"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULINA, K.K.

4

phenone and water-ethanol triphenylcarbinol.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

MINTS, A.G.; KHAYRULINA, Ye.N.

Organizing pond fish farming in peat banks. Trudy sov. Ikht. kom. no.14:107-112 '62. (MIRA 15:12)

1. Vserossiyskiy nauchno-issledovatel'skiy institut prudovogo rybnogo khozyaystva (VNIPRKh).
(Fishponds)
(Fish culture)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULLIN, A. (Ufa); SAMIGULLIN, A. (Ufa)

Comprehensive analysis of the economics of the petroleum industry.
Vop. ekon. no.9:123-126 S '63. (MIRA 16:9)
(Petroleum industry)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULLIN, A.Kh.; LUZIN, V.I.; SAMIGULLIN, A.S.

Compensation for expenditures on geological prospecting.
Geol. nefti i gaza 6 no.2:23-27 F '62. (MIRA 15:2)

1. Bashkirskiy filial AN SSSR.
(Petroleum industry--Accounting)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULLIN, A.Kh.; ALALYKINA, L.A.

Calculating the cost of the production of liquefied gases.
Gaz. delo no.10:25-27 '65. (MIRA 18:12)

1. Ufimskiy otdel ekonomicheskikh issledovaniy AN SSSR.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULLIN, A.Kh.; SAMIGULLIN, A.S.

Certain problems in the determination of the effectiveness of capital investments in prospecting for oil and gas. Izv. vys. ucheb. zav.; neft' i gaz 7 no.9:113-115 '64.

(MIRA 17:12)

1. Ufimskiy otdel ekonomicheskikh issledovaniy AN SSSR.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

GRAMM, M.N.; KHAYRULLIN, B.G.

Composition of Apsheron Ostracoda from the Sarykamysh Depression. Uzb.geol.zhur. no.2:89-91 '58. (MIRA 12:2)

1. Institut geologii AN UzSSR i Uzbekskoye geologicheskoye upravleniye.
(Sarykamysh Depression--Ostracoda, Fossil)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULLIN, F.Z., aspirant

Analyzing the mixing process in asphalt mixers and increasing the durability of mixer blades. Izv. vys. uchsb. zav.; mashinostr. no.9:180-193 '58. (MIRA 12:10)

1.Moskovskiy inzhenerno-stroitel'nyy institut im. V.V. Kuybysheva.
(Concrete mixers) (Asphalt concrete)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULLIN, F.Z.

Investigating mixing drums of intermittent asphalt mixers. Stroi. i dor.mashinostroi. 4 no.3:24-30 Mr '59. (MIRA 12:4)
(Mixing machinery)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

LEONT'YEV, Leonid Pavlovich. Prinimali uchastiye: KHAYRULLIN, G.G.; MUTSENEK, K.Ya., kand. tekhn.nauk, retsenzent; SAVEL'YEVA, Ye., red.; BOKMANIS, R., tekhn. red.

[Introduction to the theory of reliability of radioelectronic apparatus] Vvedenie v teoriiu nadezhnosti radioelektronnoi apparatury. Riga, Izd-vo AN Latviiskoi SSR, 1963. 186 p. (MIRA 16:10)

(Radio--Equipment and supplies)
(Electronic apparatus and appliances)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

L 8524-66

ACC NR: AT5027523 SOURCE CODE: UR/2690/65/008/000/0123/0130

AUTHOR: Khayrullin, G.G.; Prokhorov, A.N.

ORG: Institute of Electronics and Computer Technology AN LatSSR, Riga (Institut elektroniki i vychislitel'noy tekhniki AN LatSSR)

TITLE: Protection, control, and failure indication on semiconductor unit reliability testing stands

SOURCE: AN LatSSR. Institut elektroniki i vychislitel'noy tekhniki. Trudy, v. 8, 1965. Avtomatika i vychislitel'naya tekhnika, 123-130

TOPIC TAGS: test stand, semiconductor device, circuit reliability, reliability engineering

ABSTRACT: Complex circuit malfunctioning is usually caused by the failure of one of the circuit components. Component failures are most often caused by short circuits or breaks. The article discusses the consequences of such failures and presents specific circuits for the protection, control, and failure indication on semiconductor unit reliability testing stand. [illegible] incorporates 1) a short circuit protection and indication circuit, 2) a power supply [illegible] protection circuit, 3) a maximum voltage [illegible] current and [illegible] circuit, and 5) a pulse generator malfunction indicator. A design for the overall protection of the entire testing stand is also presented. Orig. art. has 1 formula and figures.

SUB CODE: EC,IE / SUBM DATE: none / ORIG REF: 004

Card 1/1 UDC: 621.316.925:621.382.019.34

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

ACCESSION NR: AT4035937 S/2690/63/005/000/0015/0024

AUTHOR: Khayrullin, G. G.

TITLE: Highly stable transistorized circuits for the measurement of the collector junction capacitance C_c and the collector-base-circuit time constant $r_b C_c$ of transistors

SOURCE: AN LatSSR. Institut elektroniki i vy*chislitel'noy tekhniki. Trudy*, v. 5, 1963. Avtomatizatsiya izmereniy parametrov poluprovodnikovy*kh priborov (Automation of measuring of semiconductor instrument parameters), no. 1, 15-24

TOPIC TAGS: transistorized circuit, transistor base model, collector, circuit theory

ABSTRACT: The simplest equivalent circuit of a transistor is considered, along with the dependence of the parameters of this circuit

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

ACCESSION NR: AT4035937

on the frequency and on the amplitude of the supply voltages. It is pointed out that even a simple equivalent circuit is valid only under certain conditions, and if it is used certain features of the processes occurring in transistors must be taken into account. By using this equivalent circuit it is concluded that an alternating voltage of increased amplitude can be used to measure some high-frequency parameters of the equivalent circuit of transistors, so that the measuring circuits can be simplified and constructed with semiconductor devices. Methods of measuring C_c and $r_b C_c$ are described and ways of increasing the stability of transistorized measurement circuits are proposed. It is pointed out that the apparatus described, which is fully transistorized, is small, economic, and reliable in operation, thus preferable to test apparatus in which large standard signal generators, amplifiers, and other complicated instruments are used. Orig. art. has: 8 figures.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

ACCESSION NR: AT4035937

ASSOCIATION: None

SUBMITTED: 00 DATE ACQ: 28May64 ENCL: 02

SUB CODE: EC NR REF SOV: 004 OTHER: 000

Card 3/5

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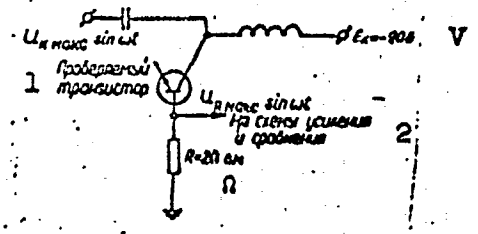
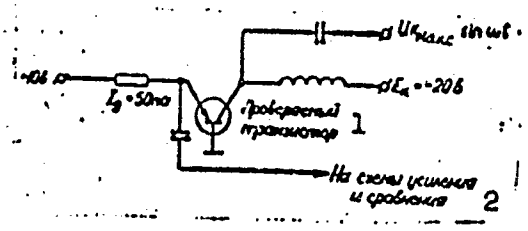
"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

ACCESSION NR: AT4035937 ENCLOSURE: 01





Measurement circuits for the collector-junction capacitance C_c (left) and the collector-base circuit time constant $r_b C_c$ of transistors. 1) Tested transistor. 2) To amplification and comparison circuits.

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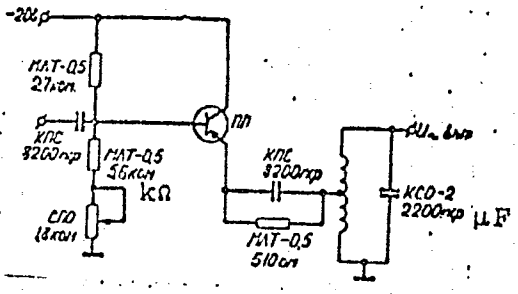
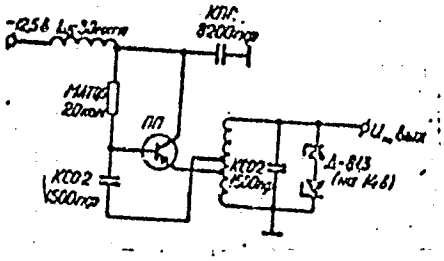
ACCESSION NR: AT4035937

ENCLOSURE: 02





Highly stabilized transistorized amplifier (left) and high-frequency oscillator with stabilized amplitude (right).

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

L 31792-66 EWT(d)/T IJP(c)

ACC NR: AP6021642 SOURCE CODE: UR/0140/65/000/006/0147/0149

AUTHOR: Khayrullin, G. T.

ORG: none

19
13

TITLE: Fibonacci numbers with primes

SOURCE: IVUZ. Matematika, no. 6, 1965, 147-149

TOPIC TAGS: number, number theory, integer

ABSTRACT: Not all Fibonacci numbers with primes are prime. In this connection the article examines the general type of these numbers and their prime divisors. Five theorems are stated: Theorem 1. If $p = 5k \pm 1$, then $a_p \equiv 1 \pmod p$; if $p = 5k \pm 2$, then $a_p \equiv -1 \pmod p$. Theorem 2. If $p = 5K \pm 1$, then $p | a_{p-1}$; if $p = 5k \pm 2$, then $p | a_{p+1}$. Theorem 3. a) if p has the form $p = 20k \pm 1$, then a_p has the form $a_p = 10A_p + 1$; b) if $p = 20k + 3$, then $a_p = 10A_p - 4p - 1$; c) if $p = 20k + 7$, then $a_p = 10A_p + 2p - 1$; d) if $p = 20k + 9$, then $a_p = 10Ap + 2p + 1$; e) if $p = 20k + 11$, then $a_p = 10Ap - 2p + 1$; f) if $p = 20k + 13$, then $a_p = 10Ap - 2p - 1$; g) if $p = 20k + 17$, then $a_p = 10Ap + 4p - 1$. Theorem 4. If p is a proper di-

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L 31792-66

ACC NR: AP6021642

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013

visor of the number a_n and $p | a_i$, then $a_n | a_i$. Theorem 5. Any prime divisor of the number a_p is a proper divisor. The notation employed is: A, b, c, i, k, n are positive integers; $b | c$ — b divides c; p, q are odd primes. [JPRS]

SUB CODE: 12 / SUBM DATE: 07Oct64 / ORIG REF: 002 / OTH REF: 001

Card 2/2

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

16(1)

AUTHOR: Khayrullin, I.Kh. SOV/20-123-5-7/59

TITLE: On Some Infinite Systems of Linear Algebraic Equations Solvable in a Closed Form (O nekotorykh beskonechnykh sistemakh lineynykh algebraicheskikh uravneniy, razreshayemykh v zamkn[illegible]oy forme)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 5, pp 795-798 (USSR)

ABSTRACT: In the present paper, written under the leading of Professor F.D.Gakhov, the author considers the systems

$$x_n + \sum_{k=-\infty}^{\infty} a_{n-k} x_k = d_n \qquad (n < 0)$$

$$(1) \qquad x_n + \sum_{k=-\infty}^{\infty} b_{n,k} x_k = d_n \qquad (0 \leq n \leq p-1)$$

$$x_n + \sum_{k=-\infty}^{\infty} c_{n-k} x_k = d_n \qquad (p \leq n)$$

$$(2) \qquad x_n + \sum_{k=-\infty}^{\infty} \left[1 + e^{2k\pi i/m} + \ldots + e^{2(m-1)k\pi i/m}\right] a_{n-k} x_k = d_n \qquad (n < 0)$$

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

On Some Infinite Systems of Linear Algebraic Equations Solvable in a Closed Form SOV/20-123-5-7/50

$$x_n + \sum_{k=-\infty}^{\infty} \left[1+e^{2k\pi i/m}+\ldots+e^{2(m-1)k\pi i/m}\right] c_{n-k}x_k = d_n \quad (0 \leq n).$$

The author uses the analogy with integral equations of the type of convolution as well as with integral equations the kernels of which remain invariant for certain broken linear transformations. By application of Laurent-transformations the problem is reduced to a boundary value problem of the Riemannian type. The author enumerates some further systems solvable with the same method. There are 11 references, 9 of which are Soviet, 1 German, and 1 English.

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

PRESENTED: July 15, 1958, by P.Ya.Kochina, Academician

SUBMITTED: July 15, 1958

Card 2/2

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULLIN, I.Kh., assistent

Regularization of "triple" integral equations of the convolution type. Trudy RIIZHT no.28:100-113 '59. (MIRA 16:7)

(Integral equations)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULLIN, I.Kh.

Infinite systems of algebraic equations with quasi-difference indexes. Trudy RIIZHT n.o.28:203-234 '59. (MIRA 16:7)

(Linear equations

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULLIN, I. Kh. Cand Phys-Math Sci -- (diss) "Infinite systems of linear algebraic equations with difference indexes." Rostov-on-Don, 1959. 7 pp (Rostov-on-Don State Univ), 150 copies. Bibliography at end of text (18 titles) (KL, 45-59, 143)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULLIN, I.Kh.

Certain infinite systems of algebraic equations. Nauch. dokl.vys.shkoly; fiz.-mat.nauki no.1:81-87 '59. (MIRA 13:1)

1. Rostovskiy-na-Donu institut inzhenerov zheleznodorozhnogo transporta.
(Equations, Simultaneous)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

26509
S/044/61/000/004/023/033
C111/C222

16.4500

AUTHOR: Khayrullin, I.Kh.

TITLE: Regularization of "three-fold" integral equations of the type of convolution

PERIODICAL: Referativnyy zhurnal. Matematika, no. 4, 1961, 69, abstract 4 B 368. ("Tr. Rostovsk.-n/D in-ta inzh. zh.-d. transp." 1959, vyp 28, 100-113)

TEXT: For the singular equation

$$Mf = f(x) + \int_{-\infty}^{0} k_1(x-t)f(t)dt + \int_{0}^{a} k_2(x-t)f(t)dt + \int_{a}^{\infty} k_3(x-t)f(t)dt + \int_{-\infty}^{\infty} n(x,t)f(t)dt = g(x) \quad ; \quad f,g \in L_2(-\infty, \infty)$$

the author constructs a regularizing operator M^* (i.e. $M^* Mf = M^* g$ is a Fredholm equation). It is assumed that

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26509

Regularization of "three-fold" S/044/61/000/004/023/033
C111/C222

$n(x,t) \in L_2(-\infty < x, t < \infty)$, $k_i(x) \in L(-\infty, \infty)$, $k_i(x)\sqrt{x+1} \in L_2(-\infty, \infty)$.

A regularizing operator is also constructed for the transposed equation.

[Abstracter's note: Complete translation.]

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

39886
S/044/62/000/007/033/100
C111/C222

16.1500

AUTHOR: Khayrullin, I.Kh.

TITLE: Infinite systems of linear equations with difference indices

PERIODICAL: Referativnyy zhurnal, Matematika, no. 7, 1960, 60-61, abstract 7B288. ("Tr. Vses. soveshchaniya po differentsial'n. uravneniyam, 1958". Yerevan, AN Arm SSR, 1960, 179-185)

TEXT: The author investigates infinite systems of linear algebraic equations of the following kind :

a)

$$x_n = \sum_{k=-\infty}^{\infty} a_{n-k}x_k + \sum_{k=1}^{p-1} b_{n,k}x_k + \sum_{k=0}^{\infty} c_{n-k}x_k = d_n$$

$$(n = \ldots, -2, -1, q, q+1, \ldots),$$

$$x_n + \sum_{k=-\infty}^{\infty} b_{n,k}x_k = d_n \quad (n = 0, 1, \ldots, q-1).$$

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where $\{a_n\} \in \{\alpha_1, \beta_1\}_1$, $\{c_n\} \in \{\alpha_2, \beta_2\}_1$, $\{b_{n,k}\}_{n=-\infty}^{\infty} \in \{\min(\alpha_1, \alpha_2), \max(\beta_1, \beta_2)\}_2$, $(k = 0,1,\ldots,p-1)$

$$\{b_{n,k}\}_{k=-\infty}^{\infty} \in \left\{\frac{1}{\beta_1}, \frac{1}{\alpha_2}\right\}$$

$(n = 0,1,\ldots,p-1)$, $\{d_n\} \in \{\min(\alpha_1, \alpha_2), \max(\beta_1, \beta_2)\}_2$, $\alpha_j < \beta_j$, $j = 1,2$. The symbol $\{a_n\} \in \{\alpha, \beta\}_p$ means that

$$\sum_{n=-1}^{-\infty} |a_n \alpha^n|^p < \infty \quad \sum_{n=0}^{\infty} |a_n \beta^n|^p < \infty$$

The solution is sought in the class $\{\beta_1, \alpha_2\}$. For the given and the sought sequences the following mapping is introduced : to the original a_n there corresponds the image $A(\xi)$, if

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$$A(\zeta) = \sum_{n=-\infty}^{\infty} a_n \zeta^n .$$

After the passage to the images the given system is transformed into a Riemann boundary value problem with a complicated boundary and some additional conditions. The unknowns x_n are determined from the series expansions of the functions obtained for the solution of the Riemann problem.

b)

$$6)\ x_n + \sum_{k=-\infty}^{\infty} a_{n-mk} x_{mk} = d_n \quad (n = \ldots, -2, -1),$$

$$x_n + \sum_{k=-\infty}^{\infty} b_{n,k} x_k = d_n \quad (n = 0, 1, \ldots, q-1),$$

$$x_n + \sum_{k=-\infty}^{\infty} c_{n-mk} x_{mk} = d_n \quad (n = q, q+1, \ldots),$$

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

where $|a_n| < \frac{M}{|n|^{\lambda+1}}$, $|c_n| < \frac{M}{|n|^{\lambda+1}}$ $(0 < \lambda < 1, M = \text{const})$, m -- integer,

$\{b_{n,k}\}_{k=-\infty}^{\infty} \in l_2$ $(n = 0,1,\ldots, c-1)$, $\{d_n\} \in l_2$, $x_n \in l_2$.

After a passage to the images the given infinite system is transformed into a Riemann boundary value problem for automorphic functions (with respect to the substitutions of the rotation group), where the unknowns $X^+(z)$ and $X^-(z)$ are the images of the sought sequences

$$\{x_n\} \quad (n = 0,1,\ldots) \quad \text{and} \quad \{x_n\} \quad (n = -1,-2,\ldots) .$$

After the solution of the boundary value problem the unknowns are determined just as in case a).

[Abstracter's note : Complete translation.]

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

NR: AR5004796 /B054/B054

Ref. zh. Matematika, Abs. 1.B.

AUTHORS: Nikolenko, V. N.; Khayrullin, [illegible]

TITLE: Concerning one problem for equations of the hyperbolic type

SOURCE: Sb. Funktsional'n. [illegible] No. 1. [illegible]ansk. un-t, 1963, 72-[illegible]

[illegible] differential equation, [illegible] uniqueness [illegible]istence theorem

[illegible] A solution is sought f[illegible]

$$[illegible] = yu_{yy} - u_{xx} + a[illegible] + bu_y + [illegible] \quad (1$$

[illegible] bounded by the characteristics

1/2

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

NR: AR5004796

$$\xi_0 = x + 2\sqrt{y}\ \eta_0 = \ldots$$

segment of the axis Ox, satisfying the conditions

$$u(x, 0) = \ldots$$

$$\lim_{y \to 0} y^{\beta(x)} \ldots$$

where $\beta(x) = \lim_{y \to 0} b(x)$.

Under certain conditions imposed ... coefficients of existence and uniqueness is proved for the solution of the ... in an ε-strip about the line of degeneracy of the ...ation (1). Knowing the solution on any line in the ε-solution in the domain D can be obtained by usual method, ... of the Cauchy problem. (From the Introduction.)

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GAKHOV, Fedor Dmitriyevich; ROGOZHIN, V.S., dots., red.; BACHURINA, T.A., aspirant, red.; GOVORUKHINA, A.A., aspirant, red.; ZARIPOV, R.Kh., aspirant, red.; MEL'NIK, I.M., aspirant, red.; MIKHAYLOV, L.G., aspirant, red.; LITVINCHUK, G.S., aspirant, red.; PARADOKSOVA, I.A., aspirant, red.; KHASABOV, E.G., aspirant, red.; CHERSKIY, Yu.I., aspirant, red.; YANOVSKIY, S.V., aspirant, red.; ARAMANOVICH, I.G., red.; Prinimali uchastiye: BOKOVSKAYA, N.I., red.; RYSYUK, N.A., red.; SMAGINA, V.I., red.; KHAYRULLIN, I.Kh., red.; CHUMAKOV, F.V., red.; POLOVINKIN, S.M., red.; KEPPEN, I.V., red.; MIKHLIN, E.I., tekhn. red.

[Bondary value problems]Kraevye zadachi. Izd.2., perer. i dop. Moskva, Fizmatgiz, 1963. 639 p. (MIRA 16:3)
(Boundary value problems)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

GRIGOR'YEV, L. N.; KHAYRULLIN, I. Kh. ; USMANOV, A. G.

"Experimental investigation of critical heat flows with boiling binary mixture."

paper submitted for 2nd All-Union Conf on Heat & Mass Transfer, Minsk, 4-12 May 1964.

Chemical-Technical Inst, Kazan'.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

ACC NR: AP036861 SOURCE CODE: UR/0147/66/000/004/0096/0106

AUTHOR: Lokay, V. I., Khayrullin, R. G.

ORG: none

TITLE: On the selection of basic parameters and calculation of specific characteristics of cooled aviation engines

SOURCE: IVUZ. Aviatsionnaya tekhnika, no.4, 1966,96-106

TOPIC TAGS: turbojet engine, turboprop engine, engine performance CHARACTERISTIC, cooled aviation engine, turbojet specific thrust, specific fuel consumption, COOLING

ABSTRACT: The adverse effect of engine cooling, e.g., associated hydraulic and thermodynamic losses, was analyzed for turboprop and turbojet engines. The calculated performance characteristics of cooled and uncooled turbojet engines at both startup and flight regimes are shown in Figs.1 and 2. The derived formulas can be used for determining optimal compression ratios for cooled engines and are recommended for comparative analysis of engine performance.

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ACC NR: AP6036861

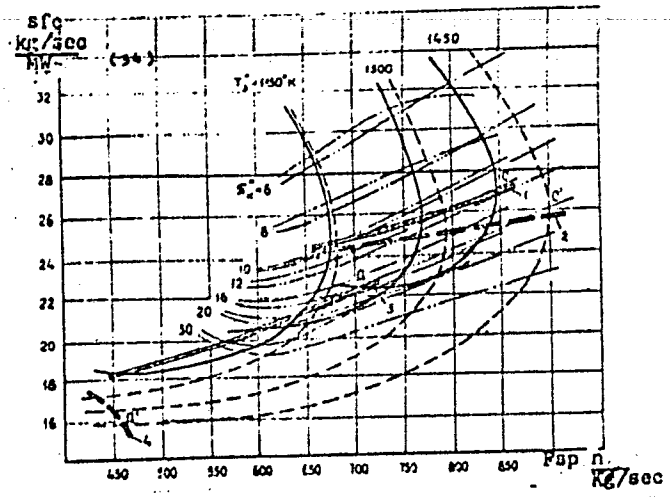

Fig.1. Effect of cooling losses on turbojet engine performance characteristics at sea level during startup. 1 and 3- optimal compression ratios (π_k) resulting in maximal specific thrust (Fsp) minimal specific fuel consumption (sfc) (cooled engine); 2 and 4-uncooled engine; H=0; V=0.

Card 2/3

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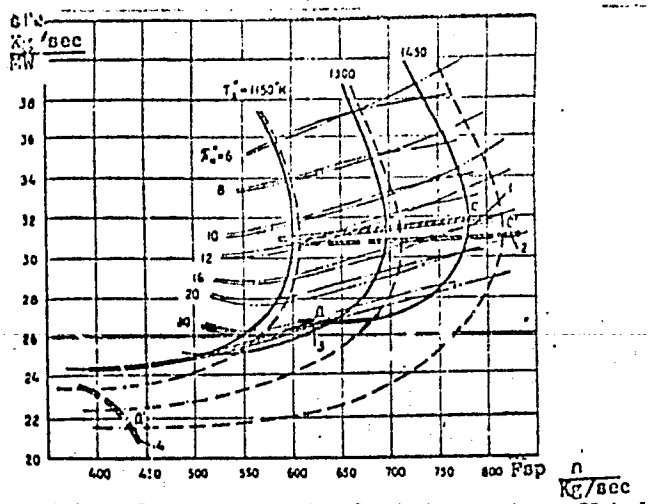

Fig.2. Effect of cooling losses on turbojet engine flight performanc characteristics. 1 and 3-optimal compression ratios (π_k) resulting in maximal specific thrust (Fsp) and minimal specific fuel consumption (sfc) (cooled engine); 2 and 4-uncooled engine.

Orig.art.has: 4 figures and 25 formulas. [WA-76]

SUB CODE: 21/ DATE SUBM: 16Oct65/ ORIG REF: 009

Card 3/3

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

L 50500-55

[illegible] 12098

AUTHOR: Lokay, V. I.; Kosyrullin, R. G.

TITLE: Additional energy losses in cooled gas-turbine installations and their effect on [illegible] of the cycle

[illegible] tekhnik [illegible]

[illegible] gas turbine [illegible] turbojet engine

[illegible] is introduced [illegible] not found in the [illegible] the basic types of losses [illegible] losses which are the result [illegible] section, in comparison with [illegible] boundary layer of the working [illegible] if the geometry of the cooled [illegible] between high operating efficiency [illegible] hydraulic losses can be [illegible] the article are the additional [illegible] losses

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

ZHUVAGIN, I.G.; AKCHAS'YANOV, Yu.A.; KHAYRULLIN, R.V.

Possibility of using ion exchange resins as carriers of radioactive isotopes. Razved.i prom.geofiz. no.45:115-117 '62. (MIRA 15:11)

(Ion exchange resins)
(Radioisotopes—Industrial applications)
(Oil wells—Hydraulic fracturing)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULLIN, Sh. Sh.

KHAIRULLIN, Sh. Sh. "Control of 'Zakuklivania' of Cats and Barley in Eastern Transbaikal," in Virus Diseases of Plants and Measures for Their Control, Works of the Conference on Virus Diseases of Plants 1940, Publishing House of the Academy of Science USSR, Moscow, 1941, pp. 140-144. 464.32 So8

So: Sira Si - 1953, 15 December 1953

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULLIN, Sh., Geroy Sotsialisticheskogo Truda

New developments in the construction of livestock buildings.
Sel'. stroi. no.7:14-15 '62. (MIRA 15:8)

1. Direktor Orenburgskogo nauchno-issledovatel'skogo instituta molochno-myasnogo skotovodstva.
(Farm buildings)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULLIN, V.K.; SOBCHUK, T.I.

Preparation and isomerization of mixed esters of 1-chloro-3-(β-chloroethoxy)isopropylphosphorous acid. Izv.AN SSSR.Otd.khim.n uk no.2:320-328 F '63. (MIRA 16:4)

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

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

EWT(m)/EWP(c)/EWP(j) RM

AP5027688 SOURCE CODE UR/0062/65/000/010/1792/1798

[illegible] V. K.

[illegible] phosphorous [illegible]

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

L 7049-66

ACC NR: AP5027688

3

cols and phenols to yield I, the corresponding mixed esters of phenylphosphonous

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

YELISEYENKOV, V.N.; KHAYRULLIN, V.K.

Preparation and rearrangement of mixed esters of tert.(1,1,1-trichloro)amyl-2-phosphorous acid. Izv. AN SSSR. Ser. Khim. no.12:2128-2132 '65. (MIRA 18:12)

1. Institut organicheskoy khimii AN SSSR, Kazan'. Submitted July 22, 1963.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KURYLEVA, M.A.; KRAYRULLIN, V.K.

Preparation and rearrangement of mixed alkyl-tert-(1,1,1-trichloro) butyl esters of phenylphosphinic acid. Izv.AN SSSR.Ser.khim. no.12:2133-2136 '65. (MIRA 18:12)

1. Institut organicheskoy khimii AN SSSR, Kazan'. Submitted July 22, 1963.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

L 27601-66 EWP(j)/EWT(1)/EWT(m) RM/RO

[illegible] 0827/0828

[illegible]ayrullin, V. K.

[illegible]stitute of Organic Chemistry, AN [illegible], Kazan [illegible] khimii

[illegible] of ethyldichlorophosphine [illegible]

[illegible] Doklady, v. 162, no. [illegible]

[illegible]: chemical reaction, organic phosphorous compound, ester, phosgene

This paper deals with the [illegible] ethyldichlorophosphines and acrylic and methacrylic acids. The reaction between equimolecular amounts of ethyldichlorophosphine [illegible] acrylic or methacrylic acid is exothermal. Phenyldichloro- [illegible] reacts with acrylic [illegible]

[illegible] decomposition with [illegible]

[illegible] table. [illegible]

[illegible] DATE: 14Nov64 [illegible]

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

ACC NR: AP6022798 SOURCE CODE: UR/0079/66/036/002/0289/0296

AUTHOR: Khayrullin, V. K.; Shagidullin, R. R.

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

TITLE: Reaction of chlorides of trivalent phosphorus acids with conjugated systems. I. Reaction of ethyldichlorophosphine with alpha,beta-unsaturated acids

SOURCE: Zhurnal obshchey khimii, v. 36, no. 2, 1966, 289-296

TOPIC TAGS: organic phosphorus compound, chlorinated organic compound, conjugate bond system, IR spectrum, molecular structure, condensation reaction, alkylphosphine

ABSTRACT: A simple method was developed for producing chlorides of 4-oxo-4-chloro-4-phosphocarboxylic acids, and a reaction scheme was proposed. Ten derivatives of 4-oxo-4-hydroxy-4-phosphocarboxylic acids were produced from such starting materials as ethyldichlorophosphine and phenyldichlorophosphine with acrylic and methacrylic acids. The structures of the condensation products of ethyldichlorophosphine with alpha,beta-unsaturated acids and of the products of further conversion of these reaction products were confirmed by studies of their infrared spectra. Orig. art. has: 1 figure and 2 tables. [JPRS]

SUB CODE: 07 / SUBM DATE: 16Nov64 / ORIG REF: 005 / OTH REF: 002

Card 1/1 UDC: 547.468.1

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

L 31275-66 EWT(m)/EWP(j) RM

ACC NR: AP6022799 SOURCE CODE: UR/0079/66/036/002/0296/0302

42

B

AUTHOR: Khayrullin, V. K.; Sobchuk, T. I.; Pudovik, A. N.

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

TITLE: Reaction of ethyldichlorophosphine with alpha,beta-unsaturated acids

SOURCE: Zhurnal obshchey khimii, v. 36, no. 2, 1966, 296-302

TOPIC TAGS: reaction mechanism, chlorinated organic compound, IR spectrum, esterification, chemical synthesis, alkylphosphine, diene synthesis

ABSTRACT: The addition of ethyldichlorophosphine to propiolic acid proceeds in the 1,4-position with the formation of 4-oxo-4-chloro-4-phospha-2-hexenoyl chloride. In the reaction of 4-oxo-4-chloro-4-phospha-2-hexenoyl chloride with alcohols and diethyl-amine, esters and the diethylamide of 4-oxo-4-alkoxy-4-phospha-2-hexenoic acid were obtained. Esters of 4-oxo-4-alkoxy-4-phospha-2-hexenoic acid, containing an electrophilic bond, readily add nucleophilic reagents and are extremely active in diene synthesis. The nucleophilic reagent is directed to the beta-carbon atom with respect to the carbomethoxy group. Infrared spectra are cited for seven reaction products. The authors thank R. R. Shagidullin for producing and interpreting the IR spectrum. Orig. art. has: 1 figure and 1 table. [JPRS]

SUB CODE: 07 / SUBM DATE: 15Mar65 / ORIG REF: 006 / OTH REF: 002

UDC: 547.468.1

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

ACC NR: AP6021683 SOURCE CODE: UR/0079/66/036/003/0494/0498

AUTHOR: Khayrullin, V. K.; Pudovik, A. N.

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

TITLE: Reaction of ethyldichlorophosphine with crotonic acid

37
B

SOURCE: Zhurnal obshchey khimii, v. 36, no. 3, 1966, 494-498

TOPIC TAGS: alkylphosphine, chlorinated organic compound, esterification, IR spectrum, chemical synthesis

ABSTRACT: The reaction of ethyldichlorophosphine with crotonic acid was found to proceed smoothly at room temperature, forming a single product, 3-methyl-4-oxo-4-chloro-4-phosphacaproyl chloride. Reaction of 3-methyl-4-oxo-4-chloro-4-phosphacaproyl chloride with alcohols yielded esters of 3-methyl-4-oxo-4-alkoxy-4-phosphacaproic acid. In these reactions, anhydrides of ethyl-beta-carbalkoxyisopropylphosphinic acid are formed at the same time. Infrared spectra are cited for the chloride and five esters. Orig. art. has: 1 figure and 2 tables. [JPRS]

SUB CODE: 07 / SUBM DATE: 05Apr65 / ORIG REF: 002

Card 1/1 UDC: 547.26'118

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

ABRAMOV, V.S.; KHAYRULLIN, V.K.

Interaction of dialkylphosphorous acids with aldehydes and ketones. Part 9. Di-tret-(β', β', β'-trichloro)-butyl esters of substituted α-oxymethylphosphinic acid. Zhur.ob.khim. 26 no.3:811-813 Mr '56. (MLRA 9:8)

1. Kazanskiy khimiko-tekhnologicheskiy institut imeni S.M. Kirova. (Phosphinic acid)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULLIN, V. K. Cand Chem Sci -- (diss)"On the Problem of the Interaction Between Chlorine-Substituted Tertiary Alcohols and and Trichloride of Phosphorus and the Study of the Properties of the Resulting Products." Kazan', 1957. 19 pp 22 cm. (Min of Higher Education USSR, Kazan' Chemical Engineering Inst im S. M. Kirov), 150 copies (KL, 25-57, 110)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULLIN, V. K.

AUTHORS: Abramov, V. S. and Khayrullin, V. K. 79-2-36/58

TITLE: About Mixed Esters of Di-Tert.-(1,1,1-Trichloro)-Butylphosphorous Acid (O smeshannykh efirakh di-tret.-(1,1,1-trikhlor)-butilfosforistoy kisloty)

PERIODICAL: Zhurnal Obshchey Khimii, 1957, vol 27, No 2, pp. 444-449 (U.S.S.R.)

ABSTRACT: Report describes the syntheses of mixed esters which were obtained from monoacid chlorides of di-tert.-(1,1,1-trichlorobutylphosphorous acid and various alcohols in the presence of pyridine in a dry ether medium. It was established that the steric factors play an essential and possibly even a decisive role in the formation of phosphorous acid esters from tertiary alcohols. The reaction, carried out at a temperature of 0 - 5° with consequent heating of the ester to a boiling point, utilized primary alcohols of normal and iso-structure as well as secondary, cyclic and tertiary alcohols. It was found that primary alcohols of normal structure - methyl, ethyl, propyl, butyl and octyl do react in cold state with the acid chloride resulting in the formation of homologous mixed ester and separation of pyridine chloride. Reactions with tertiary

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79-2-36/58

About Mixed Esters of Di-Tert.-(1,1,1-Trichloro)-Butylphosphorous Acid

alcohols formed no phosphites. The physico-chemical properties of the esters are listed.

It is shown that primary alcohols - isobutyl and [illegible]y and secondary alcohols - isopropyl, sec.-butyl and cyclohexanol react with mono acid chloride of di-tert.-(1,1,1-trichloro)-butylphosphorous acid in the presence of pyridine yielding homologous mixed esters (high yields). Mixed esters of butyl-phosphorous acid with copper monochloride form complex compounds.

2 tables. There are 13 references, of which 8 are Slavic

ASSOCIATION: Kazan' Chemical-Technological Institute imeni S. M. Kirov

PRESENTED BY:

SUBMITTED: February 2, 1956

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

Mixed esters of 1,1,1-trichloro-tert-butyl trichloro methylcyclohexyl phosphite. II. [illegible] K. Khaifrullin (S. [illegible] Zhur. Obshchei Khim. 27, [illegible]

To 41.2 g. PCl_3 and 65.3 g. [illegible] in 250 ml. Bu_2O was added 23 [illegible] pyridine [illegible] ring 2 hrs. the mixt. was filtered and the [illegible]

viscous fuming [illegible] 1.5601 [illegible] 1.5628 which [illegible] Refluxing 158 g. $CCl_3CMe_2OPCl_2$ with [illegible] methylcyclohexanol and 53.2 pyridine [illegible]

58.5% $CH_3C(CCl_3)OP(OCMe_2CCl_3)$ [illegible] 1.5046, 1.5422; when 2 moles of the [illegible] product was formed out in [illegible] larly in 30.5% yield from I and [illegible] b. 188.8°, 1.5039, [illegible]

[illegible] $CCl_3OP(OCMe_2$ [illegible] ane. II and ROH in Bu_2O [illegible]

fuming $(CH_3)_2C(CCl_3)OP$ [illegible] 8%, b. 181-2.5° [illegible] ending: E2, 85.1% [illegible] 1.5233, m [illegible] 1.5[illegible] Pb, [illegible] esters [illegible] monomer [illegible] 143.4-5°, El, m [illegible] [illegible] m 161-3° [illegible] whole reaction [illegible] results as the product was [illegible] able [illegible] esters with [illegible]

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

Mixed esters of 2,2,2-trichloro-tert-butylphosphorous acid. III. V. S. Abramov and V. K. Khafrullin. Tech. Inst. [illegible] Zhur. Obshchei Khim. [illegible] (1957) cf. C. A. 52, 27635.—To 0.3 mole glycol [illegible] ROH and 0.4 mole pyridine in 300-400 ml. [illegible] $CCl_3CMe_2OPCl_2$ was added with ice cooling, after [illegible] at room temp., and finally at reflux the mixt. was [illegible] and distd. yielding the following esters [illegible] d_{20}, and n_D^{20} given): $CCl_3CMe_2OP(OCH_2)_2$ [illegible]

1.4226, 1.4930; $CCl_3CMe_2OP(OCH_2CHMe)_2$ [illegible] 1.3605, 1.4591; $CCl_3CMe_2OP(OCMe_2)_2$ [illegible] 122-3°/3, 1.2635, 1.4830; $CCl_3CMe_2OP(OCH_2CH_2)_2$ [illegible] 131°/6 (m. 62-3°); $CCl_3CMe_2OP(OMe)_2$ [illegible] 1.3346, 1.4779; $CCl_3CMe_2OP(OEt)_2$ [illegible] 1.4700; $CCl_3CMe_2O^{+}(OBu)_2$ [illegible] 1.4673; $CCl_3CMe_2OP(OCH_2Me)_2$ [illegible] 1.4833; $CCl_3CMe_2OP(OCH_2CH_2)_2$ [illegible] 730, 1.5142; $CCl_3CMe_2OP(OC_6H_{11})_2$ [illegible] 1.4985; $CCl_3CMe_2O(HOPO)$ [illegible]

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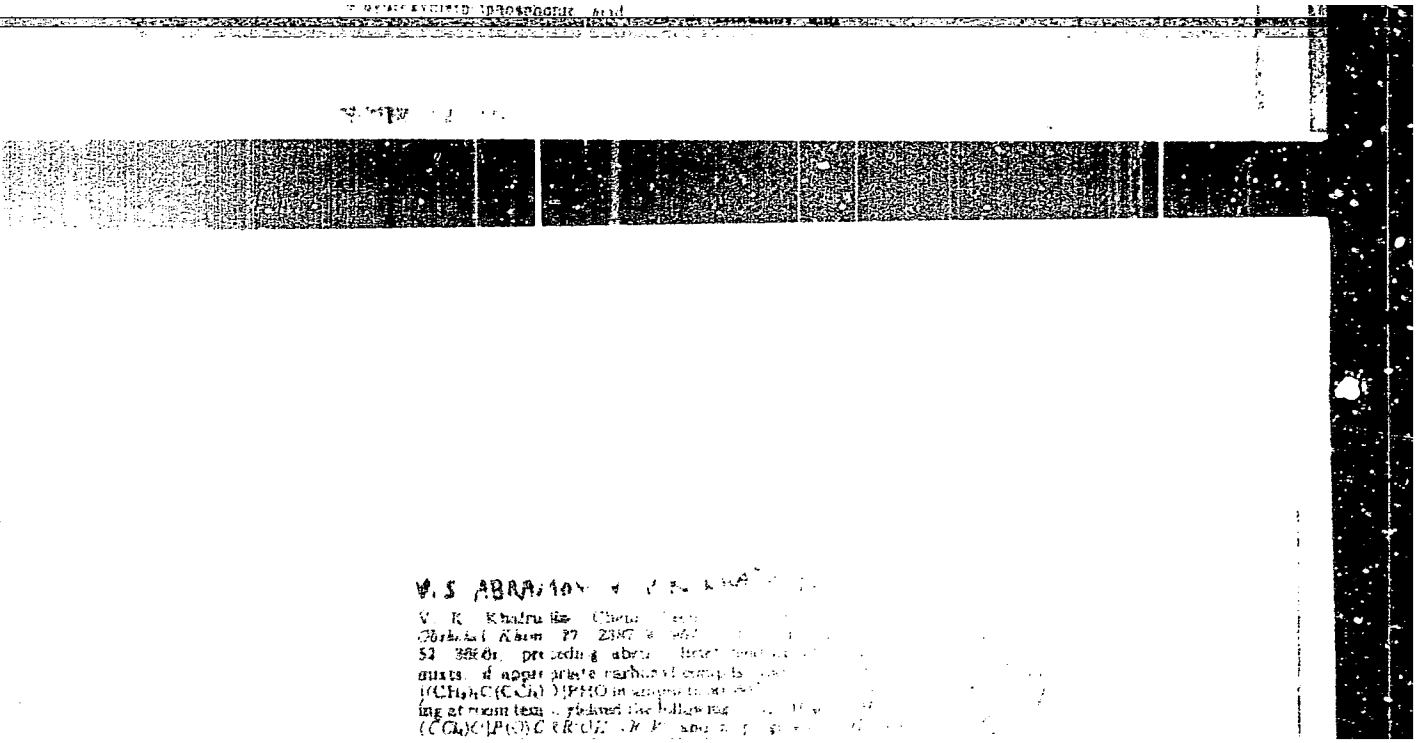

V. S. ABRAMOV [illegible]

V. K. Khairuzin, Chem. [illegible] Obshchei Khim. 27, 2387 [illegible] 52, 3860r, preceding abstr. [illegible] mixts. of appropriate carbonyl compds. [illegible] $[(CH_3)_3C(CCl_3)]_2PHO$ in [illegible] ing at room temp. yielded the following [illegible] $(CCl_3)O[P(O)]C(R)(OH)$ [illegible]

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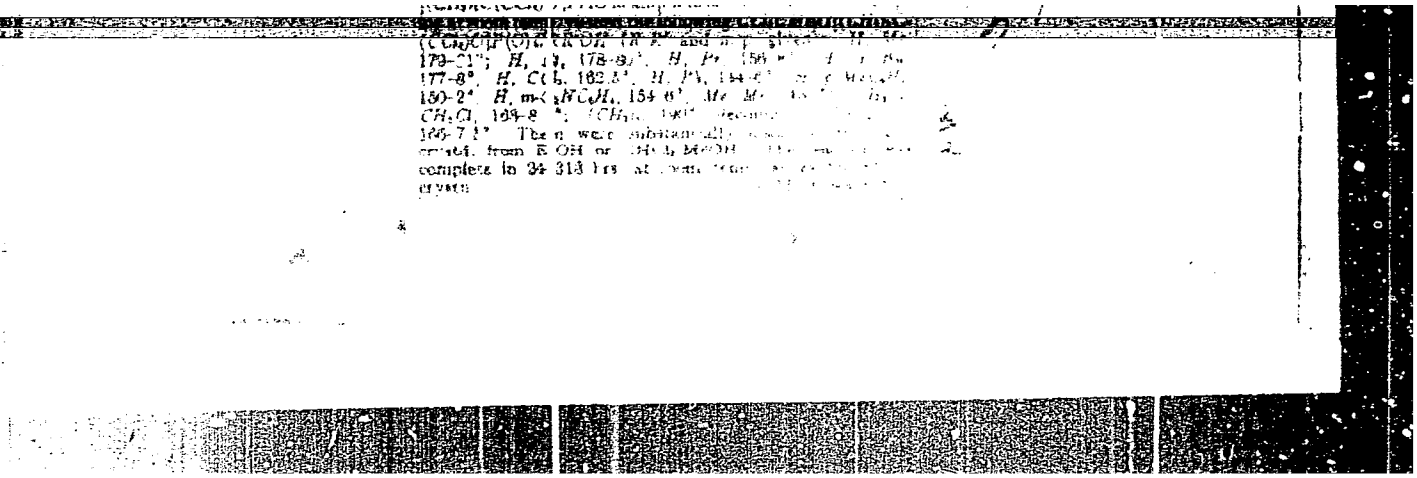
"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6



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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULLIN, V.K.

ABRAMOV, V.S.; KHAYRULLIN, V.K.

Reaction of dialkyiphosphorus acids with aldehydes and ketones. Part 14: Tertiary-(1,1,1 - trichloro)-butyl-1-trichloromethylcyclohexyl-1 esters of substituted α -oxymethylphosphinic acid. Zhur. ob. khim. 27 no.9:2387-2389 S '57. (MIRA 11:3)

1.Kazanskiy khimiko-tekhnologicheskiy institut.
(Esters) (Acids, Organic)

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

SOV/79-29-4-39/77

5(3)

AUTHORS: Abramov, V. S., Khayrullin, V. K.

TITLE: On the Reaction of Dialkylphosphorous Acids With Aldehydes and Ketones (O vzaimodeystvii dialkilfosforistykh kislot s al'degidami i ketonami). XIX. Di-1-trichloromethyl Cyclopentyl-1 Esters of α-Oxyalkyl Phosphinic Acids (XIX. Di-1-trikhlormetil-tsiklopentil-1-cvyye efiry α-oksialkilfosfinovykh kislot)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 4, pp 1222-1225 (USSR)

ABSTRACT: The report under review is a continuation of previous papers published by the authors on the condensation of dialkylphosphorous acids with carbonyl compounds, a process which is becoming increasingly important. The reaction of tertiary chlorine-substituted alcohols with PCl_3 results in the acid dichlorides and acid monochlorides of the corresponding alkyl- and dialkylphosphorous acids. Such acid chlorides were obtained by the authors from 1-trichloromethyl cyclopentanol-1 (Ref 5) as well. Acid monochlorides change with water into the corresponding dialkylphosphorous acids. Di-1-trichloromethyl cyclopentyl-1-phosphorous acid was characterized as a viscous non-distillable liquid. It corresponds to the empirical formula $C_{12}H_{17}O_3Cl_6P$.

Card 1/3

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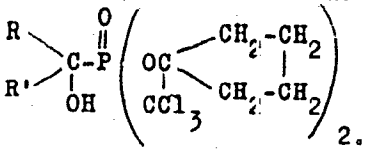
SOV/79-29-4-39/77

On the Reaction of Dialkylphosphorous Acids With Aldehydes and Ketones. XIX. Di-1-trichloromethyl Cyclopentyl-1 Ester of α-Oxyalkyl Phosphinic Acids

When left undisturbed it forms crystals with a melting point of 37-38°. This acid condenses with aldehydes and ketones without catalyst. This reaction takes place, at room temperature, within 21-50 hours, and much faster at temperatures between 40 and 60°. In order to ensure complete crystallization the condensation products (e.g. with propionic-, butyric-, and isovaleric aldehyde) had to be left undisturbed for a while. The authors assume that the reaction takes place with a trivalent form of phosphorous acids. Thus the di-1-trichloromethyl cyclopentyl-1 esters of the substituted α-oxymethylphosphinic acids were obtained by the condensation of the above acid with aldehydes and ketones. The constants and analyses of the esters obtained are given in the table. Some esters will still have to be examined as to their insecticide activity.



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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

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SOV/79-29-4-39/77

On the Reaction of Dialkylphosphorous Acids With Aldehydes and Ketones. XIX. Di-1-trichloromethyl Cyclopentyl-1 Ester of α-Oxyalkyl Phosphinic Acids

There are 1 table and 5 references, 4 of which are Soviet.

ASSOCIATION: Kazanskiy khimiko-tekhnologicheskiy institut (Kazan' Institute of Chemical Technology)

SUBMITTED: March 25, 1958

Card 3/3

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

5 (3)

AUTHORS: Abramov, V. S., Khayrullin, V. K. SOV/79-29-5-41/75

TITLE: On the Reaction of Dialkyl-phosphorous Acids With Aldehydes and Ketones (O vzaimodeystvii dialkilfosforistykh kislot s al'degidami i ketonami). XX. Esters of Some α-Oxyalkyl-thiophosphinic Acids (Efiry nekotorykh α-oksialkiltiofosfinovykh kislot)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 5, pp 1599-1604 (USSR)

ABSTRACT: The scheme of the reactions mentioned in the title was largely clarified by the authors and other scientists (Refs 1-5). It was to be expected that the thioderivatives of dialkyl-phosphite react with aldehydes and ketones in a similar way. Only few data on this problem are available in publications (Ref 6). This may be due to the fact that the preparation of dialkyl-thiophosphites was difficult in the beginning. Only quite recently (Ref 8) it was reported that by the influence of hydrogen sulfide upon halides of organically substituted phosphoric acids in the presence of tertiary bases thiopyroderivatives are formed and dialkyl-chloro-phosphites and their analogs in this reaction give

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On the Reaction of Dialkyl-phosphorous Acids With Aldehydes and Ketones. XX. Esters of Some α-Oxyalkyl-thiophosphinic Acids SOV/79-29-5-41/75

dialkyl-thiophosphorous acids in good yield. According to this reaction scheme, the authors prepared dialkyl- and diaryl-thiophosphites and condensed them with aldehydes and ketones. The condensation takes 15-200 hours at room temperature. The condensation products mostly represent highly viscous, sirupy liquids or vitreous substances. Some of these liquids could be recrystallized from acetone. As dialkyl-thiophosphites and dialkyl-phosphites are occurring in two tautomeric forms, it is assumed that the reaction with the enol form proceeds by reaction of the single electron pair of trivalent phosphorus with the electrophilic carbon atom of the carbonyl group. Like the esters of α-oxy-alkyl-phosphinic acids also the esters of α-oxy-alkyl-thiophosphinic acids undergo a cleavage of the P-C-bond due to heating and influence of lyes. This is explained by the existence of an intramolecular hydrogen bond (Refs 3, 13). A table presents the reaction times, melting points, and analytical data of the following compounds: Phenyl ester of α-oxy-(-β,β,β-trichloro)-ethyl-thiophosphinic acid; tertiary-(1,1,1-trichloro)-butyl ester of the same acid;

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On the Reaction of Dialkyl-phosphorous Acids With Aldehydes and Ketones. XX. Esters of Some α-Oxyalkyl-thiophosphinic Acids SOV/79-29-5-41/75

tertiary-(1,1,1-trichloro)-butyl ester of α-oxy-benzyl-thiophosphinic acid; the same trichloro-butyl ester of α-oxy-isopropyl-thiophosphinic acid; the same trichloro-butyl ester of α-oxy-cyclopentyl-thiophosphinic acid; 1-trichloro-methyl-cyclopentyl ester of α-oxy-benzyl-thiophosphinic acid; the same ester of α-oxy-m-nitrobenzyl-thiophosphinic acid; the same ester of α-oxy-isopropyl-thiophosphinic acid, and the same ester of α-oxy-cyclohexyl-thiophosphinic acid. The experimental part describes the condensations carried out, the formation of dialkyl-phosphorous acids and the decomposition of the esters by lyes. There are 1 table and 14 references, 12 of which are Soviet and 1 Polish.

ASSOCIATION: Kazanskiy khimiko-tekhnologicheskiy institut (Kazan' Institute of Chemical Technology)

SUBMITTED: May 7, 1958

Card 3/3

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

5(3)

SOV/79-29-7-53/83

AUTHORS: Khayrullin, V. K., Ledeneva, A. I., Abramov, V. S.

TITLE: Synthesis and Isomerization of the Mixed Esters of Di-β,β'-dichloroisopropylphosphorous Acid. V (Polucheniye i izomerizatsiya smeshannykh efirov di-β,β'-dikhlorizopropilfosforistoy kisloty. V)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 7, pp 2355-2359 (USSR)

ABSTRACT: Interaction of alcohols with PCl_3 yields alkyldichlorophosphites, dialkylchlorophosphites, dialkylphosphorous acid, and trialkylphosphites depending on the nature of the radical, the presence of substituents, and reaction conditions. Treatment of chlorine- and cyanine-substituted alcohols (Refs 2, 3 respectively) with PCl_3 gives acid chlorides of phosphorous acid and in some cases phosphites. The α,γ-dichlorhydrin of glycerin was used for this investigation. The compound reacted with PCl_3 at room temperature and gave the following compounds: The acid dichloride of β,β'-dichloroisopropylphosphorous acid (22%), the acid monochloride of di-β,β'-dichloroisopropylphosphorous acid (25.4%), and the di-β,β'-dichloroisopropyl ester of

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

Synthesis and Isomerization of the Mixed Esters of Di-β, β'-dichloroisopropylphosphorous Acid. V SOV/79-29-7-53/83

β, γ-dichloropropylphosphinic acid (9.8%). According to M. I. Kabachnik and P. A. Rossiyskaya (Ref 4), the latter is formed by an inter- or intra-molecular isomerization of the tri-β, β'-dichloroisopropylphosphite. The reaction of the α, γ-dichlorohydrin of glycerin with PCl_3 is demonstrated in the scheme given. The intact phosphorous ester, which was not obtained in pure form, reacted with cuprous chloride. This may be regarded as proof of the existence of phosphite in the solution (Ref 5). The acid monochloride of di-β, β''-dichloroisopropylphosphorous acid was saponified with water, and the resulting substituted phosphorous acid condensed with aldehydes and ketones. The acid dichloride of the same acid was used for synthesizing the mixed esters of phosphorous acid by treatment with aliphatic alcohols in absolute ether in the presence of pyridine at -6 - 0° (yield 47-65%). The physical properties of the synthesized esters are given in table 1

$$\begin{matrix} CH_2Cl \\ CH_2Cl \end{matrix}\!\!>CHOP(OR)_2 \quad ,$$

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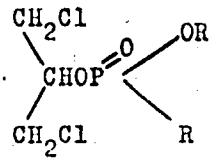
"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

Synthesis and Isomerization of the Mixed Esters of Di-β, β'-dichloroisopropylphosphorous Acid. V SOV/79-29-7-53/83

those of the alkyl-β, β'-dichloroisopropyl esters of the alkylphosphinic acids in table 2,



There are 2 tables and 8 references, 6 of which are Soviet.

ASSOCIATION: Kazanskiy khimiko-tekhnologicheskiy institut (Kazan' Institute of Chemical Technology)

SUBMITTED: July 3, 1958

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

5(3) SOV/79-29-8-19/81

AUTHORS: Khayrullin, V. K., Ledeneva, A. I., Abramov, V. S.

TITLE: On the Reaction of Dialkyl-phosphorous Acids With Aldehydes and Ketones. XXI. Di-β,β'-dichloro-isopropyl Esters of the Substituted α-Oxymethyl-phosphinic Acid

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 8, pp 2551-2553 (USSR)

ABSTRACT: The authors continued their investigations concerning the synthesis of different α-oxyalkyl-phosphinates by condensation of the dialkyl-phosphorous acids with carbonyl compounds (Ref 1), and extended them to the di-β,β-dichloro-isopropyl-phosphorous acid. They found previously (Ref 2) that condensations which lead to the formation of chlorine-substituted α-oxyalkyl-phosphinates take place also without catalysts at room temperature. The condensation of the β,β'-dichloro-isopropyl-phosphorous acid, and other acids with chlorine atoms in the ester radicals of different structure, is very interesting. The above-mentioned acid was obtained by action of water on the corresponding acid chloride:

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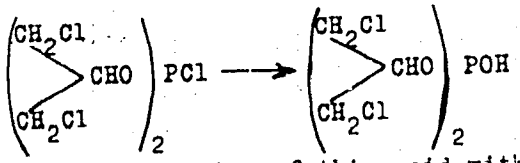
SOV/79-29-8-19/81

On the Reaction of Dialkyl-phosphorous Acids With Aldehydes and Ketones. XXI. Di-β,β'-dichloro-isopropyl Esters of the Substituted α-Oxymethyl-phosphinic Acid



The condensation of this acid with aldehydes and ketones was mostly carried out by mixing equimolar quantities of the reactants, without catalyst, at room temperature. The end products were best separated if they were crystallizable. The formation of a compact crystalline mass indicates the end of the reaction. The data of the esters recrystallized from 96% alcohol are presented in the table (NN° 1-5), in addition to the di-tert.-(1,1,1-trichloro)-butyl esters hitherto unknown of the α-oxy-β-chloro-isopropyl-phosphinic and α-oxy-β,β'-dichloro-isopropyl-phosphorous acids (NN° 6,7). The condensation products of the di-β,β'-dichloro-isopropyl-phosphorous acid with acetic, propionic, butyric, and isovalerianic aldehyde, cyclopentanone, etc.) resulted in the form of sirupy liquids the purification of which was difficult. There are 1 table and 2 Soviet references.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

SOV/79-29-8-19/81

On the Reaction of Dialkyl-phosphorous Acids With Aldehydes and Ketones. XXI. Di-β,β'-dichloro-isopropyl Esters of the Substituted α-Oxymethyl-phosphinic Acid

ASSOCIATION: Kazanskiy khimiko-tekhnologicheskiy institut (Kazan' Chemo-technological Institute)

SUBMITTED: July 3, 1958

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULLIN, V.K.; KURYLEVA, M.A.; SOBCHUK, T.I.

Preparation of mixed esters of phenylphosphinic acid. Izv. AN SSSR. Ser. khim. no.6:1083-1085 '65. (MIRA 18:6)

1. Institut organicheskoy khimii AN SSSR, Kazan'.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULLIN, V.K.

Reaction of ethyldichlorophosphine with α, β-unsaturated acids. Dokl. AN SSSR 162 no.4:827-828 Je '65. (MIRA 18:5)

1. Institut organicheskoy khimii AN SSSR, Kazan'. Submitted November 16, 1964.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULLIN, V.K.; SOBCHUK, T.I.

Preparation and rearrangement of mixed esters of phenyltert-(1,1,1-trichloro) butylphosphorous acid. Izv. AN SSSR, Ser. khim. no.11:2010-2013 '65. (MIRA 18:11)

1. Institut organicheskoy khimii AN SSSR, Kazan'.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

L 25616-66 EWT(m)/EWP(j) RM

ACC NR: AP6016112 SOURCE CODE: UR/0062/65/000/011/2010/2013

AUTHOR: Khayrullin, V. K.; Sobchuk, T. I.

ORG: Institute of Organic Chemistry, AN SSSR, Kazan' (Institut organicheskoy khimii

TITLE: Production and rearrangement of mixed esters of phenyltert-(1,1,1-trichloro)-butylphosphorous acid

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 11, 1965, 2010-2013

TOPIC TAGS: ester, organic phosphorous compound, halogenated phosphorous compound, aliphatic alcohol

The reaction of the dichloride of tert-(1,1,1-trichloro)butylphosphorous acid with phenol yielded chiefly the chloride of mixed phenyltert-(1,1,1-trichloro)butylphosphorous acid, which in contrast to mixed chlorides of phosphorous acid produced from unsubstituted aliphatic alcohols, exhibits practically no rearrangement of its radicals during repeated distillation. The reaction of the chloride of phenyltert-(1,1,1-trichloro)butylphosphorous acid with alcohols in the presence of triethylamine in anhydrous ether medium yielded phosphites with three different alkoxyls. The chloride does not react with 2,6-dimethylphenol, probably on account of the presence of steric hindrances. All the mixed esters obtained react exothermally with cuprous chloride, giving complex compounds. The rearrangement of the mixed esters of phenyltert-(1,1,1-trichloro)-butylphosphorous acid with methyl iodide proceeds with the splitting out of a

Card 1/2 UDC: 542.91+542.952.1+661.718.1

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L 25616-66

ACC NR: AP6016112

light, unsubstituted aliphatic radical and leads to the formation of the phenyltert-(1,1,1-trichloro)butyl ester of methylphosphinic acid. Phenyltert-(1,1,1-trichloro)butylphosphorous acid was produced by saponification of its chloride; this acid is added to chloral to give the phenyltert-(1,1,1-trichloro)-ester of alphahydroxy-beta,beta,beta-trichloroethylphosphinic acid. Orig. art. has: 2 tables. [JPRS]

SUB CODE: 07 / SUBM DATE: 22Jul63 / ORIG REF: 009

Card 2/2 FV

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

L 35323-66 EWT(m)/EWP(j) RM

ACC NR: AP6026893 SOURCE CODE: UR/0062/65/000/012/2128/2132

AUTHOR: Yeliseyenkov, V. N.; Khayrullin, V. K.

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

TITLE: Synthesis and rearrangement of mixed esters of ter (1,1,1-trichloro)amyl-2-phosphorous acid

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 12, 1965, 2128-2132

TOPIC TAGS: chemical synthesis, ester, phosphorous acid, alcohol, triethylamine, vacuum distillation, organic solvent, solubility, phosphinic acid, chemical separation

ABSTRACT: The corresponding mixed esters were synthesized by reaction of ter. (1,1,1-trichloro)amyl-2-phosphorous acid chloride with primary alcohols of normal and iso-structure, secondary alcohols, and phenol in the presence of triethylamine. All of the prepared esters are colorless, syrupy fluids that can be vacuum-distilled without decomposing; they dissolve in organic solvents (ether, acetone, benzene, alcohol) but are water-insoluble. The rearrangement of these esters by means of allyl bromide involves the separation of the nonsubstituted alkyl radical and results in the formation of mixed esters of allylphosphinic acid. Orig. art. has: 3 tables. [JPRS: 36,455]

SUB CODE: 07 / SUBM DATE: 22Jul63 / ORIG REF: 006 / OTH REF: 002

Card 1/1 UDC: 542.91+542.952.1+661.718.1

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

L 35322-66 EWT(m)/EWP(j) RM

ACC NR: AP6026894 SOURCE CODE: UR/0062/65/000/012/2133/2136

25
B

AUTHOR: Kuryleva, M. A.; Khayrullin, V. K.

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

TITLE: Synthesis and rearrangement of the mixed alkyl-tert. (1,1,1-trichloro) butyl esters of phenylphosphinous acid

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 12, 1965, 2133-2136

TOPIC TAGS: chemical synthesis, ester, chemical separation, phosphorus compound

ABSTRACT: This is continuation of a previous investigation dealing with the synthesis of the esters of phenylphosphinous acid by reaction of phenyl-tert. (1,1,1-trichloro)butoxychlorophosphine with primary alcohols of normal and iso-structure, secondary butyl alcohol, and phenol in the presence of ethylamine. The esters thus synthesized are: CH_3, C_2H_5, C_3H_7, C_4H_9, i-C_3H_7, i-C_4H_9, i-C_5H_{11}, C_6H_5, and secondary C_4H_9. There is no reaction with 1-trichloromethylcyclo-pentanol, owing to steric factors. The rearrangement of these mixed alkyl-ter. (1,1,1-trichloro)butyl esters by means of methyl iodide or allyl bromide involves the separation of a light nonsubstituted alkyl. Orig. art. has: 2 tables. [JPRS: 36,455]

SUB CODE: 07 / SUBM DATE: 22Jul63 / ORIG REF: 003

Card 1/1 UDC: 542.91+542.952.1+661.718.1

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULLIN, Ya. Kh.

KHAYRULLIN, Ya. Kh. "Methods to increase the productivity of grasses and their mixtures in crop rotation in Rostov Oblast", Sbornik nauch.-issled. rabot (Azovo-Chernomor. s.-kh. in-t), XII, 1948, p. 3-12.

SO: U-4393, 19 August 53, (Letopis 'Zhurnal 'nykh Statey', No. 22, 1949).

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULLIN, Ya. Kh.

KHAYRULLIN, Ya. Kh. "The dynamics of the accumulation of the root mass of agricultural plants in the soil under field crop rotation", Sbornik nauch.-issled. rabot (Azovo-Chernomor. s.-kh. in-t), XII, 1948, p. 37-50, - Bibliog: 14 items.

SO: U-4393, 19 August 53, (Letopis 'Zhurnal 'nykh Statey', No. 22, 1949).

KHAYRULLIN, YA. KH.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013

USSR / Cultivated Plants. Cereals. M

Abs Jour : Ref Zhur - Biol., No 8, 1958. No 34620

Author : Khayrullin, Ya. Kh.
* Inst : ~~Not given~~
Title : Problems of Agrotechnical Methods in Winter Wheat on the Territory in Rostov'ym Oblast

Orig Pub : Zemledeliye, 1957, No 8, 49-52.

Abstract : None given

* Azove - Chernomorskiy s.-kh. nauchno-issledovatel'skiy institut.

Card 1/1

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

ACC NR: AP6024428

SOURCE CODE: UR/0362/66/002/007/0721/0728

AUTHOR: Ivanov, A. P.; Khayrullina, A. Ya.

ORG: Physics Institute, Academy of Sciences BSSR (Akademiya nauk BSSR, Institut fiziki)

TITLE: Determination of the extinction coefficient of turbid media

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 2, no. 7, 1966, 721-728

TOPIC TAGS: turbid medium, light scattering, light reflection coefficient

ABSTRACT: This article examines the problem of the effect of scattered light on the effective magnitude of the extinction coefficient as a function of the optical parameters of the medium and angular characteristics of the source and receiver. Tables of errors in the measured values of the extinction coefficient are presented and, by using the data of these tables, it is possible to make recommendations concerning the choice of the measurement instrument under certain conditions when a given accuracy of measurement is required. Milk, an alcoholic solution of rosin, and a solution of polystyrene in acetone diluted with distilled water were used as media having different scattering indicatrices. Bouguer's law was used to determine the extinction coefficient. It was found that the error in determining the extinction coefficient for a milk medium was highest owing to the greater elongation of the indicatrix of refrac-

Card 1/2

UDC: 535.361.1:551.591

APPROVED FOR RELEASE: 09/17/2001 CIA-R

Card 2/2

MISTROVA, V.N.; KHAYRULLINA, I.Kh.

The AVE-1 vacuum extractor in obstetrical practice. Kaz.med.zhur. no.3:87-88 My-Je '62. (MIRA 15:9)

1. Rodil'nyy dom No.3 Kazani (glavnyy vrach - A.D.Oskanova) i kafedra akusherstva i ginekologii (zav. - prof. N.Ye.Sidorov) Kazanskogo gosudarstvennogo instituta usovershenstvovaniya vrachey imeni V.I.Lenina.

(OBSTETRICS--EQUIPMENT AND SUPPLIES)

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULLINA, KH.

6A

11D

Measurement of the osmotic pressure and suction force in drying leaves. Kh. Khairullina. *Uchenye Zapiski Kazan. Gosudarst. Unio. im. V. I. Ul'yanova-Lenina* 101, No. 3, *Sbornik Studencheskikh Rabot* No. 2, 80 (1941).—When leaves of *Primula sinensis* are dried over H_2SO_4, the concn. of cell fluids and the suction force increase with time, but the change in concn. of fluids is not proportional to the loss of H_2O. There is a change in chemistry of the cell substances owing to increased osmotic activity. The suction force after 3 hrs.' drying becomes greater than the concn. of total cell fluid. It is probably a summation of radial and osmotic pressures. H. M. L.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6

KHAYRULLINA, S.P.

Certain Cauchy problems with initial data on the degeneration line. Dokl. AN SSSR 161 no.5:1027-1029 Ap '65. (MIRA 18:5)

1. Rostovskiy-na-Donu institut sel'skokhozyaystvennogo mashinostroyeniya. Submitted November 9, 1964.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920013-6"

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Electroencephalography in chronic brucellosis. Vest. AN Kazakh. SSR. 19 no.6:57-61 Je '63. (MIRA 17:7)

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Functional state of some analysors in relation to sex and age. Izv. AN Kazakh. SSR. Ser. med. nauk:31-36 '64 (MIRA 17:7)

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A161/A133

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AUTHORS: Tleulin, S. D., Shchetilin, A. P., Khayrushev, Ye. A.

TITLE: Pin tube electromyograph

PERIODICAL: Akademiya nauk Kazakhskoy SSR, Vestnik, no. 11, 1960, 104 - 106

TEXT: The subject myograph has been developed at the Institut krayevoy patologii AN KazSSR (Institute of Regional Pathology of the Academy of Sciences of the KazSSR) because of the absence of modern myographs on the market. The new features in it are the pin tube amplifier for measurements of biological currents, and electronic voltage stabilizers (Fig. 1 and 2). Actually, the amplifier had been designed by V. A. Kozhevnikov and V. I. Siroko of the Institut fiziologii im. I. P. Pavlova AN SSSR (Institute of Physiology imeni I. P. Pavlov of the AS USSR) who used the system of A. M. Andrew and of G. Klein (both of 1955, the names are given in original English and German) with octal ("oktal'nyye") base tubes. In the new amplifier these are replaced by pin-type base tubes ("pal'chikovyye"). The tubes are operating from a 110 - 220 v network (can also work from a storage battery). The balanced system permits recording without screening off the room from the common interference sources like electric lighting bulbs, CH 250 (SN250)

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voltage stabilizer, etc. The amplification factor (from input to electron-ray tube) is about 1,000,000; the sensitivity (input-photo film) 10 μv in 1 mm; the frequency band amplified without frequency and amplitude distortions is 1 - 2000 cycles. The principle of the system had been described in 1957 by Kozhevnikov and Siroko, therefore only the new features are mentioned in the article. The four amplifier cascades (Fig. 1) include 6Н2П (6N2P) pin base tubes. Local negative feedback between the I and II cascades could be used in view of the high amplification reserve, and the zero line drift and the interference level are reduced to minimum. The total resistance in the cathode of the first cascade tube (negative feedback for symmetrical signals) is high, due to the Л5 (L_5), a 6К4П (6K4P) tube used. The amplifier is assembled on a plexiglas frame (for it was not possible to use a metal panel because of interferences), and the frame is fixed on foam rubber dampers. The parts of the amplifier are of standard pattern but carefully selected. The tube anodes are supplied from stabilized rectifiers. The electronic voltage stabilizers (Fig. 2) are assembled in a combination compensational and parametric system the principle of which had been described in literature in 1957 by I. G. Gol'dreyer (Russian name) and in 1941 by E. E. Miller (English spelling). The reference voltages are removed from the СГ2С (SG2S) and 85А2 (85A2) stabilivolts and fed to the grids of the left halves of the Л3 and Л4

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tubes of 6Н9 (6N9) type working as cathode followers. The right halves of these tubes are amplifying the output voltage from the devider (R_{13}, R_{14}, R_{15}, R_{16}). The second cascades are also assembled on 6N9 tubes and are working similarly - as cathode follower and amplifier ($Л_5$, $Л_6$). The $Л_7$ and $Л_8$ tubes are the servo elements in the system. The rectifiers are of the standard type, with П -shaped filters. The variable component of stabilized voltage on the stabilizer's output does not exceed 0.2 mv. The record from the electron-ray tube of 13Л037 (13L037) type is taken by a photo-recorder similar to the Fedorovskiy's recorder, but with a ДАГ -1 (DAG-1) motor for pulling the film with 80 and 120 mm/sec speed. The commutator of the myograph has a built-in ohmmeter for measuring the resistance between the electrodes applied to the muscle surface, a voltmeter for watching the supply voltage, an input voltage calibrator, and two switches. The recording electrodes are made from stannium and lead, 0.5 cm in diameter, spaced 2 cm; held in plexiglas holders. The grounding electrode is of standard execution from a cardiograph. The authors express their gratitude to Senior Laboratory worker F. G. Trusov who participated in the development of the myograph. There are 2 figures.

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Characteristics of the functional state of the olfactory, gustatory and cutaneous analysors in various age groups. Izv. AN Kazakh. SSR. Ser. med. i fiziol. no.2:7-17 '61. (MIRA 15:4)
(AGING) (SMELL) (TASTE) (TOUCH)

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Analyzers and their condition in rural inhabitants. Zdrav. Kazakh. 22 no.3:44-46 '62. (MIRA 15:12)

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(BRUCELLOSIS) (SENSES AND SENSATION)

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(SMELL) (BRUCELLOSIS)

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Function of the gustatory analysor in brucellosis. Trudy Inst. kraev.pat.AN Kazakh SSR 12:123-127 '62. (MIRA 15:11)
(TASTE) (BRUCELLOSIS)

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