, followed by annealing at 800C for 3 to 15 min and air cooling, yields a nitrided layer 0.25—0.30 mm thick with a hardness of HV 820—850 and a magnetic penetrability not exceeding 1.05 gs/e. Orig. art. has: 2 figures and 3 tables.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 003/ OTH REF: 002/ ATD PRESS: 4142

Card 2/2

NIKONOROV, A.P.

Fine proposal. Zdorov'e 6 no. 11:28 N '60. (MIRA 13:10)

1. Zamestitel' predsedatelya sovnarkhoza Belorusskoy SSR.
(WHITE RUSSIA—INDUSTRIAL HYGIENE)

NIKONOROV, A.P.

Cover glass for eyepieces. Izm. tekh. no. 3:61 Mr '61.
(MIRA 14:2)
(Optical instruments—Safety measures)

6

L 40166-66 EWT(l) SCTB DD

SOURCE CODE: UR/0413/66/000/013/0147/0147

ACC NR: AP6025681

INVENTOR: Privalov, A. I.; Yefremov, Ye. T.; Petkus, G. V.; Korovochkin, Yu. N.; Rakhleyeva, T. N.; Lavrov, G. D.; Sarykin, L. N.; Korolev, A. A.; Nikonorov, B. I.; Stepner, B. P.; Vasil'yeva, V. S.

31
5

ORG: none

TITLE: Annular parachute. 2 Class 62, No. 183608

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 13, 1966, 147

TOPIC TAGS: parachute, cargo parachute

ABSTRACT: An Author Certificate has been issued for an annular supply parachute consisting of a main canopy with shroud lines leading from the lower rim and brought

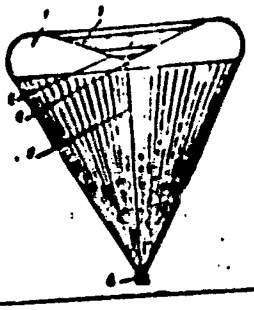

Fig. 1. Annular parachute

1 - Main canopy; 2 - auxiliary canopy;
3 - internal shroud lines; 4 - small eye ring;
5 - central strand; 6 - main eye ring.

UDC: 629.13.01/06

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L 40102-66

ACC NR: AP6025681

into an eye ring, and an auxiliary canopy placed inside the main canopy (see Fig. 1). To increase reliability and improve operational qualities, the auxiliary canopy in the form of a reversed cone is fastened to the main canopy's internal shroud lines, which are brought into a small eye ring connected to the main eye ring by a central strand. Orig. art. has: 1 figure. [WE]

SUB CODE: 01/ SUBM DATE: 03May65/ ATD PRESS: 5044

Card 2/2 //LP

NIKONOROV, I.V.

Observations of the behavior of the Caspian sprat. Vop.ikht. no.6: 21-36 '56.
(MLRA 9:8)

1. Kaspiyskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta morskogo rybnogo khozyaystva i okeanografii -- VNIRO.
(Sprats)

NIKONOROV, I.V.

Caspian Institute of Marine Fisheries and Oceanography Kaspnirkh

"The Basic Principles of Fishing for the Caspian Kilka by Underwater Light."
papers presented at the International Fishing Gear Congress at Hamburg, Germany from 7 - 12 Oct 57.

Trans: B-3,101,[illegible]

NIKONOROV, I. V. Cand Tech Sci -- (diss) "Catching of Caspian sprat by means of a fish pump with underwater illumination". Mos, 1957. 10 pp 20 cm. (Mos Tech Inst of the Fish Industry and Economy im A.I. Mikoyan) 115 copies (KL, 9-57, 101)

-22-

NIKONOROV, Ivan Vasil'yevich; KOSSOVA, O.N., red.; SOKOLOVA, I.A., tekhn.red.

[Catching Caspian sprat with a fish pump and underwater illumination] Lov kaspiiskoi kil'ki rybonasosom pri podvodnom osveshchenii. Moskva, Pishchepromizdat, 1958. 94 p. (MIRA 12:1)
(Caspian Sea--Fishing) (Sprats)

8(0) SOV/112-59-4-7249

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 4, p 115 (USSR)

AUTHOR: Nikonorov, I. V.

TITLE: Electric Tackle for Tuna Fishing

PERIODICAL: Tekhn.-ekon. byul. Sovnarkhoz Astrakhansk. ekon. adm. r-na, 1958, Nr 4, p 35

ABSTRACT: Bibliographic entry.

Card 1/1

NIKONOROV, I.

Theoretical bases of the process of fishing the Caspian Sea for herring h. using light.

P. 3, (MORSKO RIBARSTVO) (Rijeka, Yugoslavia) Vol. 10. no. 1. Jan. 1958

SO: Monthly Index of East European Accessions (EEAI) LC Vol. 7. No. 5. 1958

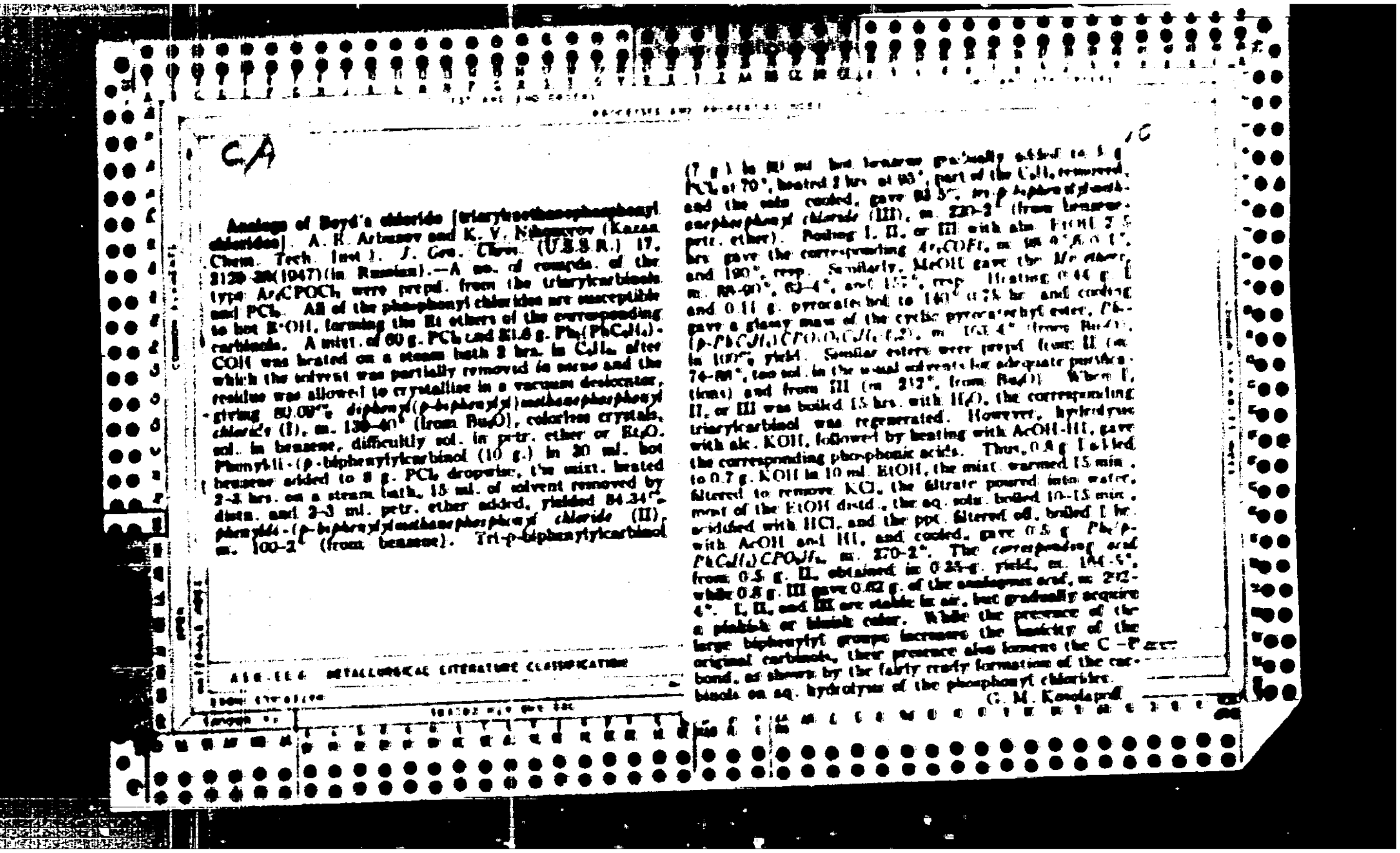
BELYAYEVA, V.N.; NIKONOROV, I.V.

Causes of the attraction of fishes by light. Vop. ikht. 1 no.3: 513-518 '61. (MIRA 14:11)

1. Kaspiyskiy nauchno-issledovatel'skiy institut morskogo rybnogo khozyaystva i okeanografii - KaspNIRO.
(Caspian Sea--Electric fishing)
(Light--Physiological effect)

NIKONOROV, Ivan Vasil'yevich; PATEYEV, Abdulla Khakimzhanovich; LANDA, N.G., red.

[Pump fishing of saury using light and current] Lov sairy nasosom s primeneniem sveta i toka. Moskva, Pishchevaia promyshlennost', 1964. 28 p. (MIRA 17:12)



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Analogs of Boyd's chloride [triarylmethanephosphonyl chlorides]. A. E. Arbuzov and K. V. Nikonorov (Kazan Chem. Tech. Inst.). *J. Gen. Chem.* (U.S.S.R.) 17, 2129-36(1947)(in Russian).—A no. of compds. of the type Ar_3CPOCl_2 were prepd. from the triarylcarbinols and PCl_5. All of the phosphonyl chlorides are susceptible to hot EtOH, forming the Et ethers of the corresponding carbinols. A mixt. of 60 g. PCl_5 and 81.6 g. $Ph_2(PhC_6H_4)$-COH was heated on a steam bath 3 hrs. in C_6H_6, after which the solvent was partially removed *in vacuo* and the residue was allowed to crystallize in a vacuum desiccator, giving 80.09% *diphenyl(p-biphenylyl)methanephosphonyl chloride* (I), m. 139-40° (from Bu_2O), colorless crystals, sol. in benzene, difficultly sol. in petr. ether or Et_2O. Phenyldi-(p-biphenylyl)carbinol (10 g.) in 30 ml. hot benzene added to 8 g. PCl_5 dropwise, the mixt. heated 2-3 hrs. on a steam bath, 15 ml. of solvent removed by distn. and 2-3 ml. petr. ether added, yielded 84.34% *phenyldi-(p-biphenylyl)methanephosphonyl chloride* (II), m. 100-2° (from benzene). Tri-p-biphenylylcarbinol (7 g.) in 80 ml. hot benzene gradually added to 5 g. PCl_5 at 70°, heated 2 hrs. at 95°, part of the C_6H_6 removed, and the soln. cooled, gave 93.5% *tri-p-biphenylylmethanephosphonyl chloride* (III), m. 220-2° (from benzene-petr. ether). Boiling I, II, or III with abs. EtOH 2.5 hrs. gave the corresponding Ar_3COEt, m. 98.0°, 86.0-1°, and 190°, resp. Similarly, MeOH gave the *Me ethers*, m. 88-90°, 63-4°, and 155°, resp. Heating 0.44 g. I and 0.11 g. pyrocatechol to 160° 0.75 hr. and cooling gave a glassy mass of the cyclic pyrocatechyl ester, Ph_2-$(p\text{-}PhC_6H_4)CPO(O_2C_6H_4\text{-}1,2)$, m. 163-4° (from Bu_2O), in 100% yield. Similar esters were prepd. from II (m. 74-80°, too sol. in the usual solvents for adequate purifications) and from III (m. 212°, from Bu_2O). When I, II, or III was boiled 15 hrs. with H_2O, the corresponding triarylcarbinol was regenerated. However, hydrolysis with alc. KOH, followed by heating with AcOH-HI, gave the corresponding phosphonic acids. Thus, 0.8 g. I added to 0.7 g. KOH in 10 ml. EtOH, the mixt. warmed 15 min., filtered to remove KCl, the filtrate poured into water, most of the EtOH distd., the aq. soln. boiled 10-15 min., acidified with HCl, and the ppt. filtered off, boiled 1 hr. with AcOH and HI, and cooled, gave 0.5 g. $Ph_2(p$-$PhC_6H_4)CPO_3H_2$, m. 270-2°. The *corresponding acid* from 0.5 g. II, obtained in 0.25-g. yield, m. 194-5°, while 0.8 g. III gave 0.62 g. of the analogous acid, m. 212-4°. I, II, and III are stable in air, but gradually acquire a pinkish or bluish color. While the presence of the large biphenylyl groups increases the basicity of the original carbinols, their presence also lowers the C–P bond, as shown by the fairly ready formation of the carbinols on aq. hydrolysis of the phosphonyl chlorides.

G. M. Kosolapoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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Some esters of triarylmethanephosphonic acids. A. E. Arbuzov and K. V. Nikonorov (Kazan Chem. Tech. Inst.). *J. Gen. Chem.* (U.S.S.R.) 17, 2129-40(1947)(in Russian).—The Arbuzov reaction was used to prep. a no. of new esters of triarylmethanephosphonic acids. $Ph_2(p-PhC_6H_4)CBr$ (9 g.) and 8.6 g. $(MeO)_3P$ were slowly heated to 120° (a spontaneous reaction begins at 70°) with distn. of MeBr; on cooling there was obtained 72.9% *di-Me diphenyl(p-biphenylyl)methanephosphonate*, colorless, m. 134-5° (from benzene-petr. ether, then Bu_2O). Similarly, $(EtO)_3P$ gave 83.15% of the *di-Et ester* (I), m. 147-8° (from petr. ether), yellow needles; while $(PrO)_3P$ gave 88.0% of the *di-Pr ester*, m. 122-3°, pale yellow. A mixt. of 3.2 g. $(iso-PrO)_3P$ and 6 g. $Ph_2(p-PhC_6H_4)CBr$, gradually heated to 205° until the distn. of iso-PrBr ceased and the cooled mixt. treated with petr. ether, gave 5.8 g. *di-iso-Pr diphenyl(p-biphenylyl)methanephosphonate*, m. 194-6° (from benzene-petr. ether); the yield was raised to 96.4% if the original reaction was conducted in PhMe; the product (II) in this case is purer and m. 198-8.5° (from benzene-petr. ether). $Ph_2(p-PhC_6H_4)CBr$ (4 g.) and 3 g. $(BuO)_3P$ in 1.5 ml. PhMe heated to 95° until soln. occurred, part of the solvent removed, and a few drops of petr. ether added, gave 72.54% of the corresponding *di-Bu ester* (III), m. 90-1°, colorless (from petr. ether). Heating I, II, or III in a sealed tube with 1.6 HCl 4-5 hrs. to 180-220° gave essentially quant. yields of $Ph_2(p-PhC_6H_4)CPO_3H_2$, m. 221-2° (from EtOH). Heating 5 g. $Ph_2(p-PhC_6H_4)CBr$ and 4 g. $(iso-BuO)_3P$ in 1.5 ml. PhMe to 145° gave 74.8% of the corresponding *di-iso-Bu ester*, yellowish, m. 93-4° (from petr. ether). Similar reactions using $Ph(p-PhC_6H_4)_2CBr$ gave the corresponding esters: *di-Me*, m. 150° (from Bu_2O), 81.7%; *di-Et*, m. 140-1° (from Bu_2O), 75.80%; *di-Pr*, m. 110-11° (from Bu_2O), 80.44%; *di-iso-Pr*, m. 159-60° (from Bu_2O), 88.72%; *di-Bu*, m. 87-9° (from Bu_2O), 74.52%; *di-iso-Bu*, m. 118-20° (from Bu_2O), 69.22%; hydrolysis of these esters under the conditions given above gave $Ph(p-PhC_6H_4)_2CPO_3H_2$, m. 182-4°. *Tri-p-biphenylylmethyl bromide* gave the corresponding esters: *di-Me*, m. 210-1° (from Bu_2O), 85.85%; *di-Et*, m. 144-5° (from benzene), 84.80%; *di-Pr*, m. 148-9° (from Bu_2O), 77.80%; *di-iso-Pr*, m. 177-8° (from Bu_2O), 86.65%; *di-Bu*, m. 132-3° (from Bu_2O), 82%; *di-iso-Bu*, m. 120-1°, 76.58%; hydrolysis of these in sealed tubes as described above gave *tri-(p-biphenylyl)methanephosphonic acid*, m. 302-4° (from EtOH).

G. M. Kosolapoff

NIKONOROV, K. V.

USSR/Chemistry - Alcoholates Jun 48
Chemistry - Phosphinic Acid, Triarylmethyl,
Ester of

"The Action of Boyd's Chloranhydride Analogues on Alcoholates," A. Ye. Arbuzov, K. V. Nikonorov, Lab of Org Chem, Kazan Chem Tech Inst, 7 3/4 pp

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

Alcoholates react with analogues of Boyd's chloranhydride to form chloresters (I) or diesters of corresponding triarylmethylphosphinic acids (II); II can be formed from I by saponification. Submitted 18 Jul 1947.

[illegible] 9/49T82

NIKONOROV, K. V.

A.E. Arbuzov and K.V. Nikonorov. On obtaining certain esters of diphenyl-phosphinous acid. p. 2008.

By the action of methyl, benzyl and allyl alcohol on diphenyl-chlorphosphine, we obtained methyl benzyl and alkyl esters of di-phenyl phosphinous acid. These esters being derivatives of 3-valent phosphorus, isomerize exceedingly easily under the influence of allyl halides into compounds with 5-valent phosphorus. All three esters have great ability to react.

Chemical Inst. of the Kazan Branch of
the Academy of Sciences, USSR.
July 8, 1948

SO: Journal of General Chemistry (USSR) 18, (80) No. 11, 1948

USSR/Chemistry - Phosphoric Acid, Thioesters   Sep 48

Chemistry - Synthesis

"Synthesis and Studies of the Properties of Mixed Thioesters of Phosphoric Acid," Acad A. Ye. Arbuzov, K. V. Nikonorov, Chem Inst imeni A. Ye. Arbuzov, Kazan Affiliate, Acad Sci USSR, 4 pp

PA 35/49T9

"Dok Ak Nauk SSSR" Vol LXII, No 1

The compounds $(C_2H_5O)_2PSC_2H_5$, $C_2H_5OP(SC_2H_5)_2$, $(C_3H_7O)_2PSC_3H_7$, and $C_3H_7OP(SC_3H_7)_2$ were synthesized in yields of 61, 89, 36, and 85% respectively, as follows: $(RO)_2PCl + RSNa \rightarrow (RO)_2PSR + NaCl$;

35/49T9

USSR/Chemistry - Phosphoric Acid, Thioesters (Contd)   Sep 48

$ROPCl_2 + 2RSNa \rightarrow ROP(SR)_2 + 2NaCl$. They are unstable compounds oxidizing rapidly in air, and boil between 75° and 120° under 10 - 15 mm pressure. Briefly describes their chemical properties. Submitted 9 Jul 48.

35/49T9

NIKONOROV, K. V.

C-1, Inorganic, pure and applied

Br. Abs.

2608. Substitution of glass filters for paper filters in determination of phosphorus. K. V. Nikonorov (J. anal. Chem. U.S.S.R., 1950, 5, 124).—The NH_4 phosphomolybdate ppt. can conveniently be collected on a sintered-glass filter and dissolved on the filter by the NaOH used in the alkalimetric titration.

G. S. Smith

PUDOVIK, A.N.; NIKONOROV, K.V.

Academician Aleksandr Erminigel'dovich Arbuzov (on 75th birthday). Uspekhi Khim. 21, 1137-53 '52. (MLRA 5:12)
(CA 48 no.21413 '54)

Glycol esters of pyrophosphorous acid. B. A. Arbuzov, V. Nikonorov, O. N. Fedorova, [illegible] Vershinin [illegible] Kazan [illegible] [illegible] [illegible] [illegible] of the [illegible] [illegible] of [illegible] and [illegible] [illegible]

Me_2NPh, or Et_3N) to 2 moles $O.CH_2CH_2O.PCl$ [illegible] with stirring. Stirring after [illegible] 2 parts Et_2O at about [illegible] with stirring [illegible] at room temp. [illegible] $(CH_2O)_2P)_2O$, [illegible] were obtained the following esters [illegible] and [illegible] shown): $(O.CHMe.CH_2.O.P)_2O$, [illegible] [illegible] 1.4635 [illegible] 24.3 [illegible] 1.5426, 1.414 [illegible] These esters [illegible] 1.2420, 1.4 [illegible]

S and react [illegible] with [illegible]

PCl with [illegible] [illegible] of the [illegible] [illegible] b_1 6°/2, 1.1 [illegible] 1.4557 [illegible] Pt. 42.4, 91-1°/2, 1.1 [illegible]

[illegible] [illegible] 1.0095 [illegible] 2, 1.4845, 1.4460 [illegible] $(O.CHRCH_2CD.CH_2.O.)$ [illegible] 125-7°/1-2, 1.1 [illegible] [illegible] 117 [illegible] possess the [illegible] properties of the [illegible] [illegible] higher [illegible] esters are reduced [illegible] [illegible] [illegible]

USSR.

Esters of propylene glycol-phosphoric and -thiophosphoric acid. [illegible] M. A. [illegible] [illegible] Akad. Nauk [illegible]

[illegible]

ARBUZOV, B.A.; NIKONOROV, K.V.; VINOKUROVA, G.M.; FEDOROVA, O.N.;
SHISHOVA, Z.G.

Certain glycol esters of pyrophosphorous acid. Izv.Kazan.fil.
AN SSSR Ser.khim. nauk. no.2:3-17 '55. (MLRA 10:5)
(Glycols) (Pyrophosphorous acid)

Nikanorov, K. C.

[illegible] of [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] Kazan. [illegible] Akad. Nauk S.S.S.R., [illegible] Kazan. [illegible] 223-31 (Feb. 1957). — Reaction of $(RO)_2POH$ with [illegible] (cf. [illegible] C.A. 49, [illegible]), gave $(RO)_2P(O)$[illegible]$(OH)CCl_3$ [illegible] [illegible]. The products were treated with $(RO)_2POCl$ in presence of Et_3N in Et_2O, C_6H_6, pet. ether or cyclohexane, heat at 35-50° [illegible] yielding the following: $(EtO)_2P(O)CH(CCl_3)OP(O)(OEt)_2$, [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. Tests with [illegible] [illegible] showed this group to be effective insecticides [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

NIKONAROV, K.V., VINOKUROVA, G.M., SPERA

[illegible]

Thiono esters of dithiophosphoric acid as insecticides. B. A. Arbuzov, K. V. Nikonorov, and G. M. Vinokurova (A. E. Arbuzov Chem. Inst., Acad. Sci. U.S.S.R., Kazan). Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk 1955, 671-6; Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci. 1955, 597-9 (Engl. translation).—To 20 g. (EtO)$_2$PSSH and 8 g. EtSH was added at −10° 5.6 g. AcH, keeping the temp. under 0°; after 2 hrs. at room temp. the 3 ml. H$_2$O that had formed was sepd. and the product dried, yielding [illegible] (EtO)$_2$P(S)SCHMeSEt, b$_1$ [illegible] [illegible] To [illegible] g. (EtO)$_2$PSSH and [illegible] g. [illegible] was added [illegible] AcH, the resulting [illegible] being [illegible] 0.5 hr. at room temp. [illegible] yielding [illegible] (EtO)$_2$P(S)SCHMeSEt, b$_1$ 118 [illegible] The same product was obtained in [illegible] yield from [illegible] g. (EtO)$_2$PSSH, 4.4 g. AcH, and 6.0 g. EtSH [illegible] with [illegible] Na$_2$CO$_3$ and H$_2$O, and not distd. [illegible] and d$_{20}$ 1.[illegible] Similarly [illegible] (PrO)$_2$PSSH [illegible] (PrO)$_2$P(S)SCHMeSEt, b$_1$ 122-8°, [illegible] (BuO)$_2$P(S)SCHMeSEt, n$_D^{20}$ 1.5[illegible] d$_{20}$ 1.[illegible] obtained in 73.5% yield, could not be distd. without decompn. Similarly undistillable was (iso-BuO)$_2$P(S)SCHMeSEt, 87.5%, n$_D^{20}$ 1.[illegible] d$_{20}$ 1.0522. The [illegible] esters showed weak insecticidal action against [illegible] after 2-3 day exposure; the other esters were very much less potent. [illegible] Kosolapoff

[illegible]

"Synthesis of Some Esters of Dialkylphonotrichloroethyl Phosphate and Derivatives of Pyrophosphoric Acid,"
paper presented at the First Conference on Phosphorous Compounds, Kazan,
8-10 Dec 56

SO: B-3,084,341

NIKONOROV, K. V.; VINOKUROVA, G. M.; SPERANSKAYA Z. G. (Chem. Inst. im. Acad. A. Ye. Arbuzov, Kazan Aff. AS USSR)

"Synthesis of Some Esters of alpha-Dialkylphosphon-beta, beta$_1$, beta$_2$-trichloroethylphosphoric Acid and Deratives of Pyrophosphoric Acid (sintez nekotorykh efirov alpha-dialkilfosfon-beta, beta$_1$, beta$_2$-trikhloretilfosfornoy kisloty i proizvodnykh pirofosfornoy kisloty)

Chemistry and Uses of Organophosphorous Compounds
(Khimiya i primeneniye fosfororganicheskikh soyedneniy),
Trudy of First Conference, 8-10 December 1955, Kazan,
Published by Kazan Affil. AS USSR, 1957
pp. 223-231

[illegible], K. V.

5

[illegible] A. N. [illegible], D. A. [illegible] 4E2d

[illegible] and [illegible]

obtained [illegible]

BCl₃ [illegible]

Sulfur and selenium analogs of [illegible]

A. E. [illegible]

[illegible]

[illegible] P. I. Alsop and K. V. [illegible] U.S.S.R. 105,690, Dec. 26, 1957. [illegible] phosphate is made to react with diethyl phosphite and [illegible] The resulting tetraethyl pyrophosphate is used as insecticide.

M. Hosch

NIKONOROV, K. V.

Distr: 4E2c(j)/4Ehj
4E4l

Syntheses of mixed ester amides of [illegible] thiopyrophosphoric acid. [illegible] Nikonorov and Z. G. Speranskaya (A. E. Arbuzov Chem. Inst., Kazan). [illegible] S.S.S.R., Otdel. Khim. Nauk 1957, [illegible]. — To $(RO)_2P(S)SH$ prepd. by heating $(RO)_2PHO$ with S in presence of Et_3N 1 hr. at 60° was added $(Me_2N)_2POCl$ and heated 4-8 hrs. at 60°, the mixt. dild. with gasoline, the pptd. amine salt sepd., and the product distd. There were obtained: 55% $(Me_2N)_2P(O)OP(S)(OPr)_2$, $b_{0.1}$ 150-60°, d_{20} 1.1186, n^{20}_D 1.4700; 48% $(Me_2N)_2P(O)OP(S)(OCHMe_2)_2$, b 150-3°, 1.1237, 1.4685; 31.7% $(Me_2N)(Et_2N)P(O)OP(S)(OPr)_2$, $b_{0.4}$ 140-42°, 1.0960, 1.4710; 40% $(Me_2N)_2P(O)OP(S)(OBu)_2$, b 154-7°, 1.0658, 1.4665; $(Me_2N)_2P(O)OP(S)(OCH_2CHMe_2)_2$, $b_{0.4}$ 150-60°, 1.[illegible], 1.4642. The $(RO)_2P(S)SH$, prepd. as above, was treated at 60° with $(Et_2N)_2PCl$ and calcd. amount of powd. S and the mixt. heated 5-6 hrs. at 60° gave the following products, isolated after diln. with gasoline, filtration, and concn.: [illegible] $(Et_2N)_2P(S)OP(S)(OEt)_2$, b 153-6°, [illegible], 1.50[illegible]; 40.0% $(Et_2N)_2P(S)OP(S)(OPr)_2$, b [illegible], 1.0990, [illegible]; 36.5% $(Et_2N)_2P(S)OP(S)(OCHMe_2)_2$, b 165-8°, [illegible], 1.4913; 85% $(Et_2N)_2P(S)OP(S)(OBu)_2$, b 172-[illegible], [illegible], 1.4900; [illegible] $(Et_2N)_2P(S)OP(S)(OCH_2CHMe_2)_2$, b [illegible], 1.0567, 1.4880. The products had [illegible] insecticidal activity.

G. M. Kosolapoff

VINOKUROVA, G.M.; NIKONOROV, K.V.

Synthesis of mixed esters of pyrophosphoric monothiopyrophosphoric and dithiopyrophosphoric acids. Izv.Kazan.fil.AN SSSR. Ser.khim.nauk no.4:59-67 '57. (MIRA 12:5)

(Pyrophosphoric acid)

(Thiopyrophosphoric acids)

AUTHORS: Nikonorov, K. V., Speranskaya, Z. G. SOV/62-58-8-8/22

TITLE: Synthesis of Octaalkyl Tetraamido Pyrophosphate and Octaalkyl Tetraamido Thiopyrophosphate (Sintez oktaalkiltetraamidpirofosfatov i oktaalkiltetraamidtiopirofosfatov)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk, 1958, Nr 8, pp. 964-967 (USSR)

ABSTRACT: In the present paper the authors tried to synthesize some alkyl amides of pyrophosphoric and thiopyrophosphoric acid. Besides, they investigated the alkyl amides with respect to their insecticide properties. As may be seen from this paper they successfully carried out the synthesis of nine (9) nitrogen containing analogs of pyrophosphoric and thiopyrophosphoric acid; they are: hexamethyl-diethyl tetraamido pyrophosphate, tetramethyl-tetraethyl tetraamido pyrophosphate, tetramethyl-tetraethyl tetraamido pyrophosphate, dimethyl-hexaethyl tetraamido pyrophosphate, octaethyl tetraamido pyrophosphate, hexamethyl-diethyl tetraamido thiopyrophosphate, tetramethyl-tetraethyl tetraamido thiopyrophosphate, dimethyl-hexamethyl tetraamido thiopyrophosphate, and octaethyl-tetraamido thiopyrophosphate.

Card 1/2

Synthesis of Octaalkyl Tetraamido Pyrophosphate and Octaalkyl Tetraamido Thiopyrophosphate SOV/62-58-8-8/22

There are 1 table and 5 references, 3 of which are Soviet.

ASSOCIATION: Khimicheskiy institut im. A. Ye. Arbuzova Kazanskogo filiala AN SSSR (Institute of Chemistry imeni A. Ye. Arbuzov, Kazan' Branch, AS USSR)

SUBMITTED: January 17, 1957

Card 2/2

5(3)

AUTHOR: Nikonorov, K. V. SOV/62-58-11-10/26

TITLE: Synthesis of Some Esters of α-(Dialkyl Phosphono)-β,β,β-Trichloroethyl Phosphoric Acid and α-(Dialkyl Phosphono)-β,β,β-Trichloroethyl Esters of Carboxylic Acids and Their Derivatives (Sintez nekotorykh efirov α-(dialkilfosfon)-β,β,β-trikhloretilfosfornoy kisloty i α-(dialkilfosfon)-β,β,β-trikhloretilovykh efirov karbonovykh kislot i ikh proizvodnykh)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1958, Nr 11, pp 1540-1544 (USSR)

ABSTRACT: In the present paper the author tried to carry out a reaction between dimethyl - (I) and diethyl - (II) -ester of the α-oxy-β,β,β-trichloroethyl phosphinic acid and various chlorides of dialkyl phosphoric and some carboxylic acids. The initial compounds (I) and (II) were produced according to the method by Barthel and his collaborators (Ref 2). By the interaction of dimethyl and diethyl ester of the α-oxy-β,β,β-trichloroethyl phosphinic acid with acid chlorides of the dialkyl phosphoric acid in the presence of triethylamine various esters of the α-(dialkyl phosphono)-

Card 1/3

Synthesis of Some Esters of α-(Dialkyl Phosphono)-
β,β,β-Trichloroethyl Phosphoric Acid and
α-(Dialkyl Phosphono)-β,β,β-Trichloroethyl Esters
of Carboxylic Acids and Their Derivatives

SOV/62-58-11-10/26

β,β,β-trichlorophosphoric acid were obtained. By the interaction of dimethyl and diethyl ester of the α-oxy-β,β,β-trichloroethyl phosphinic acid with acyl halides α-(dialkyl phosphono)-β,β,β-trichloroethyl ester of the carboxylic acids and some of their derivatives could be obtained in good yields. The constants of the obtained esters are given (Tables 1 and 2). Since the initial compounds, especially (I), are strong insecticides (Ref 3) the synthesized esters were examined also in this respect. The first experiments carried out at the Kazanskiy filial Akademii nauk SSSR (Kazan' Branch of the Academy of Sciences USSR) by M. A. Kudrina have shown that all products obtained dispose of rather strong insecticide properties. Investigations carried out in the scientific institute po udobreniyam i insektofungisidam (Institute of Fertilizers and Insectofungicides) by Ye. A. Pokrovskiy have shown that the compounds have a systematic action on some types of corrodentia. There are 2 tables and 4 references, 1 of which is Soviet.

Card 2/3

Synthesis of Some Esters of α-(Dialkyl Phosphono)-β,β,β-Trichloroethyl Phosphoric Acid and α-(Dialkyl Phosphono)-β,β,β-Trichloroethyl Esters of Carboxylic Acids and Their Derivatives SOV/62-58-11-10/26

ASSOCIATION: Khimicheskiy institut im. A. Ye. Arbuzova Kazanskogo filiala AN SSSR (Chemical Institute imeni A. Ye. Arbuzov, Kazan' Branch of the Academy of Sciences, USSR)

SUBMITTED: March 18, 1957

Card 3/3

NIKONOROV, K.V.

Synthesis of acyl and ethyl carbonic derivatives of some dialkoxy-α-hydroxy-β,β,β-trichloroethylphosphinic acid. Izv.Kazan.fil. AN SSSR. Ser.khim.nauk no.6:68-74 '61. (MIRA 16:5)
(Phosphinic acid)

NIKONOROV, K.V

NIKONOROV, K.V.; NIKONENKO, V.A.

Synthesis of some acyl and ethyl carbonic derivatives of dipropoxy-α-hydroxy-β,β,β-trichloroethylphosphinic acid. Izv.Kazan.fil. AN SSSR. Ser.khim.nauk no.6:75-80 '61. (MIRA 16:5)
(Phosphinic acid)

NIKONOROV, K.V.; NIKONENKO,V.A.

Synthesis of some esters of α-acetoxy-β,β,β-trichloroethylphosphinic acid. Izv. AN SSSR.Otd.khim.nauk no.10:1882-1884 O '62. (MIRA 15:10)

1. Institut organicheskoy khimii AN SSSR, Kazan'.
(Phosphinic acid)

NIKONOROV, K.V.; SPERANSKAYA, Z.G.

Atomic refraction of nitrogen in some organophosphorus compounds.
Izv.AN SSSR.Ser.khim. no.2:378-379 F '64. (MIRA 17:3)

1. Khimicheskiy institut im. A.Ye.Arbuzova AN SSSR.

L 35321-66 EWT(m)/EWP(j) RM

ACC NR: AP6026895 SOURCE CODE: UR/0062/65/000/012/2136/2140

AUTHOR: Nikonorov, K. V.; Gurylev, E. A.

18

6

ORG: none

TITLE: Certain esters of ethylphosphinic acid

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 12, 1965, 2136-2140

TOPIC TAGS: ester, phosphinic acid, chemical synthesis

ABSTRACT: The authors describe the synthesis of certain esters of ethyl-(alpha-acetoxy-beta, beta, beta-trichloroethyl)phosphinic acid by reaction of acetic anhydride with the esters of ethyl-alpha-oxy-beta,beta,beta-trichloroethyl) phosphinic acid in the presence of several drops of conc. H_2SO_4 as catalyst. This also led to the synthesis of previously undescribed esters of ethyl-(alpha-oxy-beta,beta,beta-trichloroethyl)-phosphinic acid obtained by reaction of incomplete esters of ethylphosphinous acid with chloral. It is shown that the dehydrochlorination of esters of ethyl-(alpha-oxy-beta,beta,beta-trichloroethyl)phosphinic acid leads to rearrangment with the formation of beta,beta-dichlorovinyl esters of ethylphosphinic acid. Orig. art. has: 1 table. [JPRS: 36,455]

SUB CODE: 07 / SUBM DATE: 02Aug63 / ORIG REF: 004 / OTH REF: 002

UDC: 542.91+661.718.1

Card 1/1

5926 2653

ACC NR: AP6032589 SOURCE CODE: UR/0062/66/000/008/1373/1377

AUTHOR: Nikonorov, K. V.; Nikonenko, V. A.

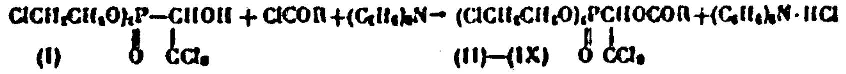
ORG: Institute of Organic Chemistry, Academy of Sciences, SSSR, Kazan' (Institut organicheskoy khimii Akademii nauk SSSR)

TITLE: Synthesis of some derivatives of β,β'-dichlorodiethyl α-hydroxy-β,β,β-trichloroethylphosphonate

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 8, 1966, 1373-1377

TOPIC TAGS: phosphonic acid, organic phosphorus compound

ABSTRACT: Earlier work had shown that some acyl, ethylcarbonic and phosphoric derivatives of dialkyl α-hydroxy-β,β,β-trichlorophosphonates had a marked fungicidal and insecticidal activity. Continuing those studies, the authors describe the synthesis of β,β'-dichlorodiethyl α-hydroxy-β,β,β-trichloroethylphosphonate (I) and some of its reactions with chlorides of lower carboxylic acid and acetic anhydride. Compound (I) was prepared by reacting chloral with β,β'-dichlorodiethylphosphorous acid, and the derivatives of (I) were synthesized as follows:



$$(ClCH_2CH_2O)_2\underset{\underset{O}{\|}}{P}-\underset{\underset{CCl_3}{|}}{C}HOH + ClCOR + (C_2H_5)_3N \rightarrow (ClCH_2CH_2O)_2\underset{\underset{O}{\|}}{P}\underset{\underset{CCl_3}{|}}{C}HOCOR + (C_2H_5)_3N\cdot HCl$$

(I) (II)—(IX)

$R = C_2H_5$, C_3H_7-n, C_3H_7-i, OC_2H_5, CH_2Cl, $CHCl_2$, CCl_3.

Card 1/3 UDC: 542.91+661.718.1

ACC NR: AP6032589

Table 1

Number	Formula	Yield, %	BP, °C (P, mm Hg)	MP °C	n_D^{20}	d_4^{20}	MR found	MR calculated
(I)	$(ClCH_2CH_2O)_2\underset{\underset{O}{\Vert}}{P}-\underset{\underset{CCl_3}{\vert}}{C}HOH$	79,3	—	88—90	—	—	—	—
(II)	$(ClCH_2CH_2O)_2\underset{\underset{O}{\Vert}}{P}-\underset{\underset{CCl_3}{\vert}}{C}HOCOCH_3$	75,5	158—159 (0,012)	—	1,4975	1,5228	76,06	75,89
(III)	$(ClCH_2CH_2O)_2\underset{\underset{O}{\Vert}}{P}-\underset{\underset{CCl_3}{\vert}}{C}HOCOC_2H_5$	47,0	143—145 (0,013)	—	1,4955	1,4837	80,75	80,51
(IV)	$(ClCH_2CH_2O)_2\underset{\underset{O}{\Vert}}{P}-\underset{\underset{CCl_3}{\vert}}{C}HOCOC_3H_7\text{-}n$	48,1	154—155 (0,013)	—	1,4925	1,4445	85,34	85,13
(V)	$(ClCH_2CH_2O)_2\underset{\underset{O}{\Vert}}{P}-\underset{\underset{CCl_3}{\vert}}{C}HOCOC_3H_7\text{-}i$	44,7	137—139 (0,015)	—	1,4908	1,4321	85,83	85,13
(VI)	$(ClCH_2CH_2O)_2\underset{\underset{O}{\Vert}}{P}-\underset{\underset{CCl_3}{\vert}}{C}HOCOOC_2H_5$	52,2	166—168 (0,012)	—	1,4917	1,5334	82,27	82,15
(VII)	$(ClCH_2CH_2O)_2\underset{\underset{O}{\Vert}}{P}-\underset{\underset{CCl_3}{\vert}}{C}HOCOCH_2Cl$	44,8	—	52—53	—	—	—	—
(VIII)	$(ClCH_2CH_2O)_2\underset{\underset{O}{\Vert}}{P}-\underset{\underset{CCl_3}{\vert}}{C}HOCOCHCl_2$	55,6	—	81—83	—	—	—	—
(IX)	$(ClCH_2CH_2O)_2\underset{\underset{O}{\Vert}}{P}-\underset{\underset{CCl_3}{\vert}}{C}HOCOCCl_3$	44,5	—	61—63	—	—	—	—

Card 2/3

ACC NR: AP6032589

The physical constants of the synthesized derivatives of β,β'-dichloroethyl α-hydroxy-β,β,β-trichloroethylphosphonate are shown in Table 1. Orig. art. has: 1 table.

SUB CODE: 07/ SUBM DATE: 27Feb64/ ORIG REF: 005/ OTH REF: 001

Card 3/3

L 36724-66 EWT(m)/EWP(j) RM

ACC NR: AP6021419 SOURCE CODE: UR/0413/66/000/011/0021/0021

AUTHOR: Nikonorov, K. V.; Gurylev, E. A.

ORG: none

3 3 B

TITLE: Preparation of (β-mono-) or (β-dihalo-α-hydroxyethyl)phosphonous acids. Class 12, No. 182155

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 11, 1966, 21

TOPIC TAGS: organic synthetic process, organic phosphorus compound, halogenated organic compound, alkylphosphonous acid derivative

ABSTRACT: The subject of this invention is a method for preparing the (β-mono-) or (β-dihalo-α-hydroxyethyl)phosphonous acids by treating hypophosphorous acid in a boiling inert solvent with anhydrous α-haloaldehyde. [JK]

SUB CODE: 07/ SUBM DATE: 13Apr65

Card 1/1 UDC: 547.419.1.07

ACC NR: AP7011353

SOURCE CODE: UR/0062/66/000/011/1902/1907

AUTHOR: Kargin, Yu. M.; Nikonorov, K. V.

ORG: Institute of Organic Chemistry, Academy of Sciences USSR, Kazan' (Institut organicheskoy khimii AN SSSR)

TITLE: On the Mechanism of the reduction of 0,0-dimethyl-2,2,2-trichloro-1-hydroxyethylphosphinate on a dropping mercury electrode

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 11, 1966, 1902-1907

TOPIC TAGS: chemical reduction, chopping electrode, electrode reaction, chlorinated organic compound, organic phosphorus compound

SUB CODE: 07

ABSTRACT: The mechanism of the reduction of chlorophos (0,0-dimethyl-2,2,2-trichloro-1-hydroxyethyl-phosphinate) was studied to determine the nature of the limiting current, whether or not the total electrode process is reversible, how many electrons and protons participate in the electrode reaction, whether or not protons participate in the potential determining step, what group in the molecule is reactive, and what product is obtained. The overall scheme of the electrode process in the reduction of chlorophos on a dropping mercury electrode was established. It was hypothesized that the electrode reaction is a two-step process: two-electron cleavege of the C-Cl bond with the addition of one proton and the re-

Card 1/2

UDC: 541.124 + 541.13 + 542.941 + 661.718.1

0931 1731

ACC NR: AP7011353

moval of a chloride anion. The most probable site of the molecule subjected to attack by the electron should be the carbon atom of the trichloromethyl group. This was confirmed experimentally. The first step of the electrode reaction was characterized on the basis of the theory of irreversible waves. The heat of activation characterizing the first step was found to be 12.9 kcal/mole. V. I. Sannikova and I. B. Karimova took part in the experimental work. Orig. art. has: 5 figures and 2 formulas. /JPRS: 40,351/

Card 2/2

NIKONOROV, N.M.; MARSOV, A.V.; YERMAKOV, P.Ye.; KAL'MANOVICH,
S.L., kand. tekhn. nauk, red.; KUREPINA, G.N., red.izd-va;
SPERANSKAYA, O.V., tekhn. red.

[Handbook on laboratory weighing instruments and weights]
Spravochnik po laboratornym vesam i giriam. Moskva,
Mashgiz, 1963. 191 p. (MIRA 16:12)
(Laboratories--Equipment and supplies)
(Weights and measures)

NIKONOROV, P.F.

Conference-seminar of veterinary specialists. Veterinariia 37 no.10:93 O '60. (MIRA 15:4)
(Tomsk Province—Veterinary medicine—Congresses)

TRET'YAKOV, V.G.; NIKIFOROV, S.R.

New data on the mineral potential of the Shubartobe zone in the Chingiz region. Trudy Inst.geol.nauk AN Kazakh.SSR no.4:90-94 '61. (MIRA 14:10)

(Chingiz-Tau—Ore deposits)

LUKICHEV, D.M., kandidat tekhnicheskikh nauk; NIKONOROV, V.A., inzhener;
RASPOPOV, A.G., inzhener.

The Moscow Technical College's roller station for testing locomotives. [Trudy] MVTU no.43:6-23 '55. (MIRA 9:8)
(Locomotives--Testing)

NIKONOROV, V.A., inzhener.

A study of the movement of gases in a locomotive boiler. [Trudy] MVTU no.43:93-99 '55. (MLRA 9:8)
(Locomotive boilers)

8(6)

SOV/112-59-2-2484

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 2, p 31 (USSR)

AUTHOR: Nikonorov, V. A.

TITLE: Aerodynamic Investigation of Small-Size Furnaces of Higher Thermal Loads (Aerodinamicheskoye issledovaniye malogabaritnykh topok povyshennogo teplovogo napryazheniya)

PERIODICAL: V sb.: Parotekhnika (MVTU, 81). M., Mashgiz, 1957, pp 87-116

ABSTRACT: It has been established that on air and hydraulic furnace models with combustion-surface loadings of 2-4 x 10^6 kilocal^3/m^{2}hr better vaulting of the furnace brings about better aerodynamics which, in turn, results in better fuel combustion and higher furnace gas resistance. The vault resistance obtained with model tests and expressed by the criterial relation $\xi_{sv} = 2 \xi_1$ adequately agrees with experimental data obtained from tests of steam-locomotive furnaces. This relation is presented in the form of a formula and nomogram.

B.I.L.

Card 1/1

SOV/124-57-4-4133

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 4, p 41 (USSR)

AUTHOR: Nikonorov, V. A.

TITLE: A Study of the Flow of Gases in a Locomotive Boiler (Izucheniye dvizheniya gaza v parovoznom kotle)

PERIODICAL: Sb. statey Mosk. vyssh. tekhn. uch-shcha, 1955, Vol 43, pp 93-99

ABSTRACT: The results of an experimental investigation of the flow of gases in a locomotive boiler are presented. The experiments were performed on a one-fifth scale L-series-locomotive model of a boiler constructed from organic glass. Smoke-filled air was injected into the model by means of a fan. The hydraulic resistance of the different sections of the boiler-ducting system was investigated. It was found that the gas flow over the surfaces of the furnace is distributed irregularly, forming an eddy region over the crown of the furnace which results in an increased hydraulic resistance of the furnace. The over-all hydraulic losses in the boiler total 400 kg/m^2. To obtain a clearer conception of the flow of the gases in the boiler, tests were likewise performed on a one-tenth-scale hydraulic model. The model was placed in a horizontal channel with colored running water. The investigations

Card 1/2

A Study of the Flow of Gases in a Locomotive Boiler SOV/124-57-4-4133

show that for locomotives of the L and the EM series the angle of slope of the crown should be taken in the 12 - 15° range instead of the present 25 - 30° range, and that the ratio of the horizontal projection of the length of the crown to the length of the grate should be 0.60 - 0.65.

Yu. A. Lashkov

Card 2/2

SAVELEVA, A.A., dotsent, kand.tekhn.nauk; LUKICHEV, D.M., dotsent, kand.tekhn.nauk; MUSATOV, A.K., starshiy prepodavatel'; NIKONOROV, V.A., kand.tekhn.nauk; RESHETOV, L.N., doktor tekhn.nauk, prof., red.

[Theory of mechanisms and machines; lecture course] Teoriia mekhanizmov i mashin; kurs lektsii. Moskva, Kafedra teorii mekhanizmov i mashin. No.3. ["Dynamicsof mechanisms and machines."] Razdel "Dinamika mekhanizmov i mashin." 1959. 101 p. (MIRA 14:7)

(Machinery, Kinematics of)

POPOV, S.A., kand. tekhn. nauk, dots.; LUKICHEV, D.M., kand. tekhn. nauk, dots.; SKVORTSOVA, N.A., kand. tekhn.nauk, dots.; NIKONOROV, V.A., kand. tekhn. nauk, dots.; MINUT, S.B., dots.; RESHETOV, L.N., doktor tekhn. nauk, prof.; NIKOLAYEVSKIY, Ye.V., assist.; MASTRYUKOVA, A.S., kand. tekhn. nauk;

[Theory of mechanisms] Teoriia mekhanizmov; kurs lektsii. [By] S.A.Popov i dr. Pod red. L.N.Reshetova. Moskva, No.5. 1962. 123 p. (MIRA 16:7)

1. Moscow. Moskovskoye vyssheye tekhnicheskoye uchilishche.
(Mechanisms)

RESHETOV, L.N., doktor tekhn. nauk, prof.; [illegible], kand. tekhn.
nauk, dotsent; GORINA, T.I., starshiy prepodavatel'

Forces in a reduced cam mechanism. Izv. vys. ucheb. zav.;
mashinostr. no.7:31-36 '65. (MIRA 18:12)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche imeni N.E.
Baumana. Submitted February 8, 1963.

L 43723-66 EWT(m)/EWP(k)/T/EWP(v)/EWP(t)/ETI IJP(c) JW/WJ/JD/HM/JD
ACC NR: AP6030421 (N) SOURCE CODE: UR/0193/66/000/007/0005/0006

AUTHOR: Gedovius, I. A.; Makhanev, V. I.; Nikonorov, V. I.; Kireyeva, G. I.

ORG: none

41
390

TITLE: Carbon dioxide-shielded arc welding of steel

SOURCE: Byulleten' tekhniko-ekonomicheskoy informatsii, no. 7, 1966, 5-6

TOPIC TAGS: carbon dioxide, arc welding, shielded arc welding, super-strength steel welding, super strength steel / 25Kh3SNMVFA steel

ABSTRACT: A method of carbon dioxide-shielded arc welding of 28Kh3SNMVFA super-strength steel sheets 2.8 mm thick has been developed and introduced in industry.
The method employs a welder equipped with a resistor which makes it
possible to adjust the current with an accuracy of ± 2.5 amp. To ensure
a satisfactory ductility and adequate strength of the welds, VL-1D
(TU582-61) electrode wire 2 mm in diameter is used. At a carbon
equivalent of 0.76—0.79 the steel requires no preheating, but at an
equivalent of 0.8—0.81, preheating to 100—150C is recommended. Sheets
should be butted as close as possible (the gap should not exceed 0.2 mm
on a maximum length of ..% of the total weld length) on Kh18N9T steel

Card 1/2

UDC: 621.791.753.9—52

Card 2/2 hs

L 46965-66 [illegible]

ACC NR: AT6024928 (A,N) SOURCE CODE: UR/2981/66/000/004/0187/0191
JD/HM/EM/JH

AUTHOR: Loktionova, N. A.; Ovchinnikov, Yu. F.; Nikonorov, Ye. A.; Zamolodchikova, V. N.; Lapina, L. V.; Perevoschikov, A. V.; Potapov, P.I.,

42

B+1

ORG: none

26 18 27

TITLE: Residual stresses in weld joints of aluminum alloys

SOURCE: Alyuminiyevyye splavy, no. 4, 1966. Zharoprochnyye i vysokoprochnyye splavy (Heat resistant and high-strength alloys), 187-191

TOPIC TAGS: tensile stress, compressive stress, aluminum alloy property, weld evaluation

18

ABSTRACT: The residual stresses in various parts of a welded structure of ATsM alloy were determined by a mechanical method, and the influence of the artificial aging and tempering of the weld joints on the magnitude of these stresses was investigated. It was found that longitudinal residual stresses up to 10-11 kg/mm^2 and compressive residual stresses up to 11-12 kg/mm^2 in the transverse direction arise in the zone of the weld joints. Artificial aging of the weld joints of ATsM alloy for 100 hr at 90° does not change the magnitude and character of the residual stresses in the heat-affected zone as compared to the residual stresses in the naturally aged state. Tempering of the zone of the weld joint by induction heating to 240-250°C for 4-5 min followed by cooling of the heat-affected zone with water increases the magnitude of the

Card 1/2

L 46965-66

ACC NR: AT6024928

longitudinal tensile residual stresses by 1.5-2 kg/mm^2, without changing the sign. At the same time, the transverse residual stresses change into compressive ones and reach 4 kg/mm^2. Orig. art. has: 2 formulas.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 003

Card 2/2 mt

L 01011-66 EWT(m)/EPF(c)/EWP(j)/T DJ/RM

ACCESSION NR: AP5019983 UR/0065/65/000/008/0019/0024 68
542.61.002.2
65 E

AUTHOR: Anosov, V. I.; Dintses, A. I.; Martynova, N. V.; Mullin, M. A.; Nikonorov, Ye. M.; Popova, L. A.; Savostin, A. P.; Chemodanova, Ye. S.

TITLE: Development of a continuous process for production of polyisobutylene 15 with molecular weights of 10,000 and 20,000

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 8, 1965, 19-24

TOPIC TAGS: isobutylene, polymerization, lubricant additive, fuel thickener

ABSTRACT: The objective of the study was to develop a continuous process for production of polyisobutylene with molecular weights of 10,000 (commercial oil additive P-10) and 20,000 (commercial oil additive P-20). These additives are used in manufacturing automotive, aviation, and some special purpose lubricating oils. Isobutylene is polymerized in an inert solvent (isobutane, pentane, and others) using $AlCl_3$ (in ethyl or methyl chloride) as a catalyst. Flow-sheet of the industrial scale polymerization unit is shown in fig. 1 of the Enclosure. The linear velocity of the reacting mixture through the reactor is 3-3.5 m/sec and the heat exchange

Card 1/3

L 01011-66

ACCESSION NR: AP5019983

3

area is 1 m^2 per 8 liters of reactor working volume. The optimum polymerization conditions are: 0.1-0.15 wt. % of $AlCl_3$ based on isobutylene, 35% isobutylene in the feedstock and 9 to 10°C below zero in the case of P-10 additive, and 25% isobutylene in the feedstock and 20°C below zero in the case of P-20 additive. In respect to molecular weight, more homogenous product is obtained from the continuously operating isobutylene polymerization reactor than from a batch-type reactor. Orig. art. has: 4 figures, 4 tables.

ASSOCIATION: VNII NP; Yefremovskiy zavod sinteticheskogo kauchuka (Yefremov Synthetic Rubber Plant)

SUBMITTED: 00 ENCL: 01 SUB CODE: GC, IE

NO REF SOV: 008 OTHER: 001

Card 2/3

L 01611-66

ACCESSION NR: AP5019983

ENCLOSURE: 01

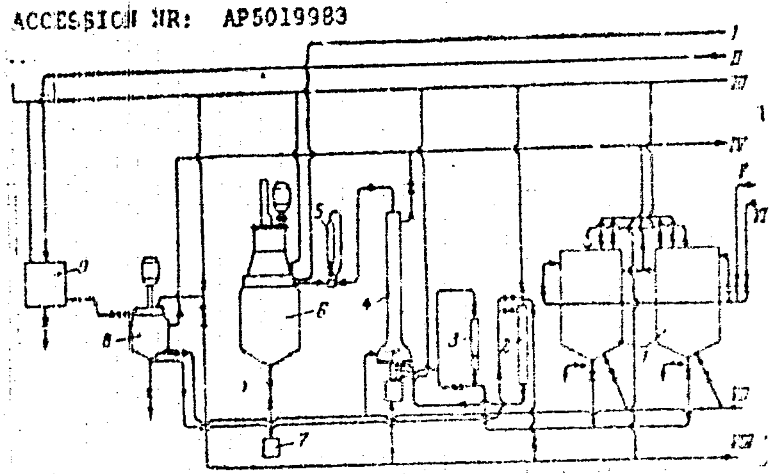


Fig. 1. I--vacuum line; II--ethyl chloride to the unit; III--air line; IV--gaseous ammonia from the unit; V--isobutylene to the unit; VI--isobutane to the unit; VII--liquid ammonia to the unit; VIII--nitrogen from the cylinders; 1--ammonia-cooled reservoirs containing isobutylene-isobutane mixture; 2--metering tank with catalyst solution; 3--rotameter on the feed line; 4--polymerization reactor, mixing by bubbling nitrogen through the solution at minus 25-35°C; 5--metering tank with ethyl alcohol (for deactivating catalyst present in the product); 6--gas separator (two in a unit) where gases are removed during 1-2 hour heating at 100-120°C under agitation; 7--polyisobutylene product drain; 8--catalyst make-up vessel, ethyl chloride and $AlCl_3$ mixed for 1 hr at 15-20°C; 9--catalyst container.

Card 3/3 dp

ACC NR: AP7002728 (A,N) SOURCE CODE: UR/0065/67/000/001/0045/0048

AUTHOR: Fialko, M. M.; Nikonorov, Ye. M.

ORG: VNII NP

TITLE: Effect of additives on thermal-oxidative stability of dibutylphenylphosphate

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 1, 1967, 45-48

TOPIC TAGS: antioxidant additive, corrosion inhibitor, ~~corrosion,~~ amine, alkylphenol, hydraulic fluid, dibutylphenyl phosphate, phenyl compound, phosphate, thermal oxidation, aircraft engine

ABSTRACT: The effect of certain antioxidant and other additives on the thermal-oxidative stability and corrosiveness of dibutyl phenyl phosphate had been investigated with regard to the latter's use as a base for fireproof aircraft hydraulic fluid. The sample investigated contained about 15% tributylphosphate; the acid number of the liquid was 0.1. Aromatic amines and alkylphenoles were used as oxidation inhibitors. The former reduced the acidity of dibutylphenyl phosphate four to five times. In the presence of copper, however, the inhibitive properties of these antioxidants were completely reversed and the corrosiveness

Card 1/2 UDC: 665.521.5:546.185

of dibutylphenyl phosphate increased. Xanthogenates without disulfide groups on the other hand were shown to reduce corrosiveness. This effect is explained by the formation of a protective sulfide film on the copper surface. In turn, this film precludes the use of xanthogenates in hydraulic systems of aircraft. Orig. art. has: 2 figures and 3 tables. [KP]

SUB CODE: 11/SUBM DATE: none/ORIG REF: 001/OTH REF: 007/

J

NIKONOROVA, A. I.

Effect of deformation on the kinetics of martensitic transformation. O. P. Maksimova and A. I. Nikonorova. *Doklady Akad. Nauk S.S.S.R.* 81, 183-6(1951).—In a series of Ni and Mn steels, of low martensitic point t_M, the amt. of austenite converted to martensite at low temps. down to −200° increased with the degree ψ of plastic compression of the specimen as long as ψ remained small, e.g., in a steel C 0.6, Ni 23 %, t_M = −90°, the conversion increased with ψ up to about ψ = 15%, then decreased with further increasing ψ. The curve of amt. of martensite formed as a function of ψ thus passes, at each temp. [illegible] −125, −180, −196°) through a max. where the stability of the austenite is min. This max. lies in a range of deformations that do not yet cause transformation under [illegible]. The max. is more pronounced at relatively higher temps., closer to t_M. The ψ corresponding to the max. is higher, the lower is t_M of the steel. Thus, in steels C 0.5, Ni 24 [illegible] C 1.0, Mn 2.7%; C 0.6, Ni 17.6%, with t_M = [illegible] resp., the max. was found at ψ = 15 [illegible] resp. In the steel with t_M = 90°, [illegible] (to about −[illegible] [illegible]

NIKONOROVA, A. I.

NIKONOROVA, A. I.: "The effect of plastic deformation on the transformation of austenite into martensite". Moscow, 1955. Min Higher Education USSR. Moscow Order of Labor Red Banner Inst of Steel Imeni I. V. Stalin. (Dissertation for the Degree of Candidate of TECHNICAL Sciences)

SO: Knizhnaya Letopis' No. 51, 10 December 1955

NIKONOROVA, A.I.

MAKSIMOVA, O.P., kand.tekhn.nauk; NIKONOROVA, A.I.

Microstructural investigation of martensite transformation. Probl. metalloved. i fiz. met. no.4:123-143 '55. (MIRA 11:4)
(Steel alloys--metallography) (Martensite)

Nikonorova, A.I.

MAKSIMOVA, O.P., kand.tekhn.nauk; NIKONOROVA, A.I.; POGORELOV, G.K.

Effect of deformation on the rate of isothermal martensite transformation in iron-nickel-manganese alloys. Probl. metalloved. i fiz. met. no.4:144-164 '55. (MIRA 11:4)

(Deformations (Mechanics))
(Iron-nickel-manganese alloys--Metallography)

[illegible] ROVA

[illegible]

NIKONOROVA, A. I.

MAKSIMOVA, O.P., kand.tekhn.nauk; NIKONOROVA, A.I.; POGORELOV, G.K.

Effect of hot plastic deformation on the kinetics of martensite transformation in high nickel alloy steels. Probl. metalloved. i fiz. met. no.4:198-204 '55. (MIRA 11:4)

(Nickel steel--Metallography) (Deformations (Mechanics)) (Martensite)

20-114-4-25/63

AUTHORS: Kurdyumov, G. V., Member of the Academy,
Maksimova, O. P., Nikonorova, A. I.

TITLE: The Activating Influence of Plastic Deformation on Martensite Transformation (Ob aktivisiruyushchem vliyanii plasticheskoy deformatsii na martensitnoye prevrashcheniye)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 4, pp. 768-771 (USSR)

ABSTRACT: The present paper is intended, among other things to confirm the opinions on the influence exercised by stresses on the activation of the transformation. The authors investigated the rules of the restoration of the original stability of austenite on the occasion of annealing at gradually increasing temperature. The change of the stability of the austenite resulting from a plastic deformation or from the following annealing was judged by the strength of the magnetometric effects in the temperature domain below room temperature on the occasion of the transformation of austenite into martensite. It was assumed that the activating influence exercised by the deformation can easily be determined in such alloys which possess sufficiently marked elastic properties. The authors

Card 1/3

The Activating Influence of Plastic Deformation on Martensite Transformation 20 114-4-25/63

therefore selected iron-chromium-nickel alloys for the investigations. The composition of the alloys used is given. In the case of both alloys the resistance of the austenite changes inhomogeneously with an increasing degree of deformation. The following was observed at increasing pressure: At first an increase of the intensity of martensite transformation compared to the non-deformed state took place, then the activating influence exercised by deformation became weaker and above a certain pressure the martensite transformation was slowed down. Such a character of the modification of the resistance was observed at 20°, 100°, and 175°C. A deformation of 5% increasesthe martensite point as well as the amount of martensite considerably. After a deformation by 7,4% the total amount of martensite increases to 20%, and with a further deformation the transformation effects become weaker. After a deformation of 14,7% the effects are already weaker than in the initial state. When annealing at temperatures of up to 400° the resistance of the deformed austenite increasesbut when annealing beyond 400° the resistance decreases. The activation influence exercised by the deformation seems to be subjected to the occurrence of

Card 2/3

SOV/137-58-8-17575

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 8, p 210 (USSR)

AUTHORS: Kurdyumov, G. V., Maksimova, O. P., Nikonorova, A. I., Pavlenko, Z. D., Yampol'skiy, A. M.

TITLE: The Effect of Preliminary Plastic Deformation on Martensite Transformation in Fe-Cr-Ni Alloys (Vliyaniye predvaritel'noy plasticheskoy deformatsii na martensitnoye prevrashcheniye v splavakh Fe-Cr-Ni)

PERIODICAL: Sb. tr. In-t metalloved. i fiz. metallov Tsentr. n.-i. in-ta chernoy metallurgii, 1958, Vol 5, pp 41-55

ABSTRACT: Investigations were performed in order to evaluate the effect of plastic deformation (PD) and subsequent heating on processes of martensite transformation (MT) during cooling, and on isothermal MT in an alloy composed of Kh18N8 (0.03% C, 18.10% Cr, and 8.1% Ni) and Kh17N9 (0.05% C, 17.25% Cr, and 9.16% Ni). The PD was effected by compression of specimens in a press at room temperature, as well as at temperatures of 100 and 175°C. Changes in the ability of austenite (A) to undergo transformations were evaluated by means of a thermomagnetic method involving plotting of martensite cooling curves during

Card 1/3

SOV/137-58-8-17675

The Effect of Preliminary Plastic Deformation (cont.)

cooling of the material to -196° followed by heating to a temperature of 20° at a rate of 10°/min. The summary transformation effect obtained as a result of the cooling and heating processes was taken as a criterion of stability of A. After deformation and annealing, the crystalline substructure of the A was characterized by the width of X-ray interference lines. It is established that, depending on the conditions of PD and annealing procedures, the PD may have an activating or a retarding effect on the MT. A small degree of PD extends the temperature range of the MT, increases the initial rate of isothermal transformation, and increases the over-all quantity of martensite. As the degree of PD and the temperature at which it is accomplished are increased, the PD begins to exert a retarding influence on the ability of A to undergo MT. Annealing of metal in the temperature range between 100° and 400° eliminates the activating effect of a preceding PD without destroying its retarding effect. At PD of a high degree, annealing at temperatures of 100-400° results in an additional improvement of the stability of A. The activation of the MT is affected by stresses which arise during PD; these stresses are restricted to small volumes and are different from stresses of type II, which are determined by the blurring of the interference lines. The retarding action of PD is affected by the breaking up of the zones of coherent dispersion of X-rays, an effect which hampers the formation of martensite nuclei. The activating and retarding

Card 2/3