

87212

S/126/60/010/001/025/027/XX

E032/E314

188100 1045, 1418, 1138

AUTHORS: ~~Pervakov, V.A.~~, Khotkevich, V.I. and Shepelev, A.G.

TITLE: Latent Heat of Plastic Deformation of Silver at -196 and +20 °C

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol. 10, No. 1, pp. 117 - 121

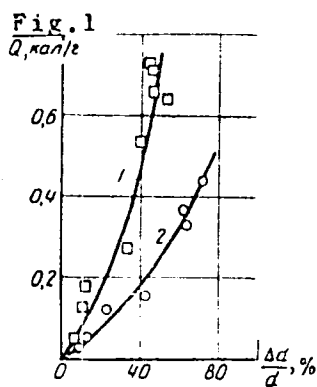
TEXT: The present authors have measured the latent heat of deformation Q , on the degree of deformation $\Delta d/d$ and the work A done in compressing silver specimens at temperatures between -196 and 20 °C. The pulse method described by the second of the present authors et al in Ref. 1 was employed. 99.99% pure silver wires, having a diameter of 0.1 mm and length of 60 mm were used. The deformation was produced by compression between polished steel plates. Fig. 1 shows the dependence of Q (cal/g) on $\Delta d/d$ at -196 °C (Curve 1) and +20 °C (Curve 2). Fig. 2 shows the latent heat Q as a function of A (cal/g) at the same temperatures as in Fig. 1. Fig. 3 shows Q/A as a function of A and Fig. 4

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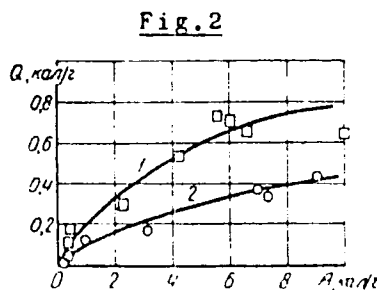
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S/126/60/010/001/025/027/XX
E032/E314

Latent Heat of Plastic Deformation of Silver at -196 and $+20$ °C shows the latent heat Q as a function of the relative change in the resistance of the specimens. Acknowledgments are expressed to N.L. Zheldakov for assistance in building the apparatus and in the measurements. There are 4 figures and 7 references: 5 Soviet and 2 non-Soviet.



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Latent Heat of Plastic Deformation of Silver at -196 and -20

Fig. 2

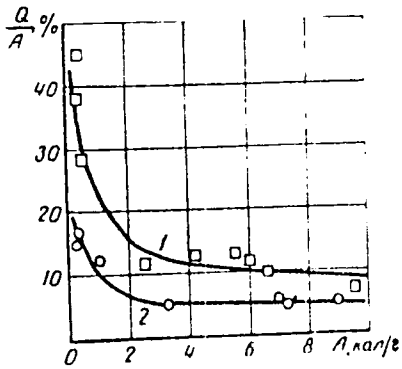
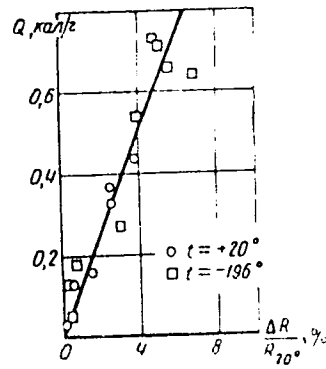


Fig. 4



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E032/E314

Latent Heat of Plastic Deformation of Silver at -196 and $+20$ °C

ASSOCIATIONS: Fiziko-tehnicheskii institut AN UkrSSR
(Physicotechnical Institute of the AS
Ukrainian SSR)
Khar'kovskiy gosudarstvennyy universitet
imeni A.M. Gor'kogo (Khar'kov State
University imeni A.M. Gor'kiy)

SUBMITTED: February 15, 1960

Card 4/4

PERVAKOV, V.A.; KHOTKEVICH, V.I.

Colorimetric determination of the energy of formation of vacancies
in gold. Dokl. AN SSSR 134 no.6:1328-1330 O '60. (MIRA 13:10)

1. Fiziko-tekhnicheskiy institut Akademii nauk USSR i Khar'kovskiy
gosudarstvennyy universitet im. A.N.Gor'kogo. Predstavleno akademikom
A.F.Ioffe.

(Gold)

PIERVAKOV, V.A. [Pervakov, V.O]; KHOTKEVICH, V.I. [Khotkevych, V.H.]

Thermal capacity of plastically deformed copper. *Ukr. fiz.*
zhur. 6 no.2:240-244 Mr-Apr '61. (MIRA 14:6)

1. Fiziko-tekhnicheskii institut AN USSR i Khar'kovskiy gosudar-
stvennyy universitet im. A.M. Gor'kogo.
(Copper--Thermal properties)
(Deformations (Mechanics))

PERVAKOV, V.A. [Pervakov, V.O.]; KHOTKEVICH, V.I. [Khotkevych, V.H.]

Application of the pulse calorimetric method for determining
the solvation energy of oxygen in silver. Ukr. fiz. zhur.
6 no.3:408-411 My-Je '61. (MIRA 14:8)

1. Fiziko-tehnicheskii institut AN USSR, g. Khar'kov, i
Khar'kovskiy gosudarstvennyy universitet im. Gor'kogo.
(Solvation)
(Oxygen)
(Silver)

KHOTKEVICH, V.I.; PERVAKOV, V.A.; GENKIN, Ya.Ye.

Low-temperature press. Prib.i tekhn.eksp. 6 no.5:201-202 3-0
'61. (MIRA 14:10)

1. Fiziko-tekhnicheskii institut AN USSR i Khar'kovskiy
gosudarstvennyy universitet.
(Low-temperature research--Equipment and supplies)

PERVAKOV, V.A.; MERISOV, B.A.; KHOTKEVICH, V.I.

Effect of the characteristics of crystal lattice distortions on the temperature dependence of the electric resistance of silver and gold. Fiz. met. i metalloved. 12 no.1:38-41 J1 '61. (MIRA 14:8)

1. Khar'kovskiy gosudarstvennyy universitet imeni A.M.Gor'kogo - fiziko-tekhnicheskiy institut AN USSR.
(Precious metals--Metallography)
(Metals, Effect of temperature on)

S/126/61/012/003/020/021
E073/E335

AUTHORS: Pervakov, V.A., Petrenko, N.S. and Khotkevich, V.I.

TITLE: Influence of the plastic deformation on eliminating excess vacancies in quenched gold

PERIODICAL: Fizika metallov i metallovedeniye, v. 12, .
no. 3, 1961, 460 - 461

TEXT: According to M.A. Bol'shanina (Ref. 1 - Ivz. AN SSSR, ser. fiz., 1950, 14, 223) plastic deformation of metal does not only cause formation of crystal-lattice distortions but also leads to their elimination. According to published work a sufficiently high deformation at room temperature in Al and Au leads to a decrease in the concentration of the excess vacancies. Data are given in this paper on the influence of deformation, at the rate of 10%/min and 10^5 %/min (impact) at 20 and -196 °C, on the increase in the resistance caused by preliminary quenching. The investigations were made on 60 mm long, 0.05 mm dia. wire, made of pure gold (99.99%), which was determined by compressing the wire with two polished steel plates. The quenching was by rapid submersion of the specimens in water. Fig. 1 shows the dependence
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E071/E335

Influence of the

process itself, it can be anticipated that for annealed Au specimens which are slowly deformed at room temperature the contribution of the vacancies to the increase in the electric resistance at low degrees of deformation will be greater than at high degrees of deformation. Specimens deformed at low temperatures or specimens deformed by impact at room temperature should contain more vacancies than specimens deformed at a low rate at room temperature. These conclusions on the vacancies are also applicable to other point defects which have a lower temperature stability than vacancies.

There are 3 figures and 5 references: 2 Soviet-bloc and 3 non-Soviet-bloc. The three English-language references mentioned are: Ref. 2 - M. Wintenberger, Symposium by the Institute of Metals, Dec., 1957, London, 1958, 201; Ref. 3 - M. Wintenberger - Acta met., 1959, 7, 549 and Ref. 5 - R. Maddin, A. Cottrell - Phil. Mag., 1955, 46, 755. ✓

ASSOCIATION: Khar'kovskiy gosuniversitet im. A.M. Gor'kogo
(Khar'kov State University im. A.M. Gor'kiy)

SUBMITTED: April 27, 1961
Card 3/43

ELYADEN,
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of

1.

L 14998-66 EWT(m)/EWP(w)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(h) IJP(c) JD/HW/JG
ACC NR: AP5028563 (N) SOURCE CODE: UR/0126/65/020/005/0733/0740

AUTHOR: Guterman, M. B.; Mirkin, I. L.; Pavlyuk, A. A.; Pervakov, V. A.; Petrenko, N. S.; Khotkevich, V. I.

ORG: TsNII of Technology and Machine Building, Moscow (TsNII tekhnologii i mashino-stroyeniya); Kharkov gosuniversitet im. A. M. Gor'kiy (Khar'kovskiy gosuniversitet)

TITLE: Certain features connected with the K-state in Ni-Cr, Ni-Cr-Mo and Fe-Ni-Cr-Mo alloys

SOURCE: Fizika metallov i metallovedeniye, v. 20, no. 5, 1965, 733-740

TOPIC TAGS: metal physics, ordered alloy, mechanical property, resistivity, non-ferrous metal alloy, ferrous alloy, metal heat treatment, heat resistant alloy, high temperature strength, metal hardening

ABSTRACT: Changes in electrical resistivity in Ni + 15% Cr, Ni + 15% Cr + 18% Mo and Fe + 25% Ni + 16% Cr + 6% Mo alloys were studied as a function of low temperature deformation (from +20° to -196°C) and annealing rate (from 2 to 10⁶ deg/min). Decomposition of the K-state in the alloys was observed. The effect of the K-state on high temperature strength was also noted. The K-state causes microscopic inho-

UDC: 539.4.015

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L 14998-66

ACC NR: AP5028563

6

mogeneities which retard the motion of dislocations. In this work, the influence of the decomposition of the K-state was studied in terms of high temperature strength. The temperature dependence of electrical resistivity was obtained as a function of temperature and heating rate. For each alloy, the resistivity increased initially and at 500°C reached a peak, whereupon it dropped to a minimum (about 700° to 900°C depending on the alloy) and rose again. The drop in resistivity was associated with the decomposition of the K-state. Deformation by compression (60 to 70%) in the temperature interval from -196 to +20°C showed that the decomposition of the K-state was practically independent of deformation temperature. At higher temperatures (between 500° and 1000°C) and at high rates of heating, the decomposition of the K-state was studied by increasing the heating rate to 10⁶ deg/min. The interval for the maximum decomposition was displaced to higher temperatures (300 to 450° higher), depending on the type of alloy. In the K-state region a significant strengthening was also noted when the speed of deformation was increased from 0.03%/min to 0.3%/min, while in the region of K-state decomposition no effect on strength was apparent. For fast heating rates, the rise in strength was maintained at higher temperatures than for slow heating rates. In particular, for Ni-Cr this region was expanded to 700°C, while for the other alloys to 900 or 1000°C. Where the K-state was decomposed at room temperature, no additional strengthening occurred upon pulse heating. Orig. art. has: 4 figures.

SUB CODE: 11/ SUBM DATE: 06Aug64/ ORIG REF: 011/ OTH REF: 003

Card 2/2 *OC*

L 23937-65 ENT(m)/ENP(b)/T/ENP(t) Pa3
ACCESSION NR: AP5001557

IJP(c) JD/HW
S/0185/64/009/012/1371/1373

AUTHOR: Pavlyuk, A. O.; Petrenko, M. S.; Pervakov, V. O.; Khotkevych, V. G.

TITLE: On some peculiarities of the temperature dependence of the increase of the electrical resistivity of the deformed alloy Fe + 50% Ni at low temperatures

SOURCE: Ukrayins'ky fizychnyy zhurnal, v. 9, no. 12, 1964, 1371-1373

TOPIC TAGS: resistivity of deformed alloy, martensitic phase formation, ferrous nickel alloy

ABSTRACT: In the iron-nickel alloy with the nickel content below 40%, martensitic transformation is observed on cooling to a sufficiently low temperature. At higher nickel concentrations, this transformation does not take place. However, it can be expected that deformation and cooling will produce in these alloys local formation of martensitic phase. As an indication of the new phase formation, the electrical resistivity was measured (see L. Kaufman and M. Cohen, Trans. Amer. Inst. Min (Metall.) Eng. 208, 1393 (1956)). Fe + 50% Ni alloy was pre-

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L 23937-65

ACCESSION NR: AP5001557

2
pared in the form of wires of 0.2 mm diam. and pressed between metal plates, and the resistance compared with that of annealed specimens. It was found that in specimens which were deformed and measured at -196 C, the increase of resistivity was noticeably greater than in specimens which were deformed at room temperature and measured at -196 C. This is attributed to local martensitic phase formation. The authors are grateful to Y. L. Mirkin for the Fe-Ni alloy. Orig. art. has: 1 figure

ASSOCIATION: Kharkivs'kyi derzhuniversityet im. O. M. Gor'kogo (Khar'kov State University)

SUBMITTED: 10Jul64

ENCL: 00

SUB CODE: MM

NR REF SOV: 002

OTHER: 007

Card 2/2

PAVLYUK, A.A. [Pavliuk, A.O.]; PERVAKOV, V.A. [Pervakov, V.O.]; KHOTKEVICH,
V.I. [Khotkevych, V.H.]

Effect of an oxygen admixture on the heat capacity of silver. Ukr.
fiz. zhur. 10 no.2:237-238 F '65. (MIRA 18:4)

1. Khar'kovskiy gosudarstvennyy universitet.

POPOVA, N.M., kand.tekhn.nauk; PERVAKOVA, T.P., gidrobiolog

Improving sanitary conditions of the Moskva River. Ger.khoz.Mosk. 33
no.2:29-32 F '59. (MIRA 12:3)
(Moscow--Sewage) (Moskva River--Water--Pollution)

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 12,
p 12 (USSR) 15-57-12-16786

AUTHOR: Pervakova, V. I.

TITLE: The Stratigraphy and Lithology of the Jurassic Rocks
of the L'vov Vpadina (Basin) (K stratigrafii i
litologii yurskikh otlozheniy L'vovskoy vpadiny)

PERIODICAL: Nauchn. zap. L'vovsk. politekhn. in-ta, 1956, Nr 46,
pp 72-81

ABSTRACT: Within the L'vov-Volynia coal basseyn (basin), Jurassic
deposits rest unconformably on rocks of the Carbon-
iferous and the Devonian. At the base of these
Jurassic sediments occur variegated rocks with a
thickness up to 137 m; red, brown, green siltstones,
mudstones, sandstones; and layers of conglomerates and
boulders. The variegated unit is a lagoonal-conti-
nental deposit and is Middle Jurassic in age. Above

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The Stratigraphy and Lithology of the Jurassic Rocks (Cont.) 15-57-12-16786

it occur lithographic and dolomitized limestones and dolomites with lenses of gypsum and anhydrite and with oolitic and pseudo-oolitic limestones of the Upper Jurassic. Rarely, ostracods, foraminifers, and molluscs may be found in these calcareous rocks. The thickness ranges from 60 m to 300 m.

Card 2/2

V. A. Krasheninnikov

PERVALOV, V.G.

Flotation method for separating waste water from oil and oil
products. Trudy VNI no.16:172-194 '58. (MIRA 11:12)
(Sewage—Purification) (Flotation)

ROZIN, B.B., inzh.; P'ICHKOV, L.M., inzh.; PERVAKOV, V.P., inzh.

Using methods of linear programming in planning the charging of steel smelting furnaces. Stal' 23 no.9:845-847 S '63. (MIRA 16:10)

1. Zlatoustovskiy metallurgicheskiy zavod.

JEVTIC, Zivojin, doc., dr.; TRNINIC, Borivoje, dr.; BESAROVIC, Miso, mr.ph.;
PERVAN, Vatroslav, dr.

Our experience with the treatment of hypertension with ismelin.
Med. glasn. 14 no.12:566-568 D '60.

1. Dijagnosticki centar u Sarajevu (Upravnik: dr M. Gajic-Jankovic).

(AMIDINES ther) ANTIHYPERTENSIVE AGENTS ther)

PERVANJE, F.

Chemical Abst.
Vol. 48 No. 3
Feb. 10, 1954
Analytical Chemistry

Oct 1954
A rapid and simple titrimetric method for the determination of vanadium in the presence of chromium, titanium, manganese, and iron. Franc Pervanje. *Kem. Zbornik* 1951, 100-1.--The sample, acidified strongly with H_2SO_4 , is reduced with powd. $FeSO_4$. V^{5+} is reduced to V^{4+} and Cr^{6+} to Cr^{3+} . The $KMnO_4$ is added in slight excess until the soln. retains a slight pink coloration. After 1 min. enough $0.02N$ $FeSO_4$ is added to just destroy the pink color. Diphenylamine soln. (1-3 drops) is added as indicator, and the soln. is titrated with $0.02N$ ferrousulfate until the indicator color changes from violet to green. The method is fairly accurate and rapid. J. Kovtar Leach

8-31-54
JJP

ACC NR: AP6035884

SOURCE CODE: UR/0413/66/000/020/0124/0124

INVENTOR: Badayeva, A. A.; Pervaya, A. S.; Tutov, I. Ye.; Katsnel'son, V. Yu.;
Kuz'mintsev, V. N.; Koloskov, M. M.; Kulinich, V. P.

ORG: none

TITLE: High speed steel. Class 40, No. 187314 [announced by the Central Scientific Research Institute of Technology and Machine Building (Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya); All-Union Scientific Research Tool Institute (Vsesoyuznyy nauchno-issledovatel'skiy instrumental'nyy institut)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 20, 1966, 124

TOPIC TAGS: high speed steel, chromium tungsten molybdenum steel, vanadium containing steel, titanium containing steel, *DUCTILITY*, *TOUGHNESS*

ABSTRACT: This Author Certificate introduces a high-speed steel containing silicon, manganese, chromium, tungsten, molybdenum, vanadium and titanium. To improve the strength, ductility, notch toughness, and oxidation and heat resistance and to reduce carbide heterogeneity, the steel composition is set as follows: 0.75—0.85% carbon, 0.17—0.35% silicon, 0.20—0.40% manganese, 3.5—4.5% chromium, 2.5—3.0% tungsten, 2.5—3.0% molybdenum, 1.9—2.2% vanadium, 0.03—0.08% titanium.

SUB CODE: 11/ SUBM DATE: 05Jun65/
Card 1/1

UDC: 669.14.018.252.3

L 2886-66 FSS-2/EFT(1)/FS(v)-3/FCC/EJA(d)/EJA(h) TT/GS/GW

ACCESSION NR: AT5023607

UR/0000/65/000/000/0381/0387

AUTHOR: Vernov, S. N.; Mel'nikov, V. V.; Savenko, I. A.; Savin, B. I.; Pervaya, T. I.

TITLE: Recording of charged particles of energies of 0.1-10 kev with a spherical electrostatic analyzer

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva. Moscow, 1965. Issledovaniya kosmicheskogo prostranstva (Space research); trudy konferentsii. Moscow, Izd-vo Nauka, 1965, 381-387

TOPIC TAGS: satellite, satellite data storage, particle counter, electron density, ion density/Elektron 2 satellite

ABSTRACT: Identical spherical electrostatic analyzers were used to record positive and negative particles with energies of up to 1 kev on Cosmos-12 and Cosmos-15 and up to 10 kev on Elektron-2. Each analyzer was comprised of a spherical capacitor some 60 mm in diameter, with input apertures leading to plates spaced 12 mm apart, on which a periodic high voltage was programmed so as to allow passage through the annular gap of only particles of a desired energy range. A Faraday cylinder at the

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ACCESSION NR: AT5023607

gap output served as the collector. The input apertures and the Faraday cylinder were furnished with biased grids to eliminate thermal particles and secondary emission, respectively. A diagram of the two analyzers used on Elektron-2 is shown in Fig. 1 of the Enclosure; accumulated charge was converted to binary code. The Cosmos data generally showed that electron flux at the 1-kev level did not exceed $10^7/\text{cm}^2/\text{sec}/\text{kev}$ at night and was only slightly higher by day. A maximum was noted during the southernmost portions of orbit, in a region south of New Zealand, attaining up to $12 \times 10^8/\text{cm}^2/\text{sec}/\text{kev}$. Electron fluxes recorded on Elektron-2 showed strong variations at sunrise and sunset (referred to the satellite); these variations reached values on the order of $10^9/\text{cm}^2/\text{sec}/\text{kev}$. Irregular variations in flux readings correlated with known geomagnetic events observed during the flight. Data show that the satellite was at all times within the magnetosphere. Positive ion flux registered by Elektron-2 in the 0.1-10-kev range did not exceed $5 \times 10^7/\text{cm}^2/\text{sec}$. Orig. art. has: 5 figures and 1 table. [SH]

ASSOCIATION: none

SUBMITTED: 02Sep65

ENCL: 01

SUB CODE: ES, NP

NO REF SOV: 008

OTHER: 003

ATD PRESS: 4109

Card 2/3

L 2886-66

ACCESSION NR: AT5023607

ENCLOSURE: 01

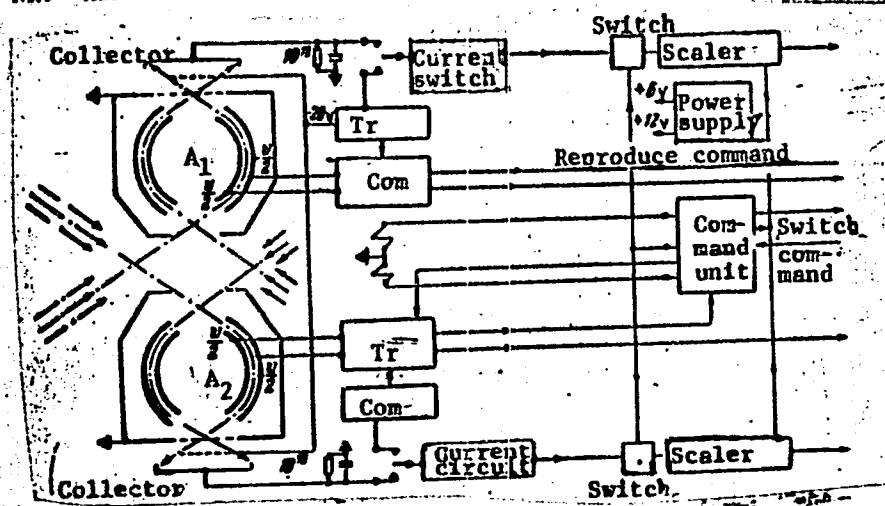


Fig. 1. Spherical particle analyzer on Elektron-2

Tr - High voltage transformers; Com - commutators;
A1 - 0.1-1 kev range; A2 - 1-10 kev range.

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VERNOV, S.N.; SAVENKO, I.A.; SHAVRIN, P.I.; NESTEROV, V.Ye.;
PISARENKO, N.F.; TEL'TSOV, M.V.; PERVAYA, T.I.; YEROFEYEVA, V.N.

Some results of radiometric observations at altitudes of
200 to 400 km. during 1960-1963. Kosm. issl. 2 no.1:136-146
Ja-F '64. (MIRA 17:4)

PERVENTSEY, A., pisatel', ; MDIVANI, G., pisatel', ; KLEBANOV, S.;
BL'SHTREM, A.; ROSTOTSKIY, S., rezhisser; SEGAL, Ya., rezhisser;
BYSTRITSKAYA, L., aktrisa; USHAKOVA, V., aktrisa; PUGOVKIN, Mikh., akter;
TIKHONOV, S., akter; ZAKHARCHENKO, V., akter; GINZBURG, V.,
kino-operator; DUL'TSEV, V., kinc-operator; SVETozAROV, Ya., direktor
kartin; MARON, V., direktor kartin.

We speak to you, radio amateurs! Radio no. 6:3 Je '58. (MIRA 11:7)
(Radio--Receivers and reception)

PERVENTSEV, A.

In Iceland; an excerpt from a book. Tr. from the Russian. p. 18.

Vol. 5, no. 7, 1955

GEOGRAFIIA

Sofiya, Bulgaria

So: Eastern European Accession vol. 5 no. 1 Jan. 1956

PERVOMTSEV, Arkadiy

Always higher and higher. Av.i kosm. 46 no.2:6-9 F '64.
(MIRA 17:3)

PERVENTSEV, Arkadiy

Reflections on the Soviet officer. Voen. vest. 39 no.5:15-19
My '59. (MIRA 12:10)

(Russia--Army--Officers)

PERVINTSEV, Arkadiy.

Supung Hydroelectric Power Station. Sov.mor. 16 no.17:18-19 6 '56.
(Supung Hydroelectric Power Station) (MIRA 9:12)

PERVENTSEV, Arkadiy Alekseyevich, MARTYNOV, Yu., red.; KOROBOVA, L., tekhn. red.

[Put out to sea] Vykhod v okean. [Moskva] Izd-vo TsK VLEKSM "Molodaiia
gvardia," 1958. 133 p. (MIRA 11:9)
(Russia--Navy)

PERVENTSEV, VI.

Mountains call. Sov. voin 43 no.22:37-39 N '61. (MIRA 15:2)
(Mountaineering)

PERVERDIAN, A.M.; DANELIAN, M.G.

Effective spacing of a bisecting series of injection wells used
intraboundary flooding. Azerb. neft. khoz. 37 no.3:19-21 Mr '58.
(Oil field flooding) (MIRA 11:8)

L 11611-66 EMP(t)/ETI IJP(c) JD

ACC NR: AP6031214

SOURCE CODE: RU/0004/65/000/002/0059/0068

AUTHOR: Barosu, Mircea (Graduate chemist; Bucharest); Nastase, Constanta (Engineer; Head researcher; Bucharest); Pervescu, Mariana (Chemical engineer; Timisoara); Tatucu, Stela (Chemical engineer; Timisoara); Sudresan, Sever (Chemical engineer; Timisoara) 5

ORG: [Barosu; Nastase] Laboratory of Electrochemistry, ICPE (Laboratorul de electrochimie la ICPE); [Pervescu; Tatucu; Sudresan] Electro-Banat Factory, Timisoara (Fabrica Electro-Banat)

TITLE: Contribution to the establishment of the utilization conditions of some MnO sub 2 types in manufacturing galvanic batteries

SOURCE: Electrotehnica, no. 2, 1965, 59-68

TOPIC TAGS: battery, depolarization, manganese compound, carbon black

ABSTRACT: The authors studied the effect of changing the C/MnO₂ ratio as well as the use of artificial MnO₂ and carbon black on the activity of depolarizing agents and the electrical characteristics of 3R12 batteries. This led to some suggestions for improvements in the manufacturing technology, which have been tested and have now been introduced in production. The structural analysis of the x-ray was done at the IFB by Doctor R. Grigorovici and R. Manaila. The authors thank them for attention given the analysis and interpretation of the MnO₂ type x-ray structure; Directors of the "Electro-Banat" Factory and Technicians A. Bolog, M. Sociu and C. Butum for assistance given in preparing the industrial phase of the solutions.

Orig. art. has: 20 figures and 5 tables. [Based on authors' Eng. abst.] [JPRS]

SUB CODE: 09 / SUBM DATE: 05Aug64 / ORIG REF: 010 / SOV REF: 003

OTH REF: 009

Cord 1/1 af

6918 26 17

BAROSU, Mircea, chimist diplomat (Bucuresti); NASTASE, Constanta, cercetator principal (Bucuresti); PERVESECU, Mariana, ing. chimist (Timisoara); TATUCU, Stela, ing. chimist (Timisoara); SUDRESAN, Sever, ing. chimist (Timisoara)

Contributions to the determination of the utilization conditions of some MnO_2 types in manufacturing galvanic batteries. Electrotehnica 13 no.2:59-68 F '65.

1. Head of Electrochemical Laboratory of the Research and Electrotechnic Planning Institute (for Barosu). 2. Research and Electrotechnic Planning Institute (for Nastase). 3. "Electro-Banat" Plant, Timisoara (for Pervescu, Tatucu, Sudresan). Submitted August 5, 1964.

PERVETINSKIY, L.N.

Use of graphic plotting in computing leveling nets. Geod.i kart.
no.8:72-75 Ag '57. (MIRA 10:10)

1. Otryad No.23 Sredne-Aziatskogo AGP.
(Triangulation)

PERVENTSEV, Arkadiy Alekseyevich

Geography & Geology

Visit to Iceland Moskva, Sovetskii pisatel' 1952.

9. Monthly List of Russian Accessions, Library of Congress, August 195~~8~~² Unclassified.

PERVENTSEV, Arkadiy

Why do we strive for culture? Starsh.-serzh. no.5:29 My '62.
(MIRA 15:6)

(Military discipline)

PERVENTSEV, Arkadiy

Strength of the people is a mighty force. Av. i kosm. 45 no. 2:
2-5 F '63. (MIRA 16:2)

(Russia—Armed forces)

~~PERVINTSEV~~, Arkady Alekseyevich; PETHOVA, S., redaktor; DANILINA, A.,
~~tekhnicheskiy redaktor~~

[Creative work of millions] Tvorchestvo millionov. Moskva, Gos.
izd-vo polit. lit-ry, 1957. 65 p. (MLRA 10:10)
(Labor and laboring classes)

PERVENTSEV, V1.

In the boiling of the waves. Starsh.-serzh. no. 7:9 J1 '62.
(MIRA 16:6)

(Submarine boats)

PERVEYEV, F. YA

PA 6979

USSR/Chemistry - Ketones
Chemistry - Isomerization

Mar 1948

"Research in the Field of Isomeric Conversion of Ketones and Aldehydes of the Acetylene Series. I.,"
F. Ya. Perveyev, Lab Org Chem, Sci Res Chem Inst,
Leningrad State Order of Lenin U, 5 1/2 pp

"Zhur Obshch Khim" Vol XVIII (LXXX), No 3

Iotsich's reaction used to synthesize 1-phenyl-3-methyl-4-chlor-penten-1-ol-3 and its corresponding oxides, from magnesium-bromium-phenylacetylene and 3-chlor-butanone-2. Isomerization of oxides by zinc chloride produced 1-phenyl-3-methyl-penten-1-cn-4. Explains character of isomerization and equilibrium between radicals. Submitted 10 Feb 1947.

6979

PERVEYEV, F. YA.

PA 8/49Th3

USSR/Chemistry - Rearrangements
Chemistry - Ketones, Acetylenic

Apr 48

"Studies in the Field of Isomer Conversion of Ketones and Aldehydes of the Acetylene Series, II," F. Ya. Perveyev, Lab Org Chem, Chem Inst, Leningrad State U, 8 1/2 pp

"Zhur Obshch Khim" Vol XVIII (LXXX), No 4

2, 5-Dimethyl-6-chloro-3-heptyn-5-ol was obtained by condensation of isopropylacetylene with 3-chloro-2-butanone and converted to the corresponding oxide with powdered potassium hydroxide. The oxide was isomerized with a 20% solution of oxalic acid at 100° to 2, 5-dimethyl-5,4-heptadiene-6-on. This

8/49Th3

USSR/Chemistry - Rearrangements (Contd)

Apr 48

Rearrangement of the hydrocarbons of the type $RC \equiv CCH_2CH_2COR'$ is facilitated by tertiary alkyls and, to a lesser degree, secondary alkyls as substituents of the acetylenic hydrogens. Submitted 10 Feb 1947.

8/49Th3

1:00 PM, P. No.

USSR/Chemistry - Acetylene Series Jul 49
Isomerism

"Research in the Field of the Isomeric Conversion of Ketones and Aldehydes of the Acetylene Series, III" F. Ya. Perveyev, Chair of Structure of Org Compounds, Chem Faculty, Leningrad Ord of Lenin State U imeni A. A. Zhdanov, 6 pp

"Zhur Obshch Khim" Vol XIX, No 7

4-Methyl-5-chloro-pentyn-2-ol-4 was prepared by condensation of methylacetylene with chloroacetone, and its corresponding oxide formed by reacting it with powdered caustic soda. Then, 2-methyl-pentyn-3-ol was derived by action of a 20% solution of oxalic acid on this oxide and dehydration of the alpha-glycol. Primary alkyl radicals, when substituted for hydrogen in acetylene in prototropic systems, had effect of stabilizing enol form. Submitted 26 Jan 48.

2/50225

PERVEYEV, P. Ya.

19 2 5 32

USSR/Chemistry - Acetylene Series Jul 49
Isomerism

"Research in the Field of the Isomeric Conversion of Ketones and Aldehydes of the Acetylene Series IV," P. Ya. Perveyev, Chair of Structure of Organic Compounds, Chem Faculty, Leningrad Ord of Org State U Imeni A. A. Zhdanov, 5² pp

"Zhur Obschh Khim" Vol XIX, No 7

2,5-Dimethyl-6-chloro-hexyn-3-ol-5 (I) was prepared by condensing isopropylacetylene with chloroacetone, and the corresponding oxide of I prepared by reacting it with powdered caustic soda. 2,5-Dimethyl-hexyn-3-ol was then prepared by isomerization of this oxide with a 20% solution of oxalic acid. Submitted 26 Jan 48.

2/50727

PERVEYEV, F. YA.

Chemistry, Organic

Ninetieth anniversary of the theory of chemical structure of organic compounds. Vest. Len. un 6 No. 11, 1951.

Monthly List of Russian Accessions, Library of Congress, September 1952 UNCLASSIFIED.

1. PERVEYEV, F. Ya.
2. USSR (600)
4. Chemistry, Organic
7. Intramolecular reciprocal action of atoms, Vest. Len. un., 7, No. 2, 1952.

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

PERVEEV, F. IA.

Perveev, F. IA., Kudriashova, N. I.- "Interaction of α -oxides of the vinyl acetate series with oxygen-containing and organomagnesium compounds." (p. 1580)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1952, Vol. 22, No. 9

PERVEYEV, P. Ya.

4

(2)

Chemical Abst.
Vol. 48 No. 8
Apr. 25, 1954
Organic Chemistry

Reaction of α -oxides of vinylacetylene series with oxygen-containing compounds and organomagnesium compounds.
P. Ya. Perveyev and N. I. Kudryashova. *J. Gen. Chem.* (U.S.S.R.) 22, 1823-8 (1952) (Engl. translation).—See C.A. 47, 9251a. H. L. H.

PERVEYEV F. YA.

23 122

USSR/Chemistry - Acetylene
Derivatives

Nov 52

"The Reaction of the α -Oxides of the Vinyl Acetylene Series with Oxygen-Containing and Organomagnesium Compounds. II," F. Ya. Perveyev and N. I. Kudryashova, Leningrad State U, Chair of the Structure of Organic Compounds

"Zhur Obshch Khim" Vol 22, No 11, pp 1964-1970

During the reaction of 2-methyl-oxido-1, 2-hexene-5-yne-3 with alcs in the presence of sulfuric and oxalic acids, tertiary monoethers of

glycol were separated out -- derivs of methyl, propyl, n.-butyl, isobutyl and hexyl alcs. During the reaction of 3-methyl-oxido-2, 3-heptene-6-yne-4 with alcs in the presence of the same reagents, monoethers were obtained which were the derivs of methyl, isopropyl, propyl and n.-butyl alcs. During the reaction of 2-methyl-oxido-1, 2-hexene-5-yne-3 and 3-methyl-oxido-2, 3-heptene-6-yne-4 with alcs in the presence of alk catalysts (alcoholates of Na, NaOH, Ba(OH)₂), primary and secondary monoethers resp were separated out. These were derivs of methyl, propyl and n.-butyl alcs. The action of the acid catalysts resulted only in the formation of tertiary monoethers of glycols. But alk catalysts produced a primary monoether for 2-methyl-oxido-1, 2-hexene-5-yne-3 and a secondary one for 3-methyl-oxido-2, 3-heptene-6-yne-4. The rate of formation of monoethers of glycol in the presence of alk catalysts decreases in proportion to the decrease in the acidity of the H in the hydroxyl group of the reacting alc; the rate of formation of the monoether of glycol, in the presence of alk catalysts, drops in accordance with a decrease in the soly in alcohol of the alk catalyst being considered.

23827

PERVETSI, T. YA.

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
Organic Chemistry

4

② Chen

Reaction of α -oxides of vinylacetylene series with oxygen-bearing and organomagnesium compounds. II. P, Ya. Pervetsey and N. I. Kudryashova. *J. Gen. Chem. U.S.S.R.* 22, 2013-18 (1952) (Engl. translation).—See C.A. 47, 10491k. H. L. H.

MF

PERVEYEV, F. Ya.

Chemical Abst.
Vol. 48 No. 5
Mar. 10, 1954
Organic Chemistry

Reaction of α -oxides of the vinylacetylene series with oxygen-bearing and calcium compounds. III. F. Ya. Perveyev and N. I. Kabanov (Leningrad State Univ.). *Zh. Obshchei Khim.* 23, 343-51 (1953); *cl. C.A.* 47, 10491h. —Cleavage of the oxide ring with RMgX occurs at the α -C

atom. To EtMgBr was added 30 g. $CH_2=CHC(CMe)_2$.

$CHMeO$ (I) in Et_2O with cooling, the mixt. let stand overnight, and treated with 30% AcOH, yielding 54% 3-methyl-3-ethyl-6-hepten-4-yn-2-ol, b_p 81-2°, d_4 0.9216, d_{15} 0.9002, n_D^{20} 1.4834, which with cold 3% $KMnO_4$ gave (CO_2H) , and a HO acid, $C_{11}H_{18}O_2$, isolated as the Ca salt. Similarly, $CH_2=$

$CHC(CMe)_2CH_2O$ (II), and EtMgBr gave 66.5% 2-methyl-2-ethyl-5-hexen-3-yn-1-ol, b_p 73-3°, d_4 0.9041, n_D^{20} 1.4859, which with $KMnO_4$ gave a HO acid, $C_9H_{16}O_2$, isolated as the Ca salt. Passage of 40 g. $CH_2=CHC(CMe)_2CH_2O$ into EtMgBr and addn. of 34 g. I gave 20 g. $CH_2=CHC(CMe)_2CH(OH)Me$, b_p 103-4°, d_4 0.9399, d_5 0.9597, n_D^{20} 1.5225, which hydrogenated over Raney Ni to the *sald. analog*, b_p 107-8°, d_4 0.8608, d_{17} 0.8458, n_D^{20} 1.4471. Similarly 40 g. II gave 23 g. $CH_2=CHC(CMe)_2CH(OH)C(C)CCH_3$, b_p 109-10°, d_4 0.9668, d_{20} 0.9476, n_D^{20} 1.5293, hydrogenated to the *sald. analog*, b_p 95-8°, d_{20} 0.8427, n_D^{20} 1.440. The rule of the ring opening with RMgX is explained by the greater pos. charge on the α -C atom of the ring in the above oxides because of the presence of C:C link. G. M. Kosolanoff.

ME
7-27-54

PERVEYEV, F. Ya.

USSR:

✓ Reaction of oxides of the vinylacetylene series with oxygen-bearing and organomagnesium compounds. III. P. Ya. Perveyev and N. I. Kudryashova. *J. Gen. Chem. U.S.S.R.*, 23, 603-6 (1953) (Engl. translation).—See *C.A.* 49, 2566d. H. L. H.

PERVEYEV, F. Ya.

Reaction of hydrogen sulfide with oxides of the acetylene and vinylacetylene series. I. Synthesis of vinyl- and alkylthiophenes. F. Ya. Perveyev and N. I. Kudryashova (Leningrad State Univ.). *Zhur. Obshchei Khim.* 23, 976-80 (1953). The reaction of oxides of the C_2H_2 and $CH_2=CHC\equiv CH$ series with H_2S in the presence of $Ba(OH)_2$ is a general method for the prepn. of vinyl- and alkylthiophenes.

The reaction consists probably of the initial formation of a vicinal thio alc., dehydration of this to an unsatd. thio, and ring closure by addn. of the SH group across the triple bond. H_2S passed into a w. U-agitated mixt. of 20 g. $Ba(OH)_2$ in 100 ml. H_2O with simultaneous addn. of 30 g. 3-methyl-1,2-oxido-5-hexen-3-yne, b_p 50-1°, d_{20} 0.9240, n_D^{20} 1.4780, at such a rate as to keep the temp. below 60°, followed by passage of H_2S 1 hr. longer, acidification with $AcOH$, and extn. with Et_2O , gave 73-5% 2-vinyl-4-methylthiophene, b_p 67-70°, n_D^{20} 1.5580, d_{20} 1.0110, which slowly polymerized in air; it gives a characteristic indophenine reaction with isatin and forms a cryst. product with $Hg(OAc)_2$. Hydrogenation in Et_2O over Raney Ni gave a dihydro deriv., b_p 163-9°, n_D^{20} 1.5081, d_{20} 0.9682, which with $KMnO_4$ gave 4-methyl-2-thiophenecarboxylic acid, m. 120-1°, also obtained on oxidation of the vinyl compd. Similar reaction of 3-methyl-2,3-oxido-6-hepten-4-yne (the H_2S stream was passed in 8 hrs. at 60-70°) gave 17 g. 2-vinyl-4,5-dimethylthiophene, b_p 68-70°, n_D^{20} 1.5545, d_{20} 0.9935; with $Hg(OAc)_2$ this yields a solid, decomp. 250°; with isatin and H_2SO_4 a deep red color is formed. If the synthesis is run at 80-90° the reaction is complete in 2 hrs., with a slightly higher yield, along with tarry by-products. Passage of 20 l. $MeC\equiv CH$ into an $EtMgBr$ soln. over 12 hrs., followed by addn. of 15 g. $EtCOCH_2Cl$ and treatment with 30% $AcOH$, gave 2-ethyl-1-chloro-3-pentyn-2-ol, b_p 75-7°, n_D^{20} 1.4711, d_{20} 1.0571. This with powd. KOH in Et_2O gave 2-ethyl-1,2-oxido-3-pentyn-3-yne, b_p 40-1°, n_D^{20} 1.4435, d_{20} 0.8900, which treated with H_2S as described above at 60-60°, yielded 15 g. (from 25 g. oxide) 2-methyl-4-ethylthiophene, b_p 61-3°, d_{20} 0.9710, n_D^{20} 1.5970, giving a violet color with isatin- H_2SO_4 , and forming a solid with $Hg(OAc)_2$; oxida-

tion with $KMnO_4$ gave an acid, m. 97-9° (cf. Shepard, C.A. 26, 4330). Similarly the Grignard reagent from $MeC\equiv CH$ and $MeCHClAc$ gave 65% 3-methyl-2-chloro-4-hexyn-3-ol, b_p 66-7.5°, n_D^{20} 1.4671, d_{20} 1.0535, yielding with powd. KOH 3-methyl-2,3-oxido-4-hexyne, b_p 43-4°, b_p 50-60°, d_{20} 0.8850, n_D^{20} 1.4410, which with H_2S , as above, at 60-60° gave, from 20 g. oxide, some 8 g. 2,4,5-trimethylthiophene, b_p 162-3°, n_D^{20} 1.5104, d_{20} 0.9730 for a 73% yield, s. i.e. some 10 g. oxide failed to react. At 80-90° the reaction goes to completion in a shorter period. 3-Methyl-2,3-oxido-6-hepten-4-yne, b_p 64-5°, d_{20} 0.9005, n_D^{20} 1.4881.

G. M. Kosolapoff

PERVEYEV, F. Ya.

U S S R .

Reactions of hydrogen sulfide with oxides of the acetylene and vinylacetylene series. I. Synthesis of vinyl and alkyl thiophenes. P. Ya. Perveyev and N. I. Kudryashova. *J. Gen. Chem. U.S.S.R.* 23, 1017-20 (1953) (Engl. translation).—See *C.A.* 48, 3219i. H. L. H.

PERVEYEV, F. Ya.

Reaction of hydrogen sulfide with phenyl acetylene and vinylacetylene series. II. Synthesis of phenylthiophenes. F. Ya. Perveyev and N. I. Kudryashova (Leningrad State Univ.). *Zhur. Obshch. Khim.* 23, 561-71 (1953); cf. *C.A.* 48, 8210i. — PhC_2CMgBr (0.75 mole) in 400 ml. Et_2O treated with 80 g. EtCOCH_2Cl and the mixt. let stand overnight and treated with 30% AcOH yielded 68 g. $\text{PhC}(\text{OH})\text{EtCH}_2\text{Cl}$, b. $140-1^\circ$, n_D^{20} 1.1578, d_4^{20} 1.1067,

which with powd. KOH gave $\text{PhC}(\text{CCMe})\text{CH}_2\text{O}$, b. $111-12^\circ$, n_D^{20} 1.5520, d_4^{20} 1.0112. This (20 g.), 20 g. $\text{Ba}(\text{OH})_2$ and 180 ml. H_2O treated 4 hrs. at 80° with H_2S , acidified with AcOH , and extd. with Et_2O yielded 66.5% *2-phenyl-4-ethylthiophene*, b. $125-0^\circ$, n_D^{20} 1.6115, d_4^{20} 1.0779; with Hg acetate it yields a ppt., m. $194-0^\circ$; with isatin- H_2SO_4 it

gives a violet color. Similarly $\text{PhC}(\text{CCMe})\text{CH}_2\text{O}$, b. $108-9^\circ$, n_D^{20} 1.5552, d_4^{20} 1.0278, gave 54.5% *2-phenyl-4-methylthiophene*, b. $123-4^\circ$, n_D^{20} 1.6290, d_4^{20} 1.1102, m. $10.5-17.5^\circ$, which with Hg acetate yields a salt, m. $171-9^\circ$. Similarly

$\text{PhC}(\text{CCMe})\text{CHMeO}$, b. $121-3^\circ$, n_D^{20} 1.5835, d_4^{20} 1.0220, gave 62.9% *2-phenyl-4,5-dimethylthiophene*, b. $139-40^\circ$, m. $30-1^\circ$, which forms with Hg acetate a salt, m. 240° (decompn.); with isatin- H_2SO_4 it gives a cherry color. (J. M. Kosolapoff.)

PERVEYEV, F.Ye.

~~Addition of ammonia and dihydroamine to oxides of the
 vinylacetylene series. F. Ye. PERVEYEV, N. I. Kudryash-
 ova (A. A. Zhdanov State Univ., Ural). Zhur.
 Obshch. Khim. 23, 1872 (1953); cf. C. A. 47, 10491k.—
 Stirring 200 ml. 33% NH₄OH with 25 g. 2-methyl-1,2-
 oxido-6-hexen-3-yne (I) at room temp. several hrs. gave,
 after concn. and extrn. with Et₂O, 69% CH₃-CH=C(CMe)
 (OH)CH₂NH₂, b_p 91-2°, n_D²⁰ 1.5165, d₄²⁰ 1.0078, which,
 hydrogenated over Raney Ni in MeOH at 123 atm. and
 50-5°, took up about 8 moles H and yielded the satd. analog,
 b_p 60-70°, n_D²⁰ 1.4545, d₄²⁰ 0.8063, whose 1-¹⁴C₂H₅NCO reac-
 tion product, C₈H₁₆O₂N₂, m. 115-16°. Stirring 10 g. 3-
 methyl-2,3-oxido-5-hepten-4-yne with 100 ml. 33% NH₄OH
 8 days gave 43% CH₃-CH=C(CMe)(OH)CH(NH₂)Me, b_p
 97-8°, n_D²⁰ 1.5081, d₄²⁰ 0.8771. CICH₃Ac (80 g.) added to
 0.75 mole BuMgBr over 9 hrs. with cooling gave 80%
 chlorohydrin, C₈H₁₆OCl, b_p 66-7°, n_D²⁰ 1.4600, d₄²⁰ 1.0043,
 yielding with powd. KOH under Et₂O 2-methyl-1,2-oxido-
 hexane, b_p 135-6°, n_D²⁰ 1.4111, d₄²⁰ 0.8304, which, heated
 with 33% NH₄OH in sealed tube 20-5 hrs. at 100°, gave a
 low yield of BuCH₂(OH)CH₂NH₂, b_p 85-6°, n_D²⁰ 1.4540, d₄²⁰
 0.8045 (reaction with 1-C₆H₅NCO gave the urea deriv., m.
 100-10°). I (15 g.) and an aq. soln. of 100 ml. Et₃NH after 46
 hrs. at room temp. gave 10 g. CH₃-CH=C(CMe)(OH)CH₂-
 NEt₃, b_p 82-3°, n_D²⁰ 1.4782, d₄²⁰ 0.8915; after 4 days the yield
 rose to 85.8%. G. M. Kozolapoff~~

PERVEYEV, F. Ya.

USSR/ Chemistry

Card : 1/1

Authors : Perveyev, F. Ya., and Kudryashova, N. I.

Title : Reaction of alpha-oxides of the acetylene series with hydrogen sulfide. Part 3. -

Periodical : Zhur. Ob. Khim., 24, Ed. 6, 1019 - 1025, June 1954

Abstract : The reaction of alpha-oxides of the acetylene series, with hydrogen sulfide, in the presence of $Ba(OH)_2$ led to the synthesis of hydroxyalkylthiophenes: 2-(alpha-oxyisopropyl)-4-methylthiophene, 2-alpha-oxy-secondary-butyl)-4-methylthiophene and 2-(alpha-oxyisopropyl)-4, 5-dimethylthiophene. Dehydration of hydroxyalkylthiophenes with diluted sulfuric acid, results in the formation of vinylthiophenes: 2-isopropyl-4-methylthiophene, 2-(alpha-methylpropenyl)-4-methyl-thiophene and 2-isopropenyl-4, 5-dimethylthiophene. Six references; 1 German since 1885; 2 USSR since 1914. Tables.

Institution : State University, Leningrad

Submitted : January 15, 1954

PERVEYEV, F. Ya.

PERVEYEV, F. Ya.

USSR/Chemistry Isomerization

Card : 1/1 Pub. 151 - 17/33

Authors : Perveev, F. Ya., and Kudryashova, H. I.

Title : Isomerization of alpha-oxides of the acetylene and vinyl acetylene series

Periodical : Zhur. ob. khim, 24/8, 1375 - 1379, August 1954

Abstract : Isomeric conversion of oxides of acetylene and vinyl acetylene series, under the effect of diluted sulfuric acid, was investigated. The products of isomeric conversion of the above mentioned oxides and their chemical properties, are described. Nine references: 8 USSR and 1 USA (1940 - 1953).

Institution : State University, Leningrad

Submitted : February 25, 1954

USSR/Chemistry -- Synthesis

Card 1/1 : Pub. 22 - 24/44

Authors : Perveyev, F. Ya., and Kudryashova, N. I.

Title : Reaction of hydrogen sulfide with oxides of the acetylene and vinylacetylene series (synthesis of vinyl-, alkyl- and phenylthiophenes)

Periodical : Dok. AN SSSR 98/6, 975-978, October 21, 1954

Abstract : The reaction between hydrogen sulfide and oxides of the acetylene and vinylacetylene series was investigated. It was found that those oxides, when reacting with hydrogen sulfide in the presence of barium hydroxide, form alkyl-, vinyl-, phenylthiophenes and other derivatives depending upon the structure of the basic acids. Other compounds, synthesized through the reaction of oxides with hydrogen sulfide, are listed. Thirteen references: 7-USSR; 3-USA and 3-German (1899-1952). Tables.

stitution :

Presented by: Academician I. L. Knunyants, May 23, 1954

PERVESEV, F. Ya.

USSR/ Chemistry - Synthesis

Card 1/1 Pub. 127 - 11/12

Authors : Perveev, F. Ya.

Title : Reaction between α - oxides of acetylene and vinyl-acetylene series and hydrogen-sulfide

Periodical : Vest. Len. un. ser. nat. fiz. khim. 5, 145-161, May 1955

Abstract : An experimental study of the reactions between the α -oxides of acetylene and vinyl-acetylene series and hydrogen sulfide is described. The following reactions were analyzed: vinyl-alkyl-thiophenes and hydrogen-sulfide; alkyl-thiophenes and hydrogen sulfide; alkyl-phenyl-thiophenes and hydrogen sulfide, and thiophene-oxides and hydrogen sulfide. Fifty-four references: 3 British, 13 USA, 18 German, and 20 USSR (1885-1955). Tables.

Institution :

Submitted : January 6, 1955

PERVEYEV, F. Ya.

Investigation in the field of the α -epoxy acetylene and vinylacetylene series. F. Ya. Perveyev. *Vestnik Leningrad Univ.* 10, No. 2, Ser. *Mat., Fiz. i Khim.* No. 1, 173-202 (1955). -- A no. of α -epoxyacetylene and vinylacetylene compounds were prepd. via the chlorohydrins, and the reactions of the epoxy compts. with H₂O, ketones, alcs., NH₃, and amines studied. The general prepn. is $R^1C_1CMgBr + R^2COCHClR^3 \rightarrow RC_1CC(OH)R^2CHClR^3$. The following new chlorohydrins (b.p./mm., n_D^{20} , d_4^{20} , M_n found, M_n calcd., % yield) were prepd.: $HC_1CC(OH)MeCH_2Cl$, 105-6°/704, 1.4074, 0.8, —, —; $Me_2C(OH)C_1CC(OH)MeCH_2Cl$, 115-10°/5, 1.4840, 1.1284, 44.79, 45.06, 65; $Me_2C(OH)C_1CC(OH)MeCH_2Cl$, 105-6°/3, 1.4793, 1.1504 (decampd. on distn.); $CH_3OHC_1CC(OH)MeCH_2Cl$ (decampd. on distn.); $Me_2C(OH)C_1C(OH)MeCH_2Cl$, 105-0°/1.5-2.0, 1.4808, 1.1121, 49.35, 49.67, 48.5. The chlorohydrins with powd. KOH in Et₂O gave the epoxides (b.p./mm., n_D^{20} , d_4^{20} , M_n found, M_n calcd., % yield), of which the following are new: $Me_2C(OH)C_1CCMe_2CH_2O$, 98-9°/11, 1.4622, 0.9680, 33.95, 33.81, 60; $Me_2C(OH)C_1CMe_2CH_2O$, 80-1°/3, 1.4018, 0.9637, 43.05, 43.43, —; $Me_2C(OH)C_1CCMe_2CH_2O$, 81-3°/2, 1.4050, 0.9747, 43.73, 43.43, 92; $C_6H_5(OH)C_1CCMe_2CH_2O$, 101-2°/1.5, 1.4865, 1.0129, 50.21, 50.30, —. Although the epoxides react with H₂O very slowly in the absence of a catalyst, in the presence of a trace of H₂SO₄ the reaction readily occurs, sometimes with much evolution of heat. In contrast to olefin epoxides, disubstituted epoxides of the type $RC_1CCMe_2CH_2O$ hydrolyze more readily than trisubstituted analogs. The following glycols were prepd. by adding with stirring the corresponding epoxide to a 3-fold excess of acidified H₂O, removing the H₂O by vacuum distn., and isolating the glycols either by recryst. or vacuum distn.: $Me_2C_1CC(OH)MeCH_2OH$, m. 69-7° (from C₆H₆); $Me_2CHC_1CC(OH)MeCH_2OH$, m. 66-7° (from MeOH); $Me_2CHC_1CC(OH)MeCH_2OH$, m. 68-9° (from 40% MeOH); $PhC_1CC(OH)MeCH_2OH$, m. 104-5°; $PhC_1CC(OH)MeCH_2OH$, m. 118°; $CH_3CHC_1CC(OH)MeCH_2OH$, m. 48-9°, b. 81-2°; $CH_3CHC_1CC(OH)MeCH_2OH$, m. 29-1°, b. 109-10°.

Ketals were prepd. from $CH_3CHC_1CCMe_2CH_2O$ (I) and $CH_3CHC_1CCMe_2CH_2O$ (II) (cf. C.A. 47, 10018) by adding the epoxide in portions to a mixt. of catalyst (FeCl₃, H₂SO₄, or H₂C₂O₄) and a 3-fold excess of ketone at a rate such that the temp. did not exceed 40°. The ketals yellow on standing in air and explode on heating above 140°. Treatment with 2% H₂SO₄ readily hydrolyzes them to ketenes and glycols; the latter isomerizing under the reaction conditions to β -ketotetrahydrofurans. The following ketals (b.p./mm., d_4^{20} , n_D^{20} , M_n calcd., M_n found, ΔM_n , % yield) are listed: $CH_3CHC_1CCMe_2CH_2O$ - CMe_2O , 51-2°/3, 0.9448, 1.4658, 47.0, 48.5, 1.5, 52; $CH_3CHC_1CCMe_2CH_2O$ - CMe_2O , 71-2°/4, 0.9440, 1.4680,

(C.F.R.)
PM

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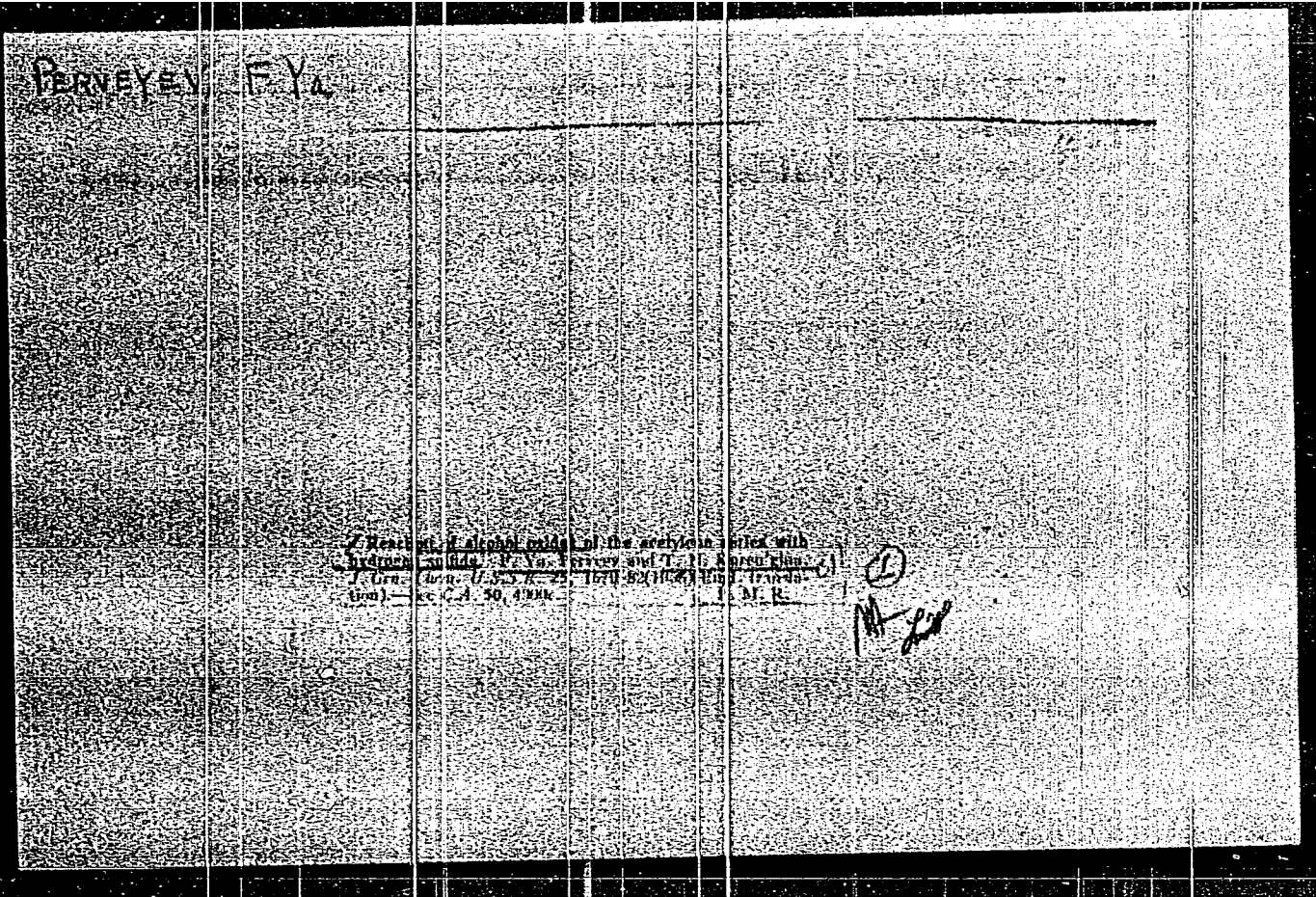
51.5, 53.0, 1.5, 57; $CH_2:CHC:CCMe.CH.O.CMeBu.O$,
 92-3°/5, 0.9378, 1.4675, 60.8, 61.7, 1.1, 35; $CH_2:CHC:C-$
 $CM_2.CHMe.O.CMe_2.O$, 60-1°/5, 0.9225, 1.4699, 62.7,
 64.2, 1.6, 49; $CH_2:CHC:CCMe.CHMe.O.CMeEt.O$, 80-
 1°/5, 0.9390, 1.4750, 56.8, 57.7, 1.9, 33; $CH_2:CHC:C-$
 $CM_2.CHMe.O.CMeBu.O$, 09-103°/10, 0.9391, 1.4739,
 65.5, 66.4, 0.9, 8; $CH_2:CHO:CCMe.CHMe.O.CM-$
 $(C_2H_5)_2O$, 92-92°/3, 0.9115, 1.4850, 65.0, 66.4, 1.4, 21.
 To prep. monoethers from I and II the latter were added to
 a 3-fold excess of an alc. contg. 2-3 drops H_2SO_4 at a rate
 such that the temp. did not rise above 40°, and the mixt.
 then stirred with Na_2CO_3 until colorless. When $H_2C_2O_4$
 is used as the catalyst, I or II is added to the boiling alc.
 contg. 4-5 g. $H_2C_2O_4$. With basic catalysts either 0.4 g.
 Na, 0.8 g. NaOH, or 1 g. Ba(OH)₂ is added to 1 mole of the
 alc. and the mixt. heated to 60-80° and treated with I or II.
 I reacts more readily than II with acidic or basic catalysts.
 The following monoethers (catalyst, b.p./mm., n_D²⁰, d₄²⁰,
 M_R calc., M_R calcd., ΔM_R, % yield) were prepd.:
 $CH_2:CHC:CCMe(OH)CH_2OH$, H_2SO_4 , or $H_2C_2O_4$, 76-

77.4, 1.4850, 0.9840, 40.9, 39.8, 1.1, 81; $CH_2:CHC:C-$
 $CM(OH)CH_2OMe$, Na or NaOH, 69-70°/3, 1.4932,
 0.9644, 41.3, 39.8, 1.5, 72; $CH_2:CHC:CCMe(OPr)CH_2-$
 (OH) , $H_2C_2O_4$, 93-5°/7, 1.4764, 0.9430, 50.4, 49.2, 1.2, 59;
 $CH_2:CHC:CC(OH)MeCH_2OPr$, Na, 91-2°/9, 1.4931,
 0.9290, 50.5, 49.2, 1.3, 63; $CH_2:CHC:CC(OBu)MeCH_2CH-$
 H_2SO_4 , 94-5°/3, 1.4748, 0.9304, 55.0, 53.7, 1.3, 79; CH_2-
 $CHC:CC(OH)MeCH_2OBu$, Na, 89-90°/8, 1.4680, 0.9190,
 55.1, 53.7, 1.4, 24; $CH_2:CHC:CCMe(CH_2CHMe)CH_2-$
 OH , H_2SO_4 , 90-1°/5, 1.4713, 0.9235, 55.2, 53.7, 1.5, 64;
 $CH_2:CHC:CCMe(OC_2H_5)CH_2OH$, H_2SO_4 , 100-1°/3,
 1.4703, 0.9128, 64.3, 62.9, 1.4, 65; $CH_2:CHC:CCMe-$
 $(OMe)CH(OH)Me$, H_2SO_4 , 75-8°/5, 1.4811, 0.9600, 45.4,
 44.3, 1.1, 69-70; $CH_2:CHC:CC(OH)MeCH(OMe)Me$, Na,
 74-8°/8, 1.4759, 0.9543, 45.5, 44.3, 1.2, 30; $CH_2:CHC:C-$
 $CM_2(OPr)CH(OH)Me$, $H_2C_2O_4$, 90-8°/10, 1.4735, 0.9283,
 55.1, 53.8, 1.5, 48; $CH_2:CHC:CCMe(OCMe)CH(OH)-$
 Me , H_2SO_4 or $H_2C_2O_4$, 72-3°/3, 1.4709, 0.9225, 55.2, 53.6,
 1.6, 68; $CH_2:CHC:CCMe(OBu)CH(OH)Me$, H_2SO_4 , 85-
 6°/3, 1.4700, 0.9195, 59.5, 58.3, 1.2, 58. The monoethers
 are colorless mobile liquids which on standing in air in the
 absence of antioxidants yellow and gradually thicken.
 The pure liquids distil in the absence of air with little tar
 formation, but the tarry products which form explode on
 heating above 140°. In all cases the ethers obtained by
 (OVER)

acid catalysis have a higher b.p., d., n_D than the isomeric ethers obtained by basic catalysis. On this basis it is established that tertiary ethers are formed by acid catalysis while basic catalysis gives primary or secondary ethers.

3/3

Hydroxylamines were prepd. from I, II, and BuCMe₂CH₂O by adding the epoxides to a 5-fold excess of 23% NH₂OH (or amine) at room temp. and stirring the mixt. until the layers disappear. The following compds. (b.p./mm., n_D, d₄, MR_D calcd., MR_D found) were prepd.: CH₃CH₂CC(OH)MeCH₂NH₂ (III), 91-2°/4, 1.5165, 1.0078, 26.4, 37.5; CH₃CH₂CC(OH)MeCH₂NHMe, 97-8°/7, 1.5061, 0.9771, 41.03, 42.47; BuC(OH)MeCH₂NH₂ (IV), 85-6°/5, 1.4540, 0.8045, 49.47, 39.29; CH₃CH₂CC(OH)MeCH₂NEt₃, 92-3°/7, 1.4762, 0.8915, 55.99, 57.36. III on hydrogenation at 105 atm. and 50-5° with Raney Ni catalyst gave IV, which forms a 1-C₁₁H₂₁NCO deriv., m. 115-16° (from C₁₁H₂₁). On standing III crystal. (m. 44.5-5.5°). A discussion of the mechanism of cleavage of the epoxide ring and considerable review matter are included. 59 references. Donald B. Miller



PERVBYEV, P.Ya.; KUREN'GINA, T.N.

Interaction of alcohol oxides of the acetylenic series with
hydrogen sulfide. Zhur. ob. khim. 25 no.8:1619-1623 Ag '55.
(MLRA 9:2)

1. Leningradskiy gosudarstvennyy universitet.
(Alcohols) (Thiophene)

PERVEYEV F. Ya.

USSR/ Organic Chemistry - Theoretical and general questions
on organic chemistry

E-1

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11590

Author : Perveyev F. Ya.

Inst : Leningrad University

Title : Isomerization of Alpha Oxides. III

Orig Pub : Vestn. Leningr un-ta, 1956, No 10, 103-115

Abstract : On the basis of literature data and the author's work (Zh. obshch. khimii, 1948, No 18, 479, 686; 1949, No 19, 1303; RZhKhim, 1955, 13883) a study was made of the effect of substituents in alpha-oxides on the nature of rearrangement following opening of the oxide ring. In alkyl substituted alpha-oxides the oxide ring opens mostly on the side of the least hydrogenated C-atom, and most reactive are the disubstituted oxides having the asymmetric structure $RR'CCH_2O$, which are isomerized exclusively to aldehydes; monosubstituted oxides $RCHCH_2O$ yield predominantly aldehydes; disubstituted symmetrical oxides $RCHCH(R')O$ and the trisubstituted undergo rearrangement to ketones. In oxides with mixed radicals (aliphatic and

Card 1/3

PERVEYEV, F. Ya.

Distr: 432c(1)/11/1

Action of hydrogen selenide with α -epoxides and hydroxy-oxides of the acetylene and vinylacetylene series. Synthesis and properties of alkyl, hydroxyalkyl, and vinyl-selenophenes. F. Ya. Perveev and D. N. Glebovskii. *Vestnik Leningrad. Univ.* 11, No. 22, Ser. Fiz. i Khim. No.

4, 135-54 (1956).—CH₂:CH(R) (R = C₁CCMe₂CH₂O) and H₂Se for in CHCl₃ and aq. Ba(OH)₂ under an N atm. 2-ethyl-4-methylselenophene, b.p. 20-30°, n_D²⁰ 1.5518, d₄ 1.3069, and 2-vinyl-4-methylselenophene, b.p. 33°, n_D²⁰ 1.5600, d₄ 1.3300. If the CHCl₃ is omitted, polymeric tars form. If the H₂Se is not diluted with N there is decompn. with reduction of the vinyl compd. to the alkyl. Similarly, R¹R²C(OH)R form 2-hydroxyalkyl-4-methylselenophenes which can be dehydrated to 2-alkenyl compds. The compds. are poisonous, a 4-hr. exposure to the vapors killing mice in a day. The following 2-substituted-4-methylselenophenes are reported (substituent, b.p. (°C./mm.), n_D²⁰, d₄ given): Me₂C(OH), 77-8°/0.5, 1.5530, 1.3433; CH₂:CMe, 72-3°/2, 1.5782; —; EtMeC(OH), 73-4°/0.5, 1.5553, 1.3000; CH₂:CH, 81-2°/0.5, 1.5785, 1.2740; CH₂:C*iso*-Bu, 77-8°/0.5, 1.5530, 1.1847; *iso*-Pr, COH, 90-1°/0.8, 1.5310, 1.2169; 1-cyclopentenyl, 78-80°/0.5, 1.6052, 1.3275; 1-cyclohexenyl, 93°/1, 1.5960, 1.2690. The infrared spectra were obtained and compared to those of the thiophenes. The following bands (cm.⁻¹) are characteristic: 3075-65, cyclic CH; 1575-57, cyclic double bond; 1232-50, not due to hetero atom since it does not alter in going from selenophene to thiophene; 780-50, the thiophene band at 815; 1005-395, 735-25, absent for the unsubstituted thiophene and selenophene but present in the 2,4-substituted compds.; 1610-10, vinyl group; 578 and 395-55, (CH₂:) the presence which is the reason for assigning the structures as 1-allylvinyl compds. and not as 1-methyl-1-alkenyl.

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John Howe Scott

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PERVEYEV, F. Ya.

... synthesis of allyl-, hydroxy-
 alkyl-, and vinylselenophenes. F. Ya. Perveyev, D. I.
 Kudryashova, and D. N. Glebovskiy (State Univ., Leningrad). *Zhur. Obshchei Khim.* 21, 3331-8 (1956). A general
 method of synthesis of selenophenes was developed from
 the addn. of H₂Se to appropriate unsatd. epoxy compds.
 Increase of the length and branching of a side chain on a
 selenophene ring increases the activity of HO group ad-
 jacent to the ring; thus alicyclic substituent in this position
 results in possible isolation of only the corresponding
 unsatd. derivs. Adding 0.5 mole iso-BuMeC(OH)C:CH
 to 1 mole EtMgBr, stirring 1 hr. and adding 50 g. CICH₂Ac
 gave after several hours stirring, followed by treatment with
 80% AcOH, 1-chloro-2,5,7-trimethyl-3-octyne-2,5-diol, b.p.
 103°, n_D²⁰ 1.4790, d₄²⁰ 1.0588 (lit. and d₄²⁰ given for the
 following compds.). Similarly, iso-PrC(OH)C:CH gave
 1-chloro-2,6-dimethyl-5-isopropyl-3-heptyne-2,5-diol, b.p.
 114.5°, 1.4840, 1.0601. These chlorides with powd. KOH
 in Et₂O gave, resp., 2,5,7-trimethyl-1,2-epoxy-3-octyne, b.p.
 30-32°, 1.4611, 0.9531, and 2,6-dimethyl-5-isopropyl-1,4-
 epoxy-3-heptyne-2-ol, b.p. 86°, 1.4618, 0.9505. Into 150 ml.
 H₂O and 10 g. Ba(OH)₂ was passed a stream of H₂Se 10
 min., after which there was added 23 g. 2-methyl-1,2-
 epoxy-5-hexen-3-yne, the H₂Se stream was continued 15
 min., the soln. was treated with AcOH and extd. with Et₂O
 and distd., the 1st fraction obtained being treated with
 acidified H₂O and redistd., yielding on combination of the
 resulting fractions, 6 g. 2-ethyl-4-methylselenophene, b.p. 29-
 30°, 1.5518, 1.3009. If the addn. of the oxide were gradual,
 the yield rose considerably; with AcONa and HgCl₂ this gave
 the chloromercuri deriv., m. 117-18°. If the above oxide

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F. G. Pervozv. N. I. Kuliyashova
 (50 g.) In 25 ml. CHCl₃ is added under above conditions to
 the mixt. at 35°, and if the mixt. is initially blown with N
 and then treated with H₂Se 4 hrs., distill. of the org. layer
 gave 38% 2-methyl-4-methylstyrene, b.p. 32°, 1.5900,
 1.3380. Similarly, 2,3-dimethyl-1,2-epoxy-3-hexyne-6-ol
 gave 45% 2-(1-hydroxyisopropyl)-4-methylstyrene, b.p.
 77-8°, 1.5620, 1.3433; this steam disid. from 5% H₂SO₄
 gave 80% 2-isopropenyl-4-methylstyrene, b.p. 73-3°,
 1.5789. — Similar reaction of H₂Se with 2,5-dimethyl-1,2-
 epoxy-3-heptyn-5-ol gave 45% 2-(1-hydroxyisobutyl)-4-methyl-
 styrene, b.p. 73-4°, 1.5653, 1.3000, which with 5%
 H₂SO₄ gave 80% 2-isobutenyl-4-methylstyrene, b.p. 61-
 2°, 1.5785, 1.3740. H₂Se with 2,5,7-trimethyl-1,2-epoxy-3-
 octyne-5-ol gave 40% 2-(1-methylisobutenyl)-4-methylstyrene,
 b.p. 77-8°, 1.5530, 1.1847. Similarly 2,6-dimethyl-
 5-isopropyl-1,2-epoxy-3-heptyn-5-ol gave 21% 2-(1-hydroxy-
 1-isopropylisobutyl)-4-methylstyrene, b.p. 90-1°, 1.5310,
 1.2169; 2-methyl-4-(1-hydroxycyclohexyl)-1,2-epoxy-3-
 butyne gave 85% 2-cyclohexenyl-4-methylstyrene, b.p.
 78-80°, 1.6052, 1.3215. 2-Methyl-4-(1-hydroxycyclo-
 hexyl)-1,2-epoxy-3-butyne similarly gave 60% 2-cyclo-
 hexenyl-4-methylstyrene, b.p. 93°, 1.5930, 1.2290.

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 2 MAY

G. M. Kosolapoff

PERVEYEV, F.Ya.; VEKSHINA, Ye.M.; SURENKOVA, L.E.

Interreaction of ammonia and amines with α -oxides and hydroxyoxides of acetylenic and vinylacetylenic series. Synthesis of alkyl, -vinyl, -phenylpyrroles and pyrrole-carbinols [with summary in English, p.154]. Vest. Len. un. 12 no.4:134-144 '57.
(Pyrroles) (Methanol) (MIRA 10:4)

LEAVY

Date: 1/23/482c(5)

Reaction of oxides of acetylene and vinylacetylene with ammoniacal solutions. Synthesis of alkyl- and phenylpyrrole (and pyrrolidone) derivatives. E. M. Verkina, and L. N. Surenkova (State Inst. of Org. Chem., USSR Acad. Sci., Moscow, U.S.S.R.). *Vestnik Leningrad Univ.*, 12, No. 4, Ser. Pis. i Khim. No. 1, 134-141 (1967).
 Oxidation of 2-methyl-1,2-epoxy-6-hexen-3-yl (I) with 200 ml. 80% NH₄OH several hrs. gave 60% 1-amino-2-methyl-3-hydroxy-6-hexen-3-yl, b.p. 81-2°, n_D²⁰ 1.5165, d₄²⁰ 1.0078, which hydrogenated over Raney Ni at 55° in MeOH to 1-amino-2-methyl-3-hydroxyhexane (I), b.p. 85-4°, n_D²⁰ 1.4540, d₄²⁰ 0.8045 (1-naphthylurea deriv., m.p. 116-10°). Similarly, 2-methyl-3-hydroxy-6-hepten-4-yl (II) gave 43% 2-amino-3-methyl-3-hydroxy-6-hepten-4-yl, b.p. 87-8°, n_D²⁰ 1.5081, d₄²⁰ 0.9771. 1,1-Butylene diethylene oxide reacted with aq. NH₄OH only in a sealed tube at 100° in 25 hrs. giving a low yield of I. Keeping 10 g. Ia with 5 g. EtNH₂ and 1 ml. H₂O for 48 hrs. at room temp. gave 9 g. 1-ethylamino-2-methyl-5-hexen-3-yl, b.p. 60-1°, n_D²⁰ 1.4804, d₄²⁰ 0.9271, while 1 similarly gave 2-ethylamino-3-methyl-6-hepten-4-yl, b.p. 64-6°, n_D²⁰ 1.4958, d₄²⁰ 0.9139. Similarly, EtMeCHCH(OH)C₂CCl₂CH₂Cl (III) gave 1-ethylamino-3,5,6-trimethyl-3-octyne-2,5-diol, b.p. 114-116°, n_D²⁰ 1.4753, d₄²⁰ 0.8587. Heating PhC₂CCMe₂CF₃ with 80% NH₄OH in a sealed tube 11 hrs. at 140° gave 1-amino-2-methyl-5-phenyl-3-buten-3-ol, m.p. 120-1°. Keeping I with aq. EtNH₂ 3 days gave a moderate yield of the amine, while in 3 days there was formed 83% CH₃CHC₂CH(OH)CH₂NEt₂, b.p. 67-3°, n_D²⁰ 1.4762, d₄²⁰ 0.8915. Heating 10 g. Ia with 10 g. EtNH₂ and 1 ml. H₂O 8 hrs. in a sealed tube at 110° gave 11 g. N-ethyl-2-(2-ethylaminoethyl)-4-methylpyrrolidone, b.p. 103-4°.

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PERVEZ, F. YA.; VIKSHEN, I. M.; SURENKOVA, L. N.

1.490, 0.9192 ($HgCl_2$ deriv., m. 75-7°). Heating slowly
 $CH_3CH_2CCM_2(OH)CH_2NH_2$ with quinoline 14 hrs.
gave *N*-ethyl-2-ethyl-4-methylpyrrole, b. 68°, 1.53-20, 0.9170
($HgCl_2$ deriv., m. 58-60°). Keeping 10 g. $Me_2C(OH)C$

Me_2CH_2O , 8 g. $EtNH_2$, and 1 ml. H_2O in a sealed tube 8
hrs. then heating 10-12 hrs. to 100° gave 8.5 g. *N*-ethyl-1-(1-
hydroxyisopropyl)-4-methylpyrrole, m. 48-8° ($HgCl_2$ deriv.,
m. 60-5°). Similarly, III in 22 hrs. gave *N*-ethyl-1-(1-hy-
droxy-1,3-dimethylbutyl)-4-methylpyrrole, b.p. 106-8°, 1.400,
0.9395 ($HgCl_2$ deriv., m. 128-8°). Siring 13 g. Me_2C

(OH) $C_2CCMe_2CH_2O$ 8 hrs. with 150 ml. 30% NH_4OH then
steam dist. in the presence of 25 g. $Ba(OH)_2$ gave 1 g.
rather unstable 1-(1-hydroxyisopropyl)-4-methylpyrrole, m.
80.5-81° ($HgCl_2$ deriv., m. 90-2°). Similarly was prepd.
1-(1-hydroxy-1-methylpropyl)-4-methylpyrrole, a low-melting
sublimable solid which could not be purified. A similar
steam distn. with $Ba(OH)_2$ converted $PhC_2CCM_2(OH)CH_2$
 NH_2 to 2-phenyl-1-methylpyrrole, m. 152°. Heating 10 g. Ia
with 8 g. Et_3NH and 0.5 ml. H_2O at 100° in a sealed tube 20
hrs. gave 8 g. *N*-ethyl-2-(2-dicylaminoethyl)-4-methylpyrrole,
b.p. 95-9°, 1.4874, 0.9191.

G. M. Kosolapov 2/2

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BLRUYEV, F.Ya.; SHEL'VA, L.M.

Reaction of α -oxides of the acetylenic series with diazo compounds.
Dokl. Akad. Nauk SSSR, no. 13:3173-3177, 1964.

(MIRA 17)

Leningradskiy gosudarstvennyy universitet.

PERVEYEV, P.Ya.; KUZNETSOVA, Ye.M.

Interaction of ammonia and amines with oxides of acetylene and vinylacetylene series. New synthesis of pyrrole. Zhur.ob.khim. 28 no.9:2360-2371 S '58. (MIRA 11:11)

1. Leningradskiy gosudarstvennyy universitet.
(Pyrrole)

5(3)

AUTHORS: Parveyev, F. Ya., Statsevich, V. Ya. SOV/75-29-7-5/53

TITLE: Investigations in the Field of the Dioxides of the Acetylene Series. I (Issledovaniya v oblasti diokisey atsetilenovogo ryada. I)

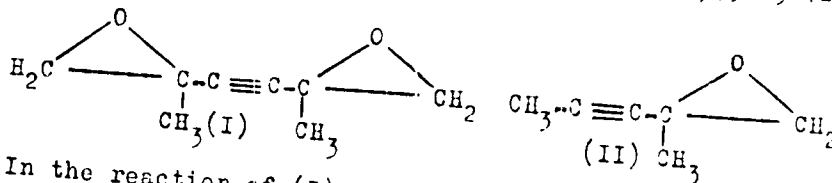
PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 7, pp 2132-2137 (USSR)

ABSTRACT: The purpose of the present paper was the reaction of dioxides of the acetylene series with amines, a comparison of the reactivity of di- and monooxides of this series as well as the solution of the problem as to how the oxide cycle opens under the action of amines, and under which conditions the forming dianino glycols are transformed into the corresponding β -aminopyrrol carbinals. Pyrrole homologs of this structure have hitherto not been described in publications. The dioxides of the acetylene series have equally been little investigated so that the investigation of the opening of the oxide ring under the action of amines in alkaline or acid catalysis was of interest. The dioxide 2,5-dimethyl dioxydo-1,2-5,6-hexyne-3(I) served as initial substance.

Card 1/3

Investigations in the Field of the Dioxides of the Acetylene Series. I

SOV/79-29-7-6/93



In the reaction of (I) with ammonia, methyl- and ethyl amine it was found that this dioxide has a higher reactivity than the monoxides of the acetylene series. Thus, (II) reacts with amines when heated in closed ampoules at 100°, in contrast to (I) which reacts explosion-like even with methylamine (without cooling). By the reaction of methylamine with (I) compound (III) is formed which in the case of longer heating passes into compound (IV). Thus, N-methyl-2-(1-oxy-2-methylamino isopropyl)-4-methyl pyrrole and N-ethyl-2-(1-oxy-2-ethyl-amino isopropyl)-4-methyl pyrrole were synthesized. In the reaction of the dioxide with alcohol it was found that in the alkaline catalysis 1,6-diethoxy-2,5-dimethylhexyne-3-diol-2,5 and in acid catalysis 2,5-diethoxy-2,5-dimethylhexyne-3-diol-1,6 is formed.

Card 2/3

Investigations in the Field of the Dioxides of
the Acetylene Series. I

SOV/75-29-7-1/83

The spectroscopic investigation confirmed the above observations.
There are 6 references, 3 of which are Soviet.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet
(Leningrad State University)

SUBMITTED: July 4, 1958

Card 3/3

5(3)

AUTHORS:

Perveyev, P. Ya., Martinson, E.

SOV/79-29-9-24/76

TITLE:

Reaction of the α -Oxides of the Acetylene Series With Diamines. A New Method of Synthesizing Dipyrroles.

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 9, pp 2922-2927 (USSR)

ABSTRACT:

Following the papers quoted in reference 1, which deal with the synthesis of pyrroles from 1,4-dicarbonyl compounds the author based their new investigations on the oxides mentioned in table 1 and studied their reaction with ethylene-, hexamethylene-, p-phenylene diamine which proceeded according to the given scheme. Pyrrole derivative (IV), a product of the reaction of oxide with an amino group of ethylene diamine, and pyrrole derivative (V), a product of the reaction of oxide with two NH_2 -groups of the diamine resulted from the reaction of oxide (I) with ethylene diamine. The oxides (II) and (III) form the compounds (VI) and (VII) respectively with ethylene diamine. Oxide (I) together with hexamethylene diamine yields pyrrole (VIII). Oxides (I) and (II) with p-phenylene diamine yield the compounds (IX) and (X). Table 2

Card 1/2

Reaction of the α -Oxides of the Acetylene Series SOV/79-29-9-24/76
With Diamines. A New Method of Synthesizing Dipyrroles

shows the constants of the synthesized compounds. The infrared absorption spectra obtained from six compounds prove clearly that the synthesized compounds have a pyrrole structure. Bands from the pyrrole spectrum were found in their spectra (Ref 2). The introduction of a large amount of substituents into the molecule of pyrrole was of course bound to have an effect upon the oscillations of the molecule. This makes clear that some of the bands are shifted and that in several cases double bands occur instead of a single band, or even several bands which do not occur in pyrrole. Already at a first sight a close relationship between the individual bands and the structure of the molecule can be observed (Table 3). There are 3 tables and 2 references, 1 of which is Soviet.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: July 4, 1958

Card 2/2

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SOV/19-30-3-13/73

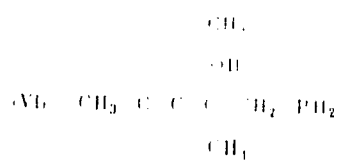
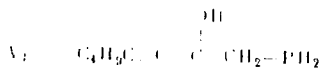
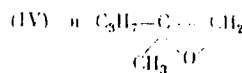
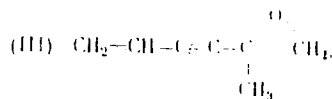
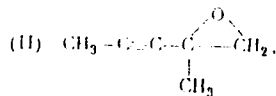
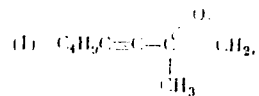
AUTHORS: Perreyev, F. Ya., Rikhter, K.
TITLE: Reaction of Hydrogen Phosphide With Acetylenic α -Oxides
PERIODICAL: Zhurnal obshchey khimii, 1950, Vol 30, Nr 3, pp 784-789 (USSR)

ABSTRACT: Acetylenic oxides (I)-(IV) in reaction with monosodium phosphine gave new acetylenic hydroxyphosphines. 2-methyl-1, 3-epoxy-3-oxyne (I) stirred for 80 hr with NaPH_2 gave 1-phosphinyl-2-methyl-2-hydroxy-3-oxyne (V, yield 73%, bp $64-65^\circ\text{C}$ at 0.5 mm; n_D^{20} 1.4948, d_4^{20} 0.9360). Similarly, 2-methyl-1,2-epoxy-3-pentyne (II) gave in 46 hr 1-phosphinyl-2-methyl-2-hydroxy-3-pentyne (VI, yield 73% bp $50-51^\circ\text{C}$ at 1 mm, n_D^{20} 1.5063, d_4^{20} 0.9380). The above phosphines were mobile liquids with the characteristic phosphine odor; they were readily soluble in methanol, ethyl acetate, ethyl ether, but were insoluble in water.

Card 1/4

Reaction of Hydrogen Phosphide With
Acetylenic α -Oxides

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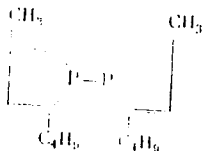
Card 2/4

Reaction of Hydrogen Phosphide With
Acetylenic α -Oxides

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2-methyl-1,2-epoxy-5-hexen-3-yne (III) reacted readily with NaPH_2 but the reaction product polymerized completely. 2-methyl-1,3-epoxypentane (IV) in 50 hr stirring with NaPH_2 gave only traces of 2-methyl-2-hydroxy-pentyl phosphine. IR spectra of the hydroxy-phosphines taken with IKS-11 spectrograph showed the characteristic frequency of the P-H bond ($2270\text{-}2440\text{ cm}^{-1}$). Dehydration of V and VI with diethylethylenediamine gave products with bp 140° C (1 mm) and 78° C (0.5 mm), respectively; the structure, according to their elemental composition, molecular weight, spectral analysis, and chemical properties should correspond to the formula:



Card 3/4

Reaction of Hydrogen Phosphide With
Acetylenic α -Oxides

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SOV/79-30-3-13/69

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ASSOCIATION: Leningrad State University (Leningradskiy gosudarstvennyy
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SUBMITTED: July 6, 1959

Card 4/4

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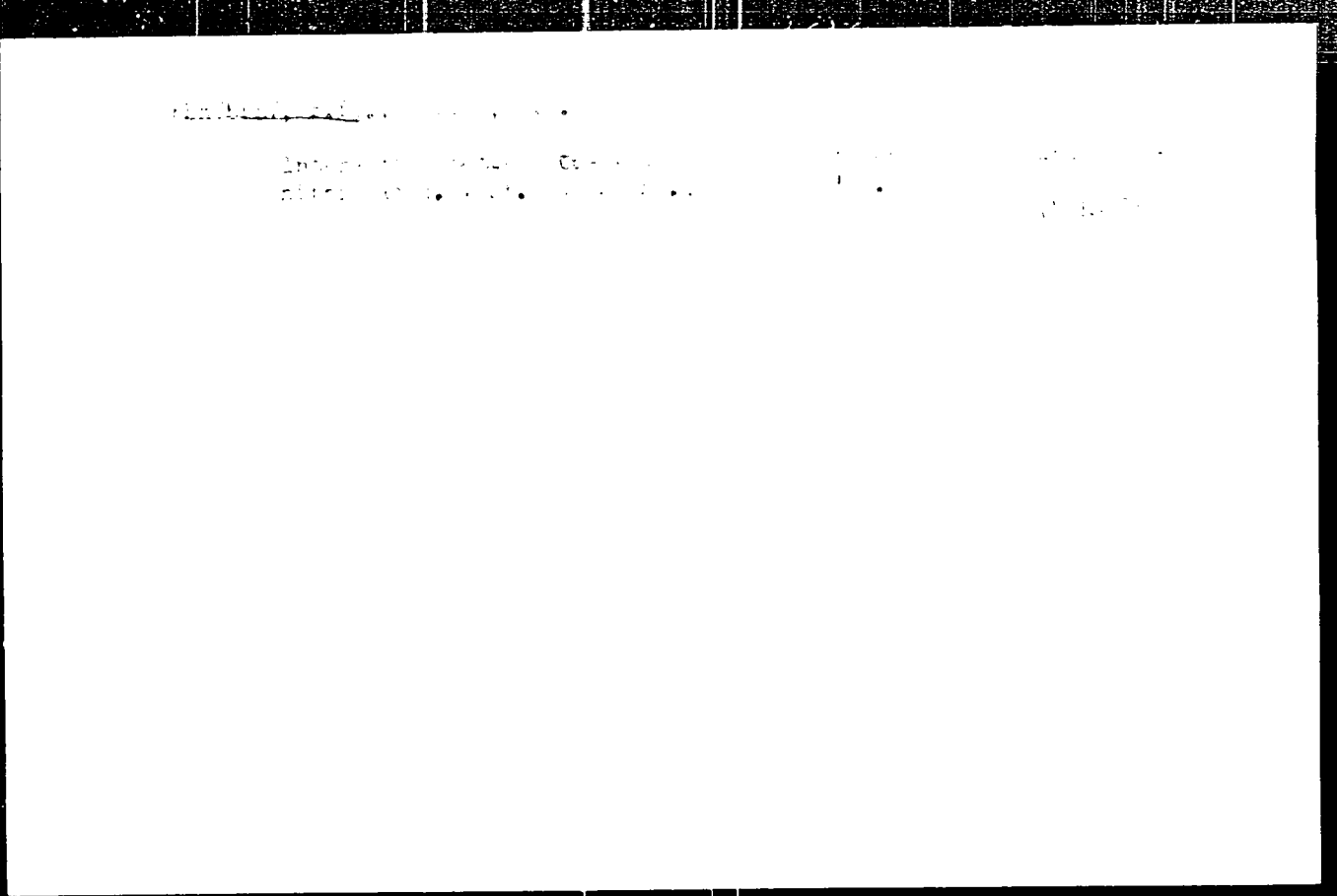
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