

(3)

SOV/23-59-2-1/8

AUTHORS: Kirret, O., Candidate of the Technical Sciences; Eisenz, J. (Eyzen, Yu.I.); and Val'dek, R. (Val'dek, R.G.), Candidate of Technical Sciences

TITLE: Chemical Composition and Qualities of the Lighter Fraction of Tunnel Oven Oil Shale Gas-Benzine

PERIODICAL: Izvestiya Akademii nauk Estonskoy SSR, Seriya tekhnicheskikh i fiziko-matematicheskikh nauk, 1959, Nr 2, pp 71-77 (USSR)

ABSTRACT: For the definition of individual hydrocarbons of benzine, chromatographic absorptional analysis and a narrow-ranged fractioning were carried out, whereby the elementary composition of single fractions were determined. In the lighter fractions (boiling ranges 25-70°C and 70-95°C) of tunnel oven gas-benzine, the following individual hydrocarbons were found: pentene 1, n-pentane, pentene-2, cyclopentene, cyclopentadiene, cyclopentane, hexene-1, hexene-3, hexene-2, n-hexane, 2,3-dimethylpentene-1, 5-methylhexene-2, 2-ethylpentene-1, 3-ethylpentane, heptene-1,

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Chemical Composition and Qualities of the Lighter Fraction of Tunnel Oven Oil Shale Gas-Benzine

and heptene-3. The chromatographic analysis showed that the fraction 95-130°C contains naphthene-paraffins - 20%, cycle olefines together with aliphatic olefines - 30-35%, and diolefines - 15-20%, as to the rest, the data are lacking. In the narrow-ranged fractions of saturated hydrocarbons of benzine (with the boiling ranges of 95-130°C), the following hydrocarbons occur: C_7H_{16} , C_7H_{14} (cyclic combination), C_8H_{18} , and C_9H_{20} . The narrow-ranged fractions of unsaturated hydrocarbons of the same benzine (boiling ranges 95-130°C) contain hydrocarbons - C_7H_{14} and C_8H_{16} . There are 2 graphs, 7 tables and 2 references; and 2 Soviet references, 1 of which is in Estonian.

Card 2/2

KIRRET, Oskar Georgiyevich; KARIK, H., red.; KASEMETS, O., tekhn.
red.

[Chemical textile fibers] Keemilised tekstiilkiudained. Tallinn,
Eent Riiklik Kirjastus, 1961. 229 p. [In Estonian] (MIRA 15:1)
(Textile fibers, Synthetic)

KIRRET, O.; KÜLLIK, E.

Identification of natural and synthetic fibers by the gas chromatographic method. Izv. Akad. Nauk SSSR. Ser. fiz.-mat. i tekhn. nauk 13 no.1:15-21 '64 (MIRA 18:1)

1. Academy of Sciences of the Estonian S.S.R., Institute of Chemistry. 2. Corresponding Member of the Academy of Sciences of the Estonian S.S.R. (for Kirret).

EYZEN, Yu. [Eisen, J.]; KIRRET, O.; EYZEN, O. [Eisen, O.], kand. khim. nauk

Relative retention periods for hydrocarbons under gas-liquid chromatographic analysis. Izv. AN Est. SSR. Ser. fiz.-mat. i tekhn. nauk 13 no.1:22-25 '64 (MIRA 18:1)

1. Institut khimii AN Estonskoy SSR. 2. Chlen-korrespondent AN Estonskoy SSR (for Kirret).

KIRRET, O.; EYZEN, O. [Eisen, O.], kand.tekhn.nauk; KUDRYAVTSEVA, L., kand.
khim.nauk; RANG, S., kand.khim.nauk

Adsorptivity of some hydrocarbons in chromatographic operations
on silica gel. Izv. AN Est. SSR, Ser. fiz.-mat. i tekhn.nauk
no.4:267-274 '64. (MIRA 18:4)

1. Institut khimii AN Estonskoy SSR. 2. Chlen-korrespondent
AN Estonskoy SSR (for Kirret).

FOMINA, Aleksandra Sergeyevna; POBUI . Lind.
DEGTEREVA, Zinaida Aleksandrovna; KIRRET, O., red.;
SKVORTSOVA, A., red.

[Nature of the kerogen of Baltic oil shale kukersite and
its chemical properties as raw material] Priroda kerogena
Pribaltiiskogo goriuchego slantsa-kukersita i ego khimi-
cheskie syr'evye kachestva. Tallinn, AN Estonskoi SSR,
1965. 212 p. (MIRA 18:6)

1. Chlen-korrespondent AN Estonskoy SSR (for Kirret).
2. Redaktersko-izdatel'skiy sovet AN SSSR (for Skvortsova).

KIRS, J.

"Polymorphic transition in thallium-and-tin activated ammonium-iodide phosphors."

p. 178 (Uurimused. Trudy) No. 6, 1957
Tartu, Estonia

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4,
April 1958

ACCESSION NR: AP4035366

Z/0034/64/000/005/0379/0379

AUTHOR: Kirs, M. (Engineer, Candidate of sciences); Beran, M. (Graduate chemist);
Caletka, R. (Graduate chemist); Havelka, S. (Engineer, Candidate of sciences)

TITLE: Method of extractive separation of uranium, plutonium and zirconium

SOURCE: Hutnicke listy, no. 5, 1964, 379

TOPIC TAGS: extractive separation, uranium, plutonium, zirconium, nitrate,
nitric acid, masking agent, polyphenol, hydroxyl group, carbonyl group, sulfon
group, oxalic acid

ABSTRACT: The invention relates to a method of extractive separation of uranium,
plutonium and zirconium in the form of nitrates from aqueous solutions of nitric
acid with organic solvents. To the aqueous solution of the nitrates of the
separated elements and nitric acid are added, as masking agents, polyphenols
containing at least two hydroxyl groups in positions 1,2 on the benzene ring or
in positions 1,8 on the naphthalene structure, and at least one more hydroxyl,
carbonyl or sulfon group in any other position. This yields a more effective
masking of the zirconium, while the extraction of plutonium is not impaired.

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ACCESSION NR: AF4035366

With the use of the same concentrations of masking agents, the procedure according to the invention yields 3-10 times more effective separation of the above-mentioned elements than with the oxalic acid heretofore used.

ASSOCIATION: none

SUBMITTED: 23Mar63

DATE ACQ: 20May64

ENCL: 00

SUB CODE: GC

NO REF SOV: 000

OTHER: 000

Card 2/2

KIRS, V.I., starshiy nauchnyy sotrudnik

Under the flags of five countries. Znan. to pratsia no. 2:8-10
F '61. (MIRA 14:5)

1. Ukrainskaya akademiya sel'skokhozyaystvennykh nauk.
(Farm equipment—Exhibitions) (Electric instruments—Exhibitions)

KIRS, Ya. Ya. Cand Phys-Math Sci -- (diss) "~~The~~ Effect of High
Pressure on ^{up spectra of} the Emission Spectra of Certain Crystalline Phosphoruses."
Tartu, 1957. 111 pp 20 cm. (Tartu State Univ), 100 copies
(KL, 25-57, 108)

- 91 -

KIRS, Ya. Ya.

48-5-46/56

SUBJECT: USSR/Luminescence

AUTHOR: Kirs Ya. Ya.

TITLE: ~~Effect of Manifold Compression on Emission Spectra of Some~~
Crystallophosphors (Vliyaniye vsestoronnego sshatiya na spektry
izlucheniya nekotorykh kristallofosforov)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1957,
Vol 21, #5, pp 754-755 (USSR)

ABSTRACT: The effect of a change in the constant of a lattice, which is
caused by a compression from all sides, on emission spectra
of some crystallophosphors was investigated. Spectral and lu-
minosity characteristics of crystallophosphors subjected to a
hydrostatic pressure of up to 2,000 atm. were studied.

The manifold compression causes emission spectra of alkali-
haloid crystallophosphors activated by tin to shift towards
shorter wavelengths. The magnitude of this shift rises with
increase of compressibility and lattice constant of the bases
of phosphors. This shift amounts to 2 m μ in NaBr-Sn and 7 m μ
in RbJ-Sn at an applied pressure of 2,000 atm.

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48-5-46/56

TITLE: Effect of Manifold Compression on Emission Spectra of Some
Crystallophosphors (Vliyaniye vsestoronnego sshatiya na spektry
izlucheniya nekotorykh kristallofosforov)

The rise of temperature leads also to the shift of emission
bands towards shorter wavelengths in phosphors NaBr-Sn; KCl-Sn
and KBr-Sn.

The report was followed by a discussion.

One Russian reference is cited.

INSTITUTION: Institute of Physics and Astronomy of the Estonian Academy
of Sciences.

PRESENTED BY:

SUBMITTED: No date indicated

AVAILABLE: At the Library of Congress.

Card 2/2

23598

S/081/61/000/008/002/017
B110/B202

24,3500 (1137,1138 only)
AUTHORS: Kirs, Ya, Ya., Laysaar, A. I.

TITLE: Effect of high pressure on emission and excitation spectra of alkali halide phosphors activated by means of europium

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 8, 1961, 31, abstract 85232 (8B232) (Tr. In-ta fiz. i astron. AN EstSSR, 1960, no. 12, 42 - 48)

TEXT: The authors studied the effect of hydrostatic pressure (6,000 atm) on the emission and excitation spectra of the phosphors NaCl (Eu); KCl (Eu); KBr (Eu) and KI (Eu). The results obtained prove the mutual approach of the energy levels of the luminescence centers with a decrease of the interionic distances in these phosphors. [Abstracter's note: Complete translation.]

Card 1/1

S/613/61/000/014/006/019
D207/D303

AUTHOR: Kirs, Ya. Ya.

TITLE: The effect of pressure on the excitation and emission spectra of ZnS:Cu phosphors

SOURCE: Akademiya nauk Estonskoy SSR. Institut fiziki i astronomii. Trudy. No. 14, 1961. Issledovaniya po lyuminestsentsii, 135-140

TEXT: The author investigated the effect of hydrostatic pressure up to 6000 atm on the excitation and emission spectra of ZnS:Cu phosphors with three activator concentrations: 10^{-6} , 10^{-4} and 10^{-3} g/g. The first of these phosphors emitted blue band I luminescence, the second green band I and the third green band II. The phosphors were supplied by K.-S. K. Rebane; they were prepared by heating ZnS + 2% NaCl + activator in air at 1100°C. Increase of pressure shifted the excitation and emission bands towards shorter wavelengths. The shift of the excitation spectra was 5×10^{-6} eV/atm.

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S/613/61/000/014/006/019
D207/D303

The effect of pressure ...

The shift of the emission spectra was 10^{-5} eV/atm for ZnS with 10^{-6} g/g Cu, and 6×10^{-6} eV/atm for ZnS with 10^{-4} and 10^{-3} g/g Cu. All these shifts indicate broadening of the energy gap and of the energy spectrum (ground and excited states of luminescence centers) of the phosphor. The emission-spectrum shift of ZnS with blue band I (10^{-6} g/g Cu) was nearly twice the shift of the phosphors with green bands I and II (10^{-4} and 10^{-3} g/g Cu). This indicates that the blue and green luminescence centers are different (the former are probably of vacancy type. Acknowledgment is made to N. D. Bazileva, a student of the Tartu State University, who took part in the experimental work. There are 2 figures and 10 references: 5 Soviet-bloc and 5 non-Soviet-bloc. The references to the English-language publications read as follows: R. Bowers and N. Melamed, Phys. Rev., 99, 1781 (1955); W. Piper, D. Marple and P. Johnson, Phys. Rev., 110, 323, (1958); J. Birman, Phys. Rev., 109, 810 (1958) and J. Phys. Chem. Solids, 8, 35 (1959).

Card 2/3

The effect of pressure ...

S/613/61/000/014/006/019
D207/D303

SUBMITTED: July 19, 1960

Card 3/3

20833

9.4160 (3201, 2804 ONLY)
24.3500 (1137, 1138, 1395)

S/048/61/025/003/021/047
B104/B214

AUTHORS: Kirs, Ya. Ya. and Laysaar, A. I.

TITLE: Effect of uniform compression on the spectral characteristics of phosphors

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, v. 25, no. 3, 1961, 366-368

TEXT: This paper was read at the Ninth Conference on Luminescence (Crystal Phosphors) held in Kiyev from June 20 to June 25, 1960. The effect of uniform compression on the spectral characteristics of alkali halide crystals activated by copper and manganese was investigated. Fig. 1 shows the spectra of phosphors activated by copper at a pressure of 1 and 6,000 atm. It is seen that at a pressure of 6,000 atm the bands are shifted in the direction of short wavelengths. The shift amounts to 0.6 ± 0.005 ev compared to 1 atm and increases linearly with pressure. Under similar conditions, phosphors activated by manganese show a shift of the band in the direction of larger wavelengths. Thus, on KCl-Mn, Pb under 4,700 atm pressure a shift of the emission band by 0.015 ev was

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Effect of uniform compression on the ...

S/048/61/025/003/021/047

B104/B214

observed in the direction of larger wavelengths. The explanation of the shift in the direction of shorter wavelengths in the emission bands of phosphors activated by copper, mercury, and similar ions is that the pressure causes a redistribution of luminescence centers in the excited states. The theory of Johnson and Williams is discussed in this connection. All the phosphors investigated by the authors are set up in a series according to the behavior of their spectral characteristics. The conclusion is drawn that the distance between the ions in the luminescence centers of phosphors with the same activator differs considerably less than the corresponding lattice constants do. Thus, the structure of the centers is determined by its activator ions. It is shown further that the excitation spectrum of ZnS-Cu phosphor is shifted by 0.03 ev in the direction of shorter wavelengths at a pressure of 6,000 atm. This is connected with the increase of the forbidden band width occurring due to the decrease in the distance between the ions. There are 1 figure and 6 references: 5 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: Johnson P., Williams F., Phys. Rev., 95, 69 (1954).

Card 2/3

S/613/62/000/018/002/013
E039/E120

AUTHORS: Laysaar, A.I., and Kirs, Ya.Ya.

TITLE: The effect of hydrostatic pressure on the emission spectra of zinc sulphide phosphors

SOURCE: Akademiya nauk Estonskoy SSR. Institut fiziki i astronomii. Trudy. no.18, 1962. Issledovaniya po lyuminestsentsii. 23-35.

TEXT: This is a continuation of previous work on alkali halides by the same authors and is devoted to a study of pressure stimulated displacement of the emission spectra of ZnS activated by Cu, Ag, Au, Mn and Eu. For pressures up to 6000 atm the emission bands of ZnS, ZnS-Cu, ZnS-Ag and ZnS-Au are displaced to shorter wavelengths. In the case of ZnS this displacement is 0.065 (\pm 0.005) eV, and for ZnS-Cu (10^{-4} g/g eq.) it is 0.0045 (\pm 0.005) eV, i.e. 11×10^{-6} eV/atm and 8×10^{-6} eV/atm, respectively. Similarly the displacement for ZnS-Ag and ZnS-Au at 6000 atm is 0.035 (\pm 0.005) and 0.03 (\pm 0.005) eV respectively. With ZnS-Mn and ZnS-Eu the displacement at 6000 atm is 0.02 (\pm 0.005) eV to the longwavelength side. The dependence of

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The effect of hydrostatic pressure... S/613/62/000/018/002/013
E039/E120

intensity on pressure is also investigated, the change of intensity with pressure being given by:

$$\Delta I_p = \left| \frac{I_{p,\lambda}}{I_{p,\max}} - \frac{I_{p_0,\lambda}}{I_{p_0,\max}} \right|$$

where $I_{p,\lambda}/I_{p,\max}$ and $I_{p_0,\lambda}/I_{p_0,\max}$ are the intensities for a wavelength λ at a pressure p and at atmospheric pressure related to the intensity at the band maximum at these pressures. A possible mechanism for these shifts is discussed, based on the characteristics of the electron transitions, the distribution of impurity centres and their interaction with the surrounding medium. Ethyl ether is used as a hydraulic fluid. There are 3 figures. ✓

SUBMITTED: December 28, 1961

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S/613/62/000/018/003/013
E039/E120


AUTHORS: Kirs, Ya.Ya., and Niylik, A.I.

TITLE: Luminescence of alkali halide phosphors activated with europium

SOURCE: Akademiya nauk Estonskoy SSR. Institut fiziki i astronomii. Trudy, no.18. 1962. Issledovaniya po lyuminestsentsii. 36-50

TEXT: The characteristics of europium activated alkali halide phosphors are investigated, and in particular, their recombination luminescence is studied. Powdered phosphors are used, prepared by melting the alkali halide salts with EuCl_3 . The concentration of activator is 0.1 mole %. A few experiments were performed on single crystals. The excitation and emission spectra of NaCl-Eu, KCl-Eu, KBr-Eu and KI-Eu are shown to be characteristic for divalent europium. Excitation in the long and short wavelength regions gives the same emission spectra, hence all excitation bands correspond with electron transitions in the luminescent centres. The temperature dependence of the NaCl-Eu emission spectrum is also examined. The half-width of the 420 m μ band increases rather

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Luminescence of alkali halide ...

S/613/62/000/018/003/013
E039/E120

faster than with \sqrt{T} (where T is the absolute temperature) over the range -160°C to $+400^{\circ}\text{C}$. At 400°C all investigated phosphors have not less than 25% of their intensity at 20°C . The optical flash, thermoluminescence and absorption spectra of some of these phosphors after X-irradiation are examined. The thermoluminescence curves show peaks connected with the release of electrons from M and F centres occurring at 340 and 430°K respectively. In the case of KCl the optical flash spectrum coincides with the F absorption band. Additional absorption in the F and V bands occurs after X-irradiation of NaCl-Eu (λ_{max} at 465 and 223 m μ respectively). Sensitized luminescence of manganese in NaCl-Eu is observed with a resonance mechanism of energy transfer. There are 7 figures.

SUBMITTED: December 19, 1961

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ACCESSION NR: AT4020795

S/2613/63/000/023/0061/0066

AUTHORS: Kirs, Ya. Ya.; Laysaar, A. I.

TITLE: Origin of the blue emission bands of ZnS-Cu phosphors and nonactivated zinc sulfide

SOURCE: AN EstSSR. Institut fiziki i astronomii. Trudy*, no. 23, 1963. Issledovaniya po lyuminesentsii (Research in luminescence), 61-66

TOPIC TAGS: luminescence, phosphor, ZnS phosphor, ZnS-Cu phosphor, zinc sulfide luminescence, ZnS phosphor blue emission

ABSTRACT: The authors note that the question of the origin of the emission bands of ZnS base phosphors remains quite unclear. For luminescence centers corresponding to the same emission bands, different models are proposed by different authors. Certain hypotheses are discussed. In the authors' previous work (A. I. Laysaar, Ya. Ya. Kirs, Trudy* IFA AN ESSR, no. 18, 23, 1962), the effect of high pressure on a large number of zinc sulfide phosphors was analyzed. A particular study was made of the ZnS-Cu phosphor ($1 \cdot 10^{-4}$ g/g), which has a green emission band, and of non-activated zinc sulfide with its blue luminescence. This paper reports on the results of an investigation of the effect of pressure on the blue band of the ZnS-Cu phosphor ($1.5 \cdot 10^{-4}$ g/g). The experimental

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ACCESSION NR: AT4020795

technique was discussed in the work referred to above. The authors provide a new argument in favor of the view that the origin of these bands (that is, in the ZnS-Cu phosphor and in the non-activated zinc sulfide) is different. It is also established that the shift in the emission bands of ZnS-base phosphors, caused by doping them with small amounts of cadmium sulfide, is the result, in the main, of the deformation of the ZnS lattice by the cadmium ions. "The authors express their sincere gratitude to Doctor G. Ortman (H. Ortman), at whose personal suggestion the present work was carried out." Orig. art. has: 1 figure.

ASSOCIATION: Institut fiziki i astronomii AN EstSSR (Institute of Physics and Astronomy, AN EstSSR)

SUBMITTED: 19Jan63

DATE ACQ: 07Apr64

ENCL: 00

SUB CODE: PH

NO REF SOV: 002

OTHER: 006

2/2

Card

L 47171-66 EWT(1)/EWT(m)/T/EWP(t)/ETI IJP(c) JD

ACC NR: AP6032236

SOURCE CODE: UR/0023/66/000/003/0354/0359

48

AUTHOR: Aydla, A.--Aidla, A.; Kirs, Ya.--Kirs, J.

47 B

ORG: Institute of Physics and Astronomy, Academy of Sciences, Estonian SSR (Institut fizika i astronomii Akademii nauk Estonskoy SSR)

TITLE: Thermally and optically stimulated phenomena in cadmium sulfide single crystals

SOURCE: AN EstSSR. Izvestiya. Seriya fiziko-matematicheskikh i tekhnicheskikh nauk, no. 3, 1966, 354-359

TOPIC TAGS: cadmium sulfide, semiconductor, thermoluminescence, thermoelectricity, optical flash, photoconductivity, photoelectricity, thermal stimulation, optical stimulation

ABSTRACT: Thermoluminescence, thermoelectric current, optical flash, and optical quenching of photoconductivity and luminescence were experimentally investigated in a number of CdS single crystals grown from the vapor phase by sublimation in an argon stream. Two brands of CdS were used as starting materials: one specified "for semiconductors" with a 3×10^{-5} g/g silver activator content, the other "for phosphors," to which silver was introduced in the process of growing. The excitation was effected by the 365-nm mercury line. In the case of thermal stimulation, the heating rate was 0.3 degrees/sec. Optical flash and photoconductivity quenching were stimu-

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L 47171-66

ACC NR: AP6032236

of photoconductivity, both being the result of the release of holes from the response centers. It is possible that IR radiation releases holes directly from the red luminescence centers, since the optical flash was observed only in crystals having at least a weak red luminescence band. Generally, the authors hold that the luminescence of CdS can arise from the release of both trapped electrons and holes. The authors thank A. Ruut for growing the crystal specimens. Orig. art. has: 6 figures. [FP]

SUB CODE: 20/ SUBM DATE: 24Nov65/ ORIG REF: 004/ OTH REF: 016/ ATD PRESS:
5090

Crd 3/3 blg

MIRA, V.1.

Method for selecting identical semiconductor thermistors from a
general lot. Priborostroenie no.5:24-25 My '64.

(MIRA 17:6)

KIRSA, V.I., inzhener.

DFO-UNDIM recording traction dynamometer. Sel'khoz mashina no.11:
17-19 N '56. (MIRA 9:12)

1. Ukrainskiy nauchno-issledovatel'skiy institut mekhanizatsii
sel'skogo khozyaystva.
(Dynamometer)

KIRSA, V.I., inzhener.

Friction-type infinitely variable transmission as a basis for
the computing mechanism of various devices. Sel'khoz Mashina no.7:8-10
J1 '57. (MLPA 10:8)

1. UNIIMESKH.

(Counting devices)

KIRSA, V.I., Cand Tech Sci—(diss) "Selection and study of a rational
type of traction dynamometer for ^{tests} ~~the testing~~ of tractors and agricultural
machines in KTS *VA 000000000000*." Kiev, 1958. 27 p. with drawings
Min of Agr USSR. Ukrainian Acad of Agr Sci, 100 copies (IL,26-53,110)

-71-

KIRSA, V.I.,; PAVLENKO, V.A.; KHOMENKO, M.S.

New measuring instruments. Mekh. sil'. hosp 12 no.11:27-38
N '61. (MIRA 14:11)

1. Ukrainskiy nauchno-issledovatel'skiy institut ~~metallurgicheskoy~~
elektrifikatsii sel'skogo khozyaystva.
(Measuring instruments)

L 3982-66

ACCESSION NR: AP5022361

UR/0115/65/000/007/0058/0060
681.116.2

AUTHOR: Kirsa, V. I.; Korol'kevich, V. I.

TITLE: A transistorized electronic tachometer

SOURCE: Izmeritel'naya tekhnika, no. 7, 1965, 58-60

TOPIC TAGS: tachometer, transistorized circuit, electronic measurement

ABSTRACT: The authors describe an electronic transistorized tachometer developed at the Laboratory of Measuring Technology, Ukrainian Affiliate of the State All-Union Technological Scientific Research Institute for the Repair and Utilization of Tractors and Agricultural Machinery. The instrument is designed for measuring the number of revolutions of the camshaft on a fuel pump. This tachometer has five measurement ranges: 0-50r; 0-16.7r; 16.7r-25r; 25r-33.3r and 33.3r-50r radians per second. The first range is a scanning range for deciding the limits of measurement required, after which the instrument is set to the appropriate one of the other four ranges for more accurate determination of the number of revolutions. A schematic diagram of the instrument is given and the principles of operation and design.

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L 3982-66

ACCESSION NR: AP5022861

factors are discussed briefly. The entire instrument together with the power supply is mounted in a metal case 220 x 150 x 90 mm in size. Zero set, bridge balance control, range switch, power switch and meter are mounted on the front panel of the device. The instrument is connected to the pickup by a flexible cable. This arrangement makes it possible to take readings in hard to reach places. Orig. art. has: 1 figure.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: PR, IE

NO REF SOV: 000

OTHER: 000

PC

Card 2/2

KIRSA, V. S.

137-58-4-8664

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 335 (USSR)

AUTHORS: Ugol'nikov, N.A., Kirsa, V.S.

TITLE: Photocolorimetric Method of Determining Cobalt in Steels (Fotokolorimetriceskii metod opredeleniya kobal'ta v stalyakh)

PERIODICAL: Tr. Tomskogo un-ta, 1957, Vol 145, pp 63-66

ABSTRACT: A photocolorimetric method of determining Co in steels containing 0.1-1.3% Co and up to 20% Ni, based on diantipyrimethane (I) in the presence of NH_4CNS , has been developed. Determination is performed in 7-mm dishes with an orange light filter. Chloroform is the neutral solution used. The effect of Fe is eliminated by the introduction of NaF. The following, when present, do not inhibit the determination: Ni, Cr, Mn^{2+} , and V^{4+} . The following do inhibit: Mo^{4+} , Mo^{6+} , and V^{5+} . 0.1-0.25 g steel is dissolved in H_2SO_4 (1:2) and acidified by HNO_3 . The solution is boiled and transferred to a 100-cc flask. An aliquot part (10 cc) is transferred to a separating funnel, 1.5 cc 20% NH_4CNS and Na F is added until the color changes to bright yellow, and 2 cc chloroform and 1 cc of I are shaken until the chloroform layer takes on a blue color. Colorimetry is performed after it has been allowed to stand. The relative error is 0.1-2.6%.

K.K.

Card 1/1

1. Cobalt - Determination 2. Colorimetry - Applications

Chair of Analytical Chemistry, Tomsk State Univ.

CA KIRSANINA, YE. F.

111

Biochemical changes in grafts of the potato family.
M. G. Gribinski, K. P. Kirsanina, and L. A. Lyukova
(Univ. Lvov, Poland). *Biotekhnika* 13, 42-3(1950).--
Citric acid accumulates in the leaves of tobacco grafted on
tomato, whereas ascorbic acid, carbohydrates, and total
protein decrease. When the thorn apple is grafted on tomato,
the oxalic acid content increases at the expense of malic
and citric acids. There is a slight increase of catalase in
the leaves of grafted plants. Such biochem. changes are
characteristic of aging organisms. Grafted plants often
possess a shorter life span. H. Priestley

KIRSANINA, Ye.F.; VOLKOVA, V.A.; MOZOVA, A.N.

Effect of trace elements on the development of Avotoklaster
in the meadow Chernozem soils of the Gorno-Altai Autonomous
Province. Izv. Alt. otd. Geog. ob-va SSSR no.5:141 '65.
(MIRA 18:12)

1. Gorno-Altayskiy pedagogicheskiy institut.

USSR / Pharmacology and Toxicology--Medicinal Plants V-5

Abs Jour: Ref Zhur-Biol, No 23, 1958, 107349

Author : Kirsanina, Ye. F.

Inst : Gorno-Altayskiy State Pedagogical Institute

Title : Some Data on the Biochemistry of the Black Mountain Ash (Preliminary Report)

Orig Pub: Uch. zap. Gorno-Altayskiy gos. ped. in-t, 1957, vyp. 2, 265-268

Abstract: The fruits of the black mountain ash contain sugars and are rich in vitamins C and P. In the process of maturing, their acidity and tanning contents decrease and the vitamin contents increase. The study of the fruits, leaves, and seeds showed the absence of alkaloids in them.

Card 1/1

22

KIRSANINA, Ye.F., kand.biolog.nauk

Summer work of students on the farm. Biol.v shkole no.3:39-43
My-Je '59. (MIRA 12:9)

1. Gorno-Altayskiy pedagogicheskiy institut. Iz opyta Shebalinskoy
sredney shkoly Gorno-Altayskoy avtonomnoy oblasti.
(Shebalino District--Agriculture--Study and teaching)

KIRSANINA, Ye.F.; VOLKOVA, V.A.

Some data on the distribution of Azotobacter in soils of the Gorno-Altai Autonomous Province. Mikrobiologiya 29 no. 4:551-554 JI-Ag '60. (MIRA 13:10)

1. Gorno-Altayskiy pedagogicheskiy institut.
(AZOTOBACTER) (GORNO-ALTAI AUTONOMOUS PRIVINCE)

KIRSANOV A.

BATUTINA, N., insh.; SHUVALOV, A., insh.; KIRSANOV, A., insh.

Large-block construction in Chelyabinsk. Stroitel' no.11:2-4
N 57. (MIRA 10:12)

(Chelyabinsk--Apartment houses)

KIRSANOV, A.

SMIRNOV, S.; KIRSANOV, A.; HUDAKOV, N.; MILYUCHIKHIN, A.

Machine mends stockings. Prom.koop. no.6:11 Je '57. (MLRA 10:7)
(Sewing machines)

NIKOLAYEV, V.; KIRSANOV, A.

The Moscow conference on problems in the theory and practice
of building communism. Vop. ekon. no.5:153-155 My '63.
(MIRA 16:6)

(Moscow—Communist Party of the Soviet Union—
Party work)

(Moscow—Industrial organization—Congresses)

KIRSANOV, A.F.(Kolonna)

~~SECRET~~
Experiences in giving continued training to nurses. Med.sestra
no.7:22 J1 '55. (MLRA 8:9)
(NURSING PROFESSION
qualifications, raising)

KSANTOPULO, Ya.F.; KOTLYARSKIY, D.I.; IGNATOV, V.A.; ALKINA, E.Kh.; inzh.;
SMIRNOV, Yu.A.; inzh.; KUNITSINA, T.I., inzh.; IGNATOVA, H.T., inzh.;
KIRSANOV, A.I., elektromekhanik; MOLODTSOV, N.A., inzh.; ROD'KO, G.V.

Discussion of two articles "Stamping apparatus for signaling, central control and block systems," and "Periods for testing relays used in signaling, central control and block systems." Avtom., telem. i svyaz' n.12:35-36 D '57. (MIRA 10:12)

1. Nachal'nik Adzhikabul'skoy distantzii signalizatsii i svyazi Azerbaydzhanskoy dorogi (for Ksantopulo). 2. Starshiy elektromekhanik Moskovskoy distantzii signalizatsii i svyazi Oktyabr'skoy dorogi (for Kotlyarskiy). 3. Ayaguzskayadistantziya signalizatsii i svyazi Turkestan-Sibirskoy dorogi (for Alkina, Smirnov, Kunitsyna, Ignatova). 4. Zaveduyushchiy postom dispetcherskoy tsentralizatsii Ayaguzskoy distantzii signalizatsii i svyazi Turkestan-Sibirskoy dorogi (for Ignatov). 5. Krasnolimanskaya distantziya signalizatsii i svyazi Donetskoy dorogi (for Kirsanov). 6. Moskovskaya distantziya signalizatsii i svyazi Gor'kovskoy dorogi (for Molodtsov). 7. Zamestitel' nachal'nika sluzhby signalizatsii i svyazi Orenburgskoy dorogi (for Rod'ko).

(Railroads--Signaling)

MARAMZIN, A.V.; KIRSANOV, A.I.; ILLARIONOVA, T.M.; YEFIMOV, Z.N.

Temperature conditions of a shaft during air drilling in frozen
ground. Trudy VITR no.3:70-84 '61. (MIRA 15:7)

(Boring--Cold weather conditions)
(Frozen ground)

KIRSANOV, A.I.; YEFIMOV, R.I.

Air shot drilling in frozen ground. Trudy VITR no.3:85-94
'61. (MIRA 15:7)
(Boring—Cold weather conditions)
(Frozen ground)

KIRSANOV, A.I.; ILLARIONOVA, T.M.; MEYERSON, Ye.G., nauchn. red.;
IVANOVA, A.G., tekhn. red.

[Air drilling of exploratory wells in permafrost] Burenie
geologorazvedochnykh skvazhin s proizvodkoi vozdukhom v
mnogoletnei merzloste. Moskva, M-vo geologii i okhrany neдр
SSSR, 1962. 49 p. (MIRA 17:4)

ALESKOVSKIY, V.B.; KIRSANOV, A.I.; LIBINA, R.I.

Use of frothers in air drilling. Trudy VITR no.5:41-49 '62.
(MIRA 15:9)

(Drilling fluids)

ILLARIONOVA, T.M.; KIRSANOV, A.I.

Ways of increasing the depth of air drilling with a high static
water level in the hole. Trudy VITR no.5:50-57 '62.

(MIRA 15:9)

(Boring)

ASHIMOV, M.A.; KIRSANOV, A.I.; NEFEDOV, V.P.

Using azolyat-A as frothing agent in drilling with air-blast.
Azerb.khim.shur. no.6:11-15 '63. (MIRA 17:3)

TUSHINSKAYA, M.M.; KIRSANOV, A.I.

Hypothyreosis developing against a background of a neurosis of neurasthenic type with manifestations involving the autonomic nervous system. Probl. endokr. gormonoter. 9 no.4: 88-90 J1-Ag'63 (MIRA 17:1)

1. Iz kafedry fakul'tetskoy terapii (zav. - prof. T.S. Istamnova) I Leningradskogo meditsinskogo instituta imeni Pavlova.

ILLARTONOVA, T.M.; KIRSANOV, A.I.; KRAYNOV, S.V., red.

[New developments in air drilling techniques abroad]
Novoe v zarubezhnoi tekhnike dlia bureniia s produvkoii
vozdukhom. Moskva, Izd-vo "Nedra," 1964. 52 p.
(MIRA 17:5)

FILATOV, Boris Semenovich; MAKURIN, Nikolay Stepanovich;
ABRAMSON, Mikhail Grigor'yevich; KIRSANOV, Arkadiy
Ivanovich; ISAYEVA, V.V., ved. red.

[Air drilling of exploratory holes] Burenie geologorazve-
dochnykh skvazhin s proizvodkoi vozdukhom. [By] B.S.Filatov
i dr. Moskva, Nedra, 1964. 247 p. (MIRA 17:9)

ILLARIONOVA, T.M.; KIRSANOV, A.I.

Producing local circulation of well waters with compressed air.
Razved. i okh. nedr 30 no.4:20-25 Ap 64.

(MIRA 17:12)

i. Vsesoyuznyy nauchno-issledovatel'sk y Institut metodiki i
tekhniki razvedki Gosudarstvennogo geo opticheskogo komiteta SSSR.

POTEMKIN, K.N.; GREBNEV, S.K. Prinsipali uchastiye: KIRSANOV, A.K.;
BACHEVER, R.V.; IL'CHENKO, R.L.; POLESHKO, Ye.S.; KISTINA, A.I.

Quantitative determination of magnetite by a gravimetric
magnetic method. Zhur. prikl. khim. 36 no.5: 981-988 My '63.
(MIRA 16:8)

(Magnetite) (Magetochemistry)

KIRSANOV, A. M.

Tobacco Industry

First Leningrad Tobacco Factory in past and present. Tatak 14, No. 1, 1953.

Monthly List of Russian Accessions, Library of Congress
June 1953. UNCL.

KIRSANOV, A. N. , Cand of Tech Sci -- (diss) "Influence of the design of
length
pellet crown on the ~~longitudinal~~ of a passage." Moscow, 1957, 15 pp
(Moscow Geological Prospecting Institute im S. Ordzhonikidze), 100 copies
(KL, 30-57, 110)

А. М. КИРСАНОВ
KIRSANOV, A.M.

Efficient design chilled-shot crown drill. Rasved. 1 okh. nedr 23
no.6:19-24 Je '57. (MIRA 11:2)

1. Moskovskiy geologorazvedochnyy institut im. S. Ordzhonikidze.
(Rock drills)

KIRSANOV, A.N.

Mechanical destruction of rocks using steel shot. Trudy WGR I 31:
40-48 '57. (MIRA 11:6)

(Rock-drills)

ZINENKO, V.P.; KIRSANOV, A.N.; MAKEYEV, V.I., red. izd-va;
IYERUSALIMSKAYA, Ye.S., tekhn. red.

[Experimental measurements of the power consumed in core
drilling of test holes] Eksperimental'nye izmereniya moshch-
nosti, zatrachivaemoi pri kolonkovom burenii razvedochnykh
skvazhin. Moskva, Gosgeoltekhizdat, 1961. 48 p.

(MIRA 15:11)

(Core drilling) (Electric power)

VOLKOV, S.A.; ZINENKO, V.P.; KIRSANOV, A.N.

Power of the drive of diamond drill rigs. Razved. i okh. nedr.
28 no.7:28-31 J1 '62. (MIRA 15:8)

1. Moskovskiy geologorazvedochnyy institut.
(Boring machinery—Electric driving)

PAL'YANOV, F.F.; SHTEYNBERG, A.M.; Primali uchastiye: ZINENKO,
V.P.; KIRSANOV, A.N.; KULICHIKHIN, N.I., prof., red.

[Drilling holes; for the specialty "Hydrogeology and
engineering geology" in prospecting and mining institutes
and departments] Burenie skvazhin; dlia spetsial'nosti
"Gidrogeologiya i inzhenernaia geologiya geologorazvedoch-
nykh gornyykh institutov i fakul'tetov. Moskva, Nedra,
1964. 354 p. (MIRA 17:12)

KIRSANOV, A.P.

KANAYEV, Ya.I., inshener; KIRSANOV, A.P., inshener.

Practices of construction management through the shop system. *Biul. stroi. tekhn.* 14 no.4:5-6 Ap '57. (MLRA 10:6)

1. Trest Gremyachinskugol'
(Construction industry)

KIRSANOV, A.S.

Ezhamkul Chrome Leather Factory is an enterprise of socialist
labor. Kosh.-obuv. prom. 6 no.9:6-8 S '64. (MR 17112)

KROPACHEVA, A.A.; DERKACH, G.I.; ZHURAVLEVA, L.P.; SAZONOV, N.V.;
KIRSANOV, A.V.

N-diethylenediamidophosphonyl-N-arylurea. Zhur.ob.khim. 32
no.5:1540-1542 My '62. (MIRA 15:5)
(Urea)

KIRSANOV, Aleksey Vasil'yevich; DEMENT'YEV, V.A., red.; GUZHANOVA,
T.N., mladshiy red.; GERASIMOVA, Ye.S., tekhn.red.

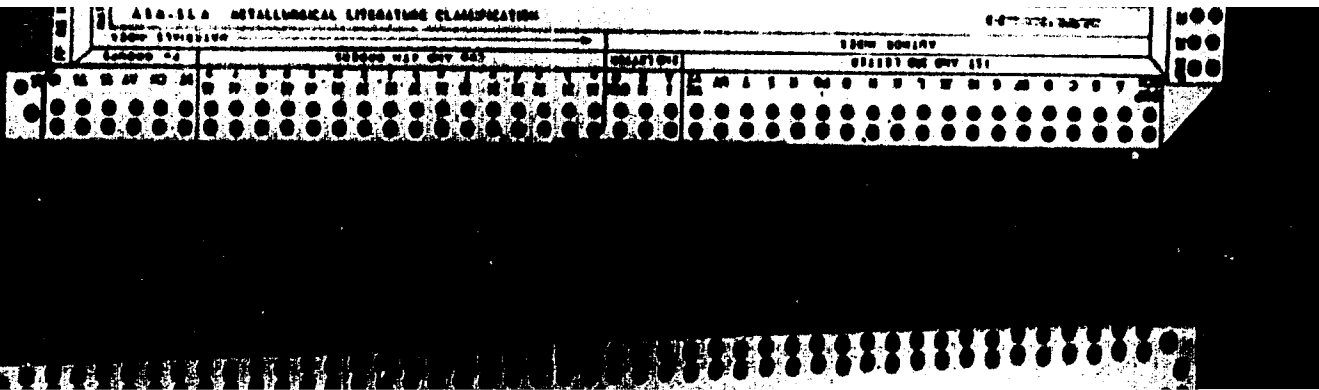
[True face of the "American way of life"] "Amerikanskii
obraz zhizni" bez prikras. Moskva, Ekonomizdat, 1963. 143 p.
(MIRA 16:10)

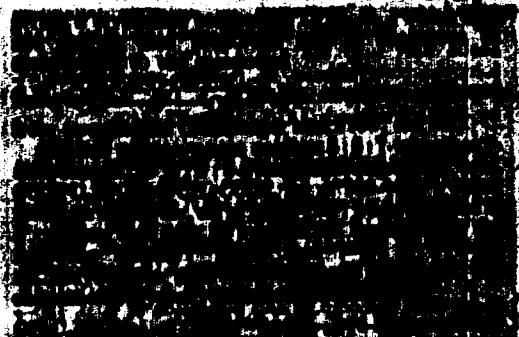
(United States--Economic conditions)
(United States--Social conditions)

TIMASHKOVA, Ol'ga Kondrat'yevna; KIRSANOV, A.V., otv. red.; BYKOV,
I.K., red. izd-va; GOLUBEV, S.P., tekhn. red.

[Sweden under the rule of the Social Democrats; a study of
their postwar economic and social policy] Shvedskaya sotsial-
demokratiya u vlasti; ocherk poslevoennoi ekonomicheskoi i
sotsial'noi politiki. Moskva, Izd-vo Akad. nauk SSSR, 1962.
141 p. (MIRA 15:9)

(Sweden--Economic conditions)

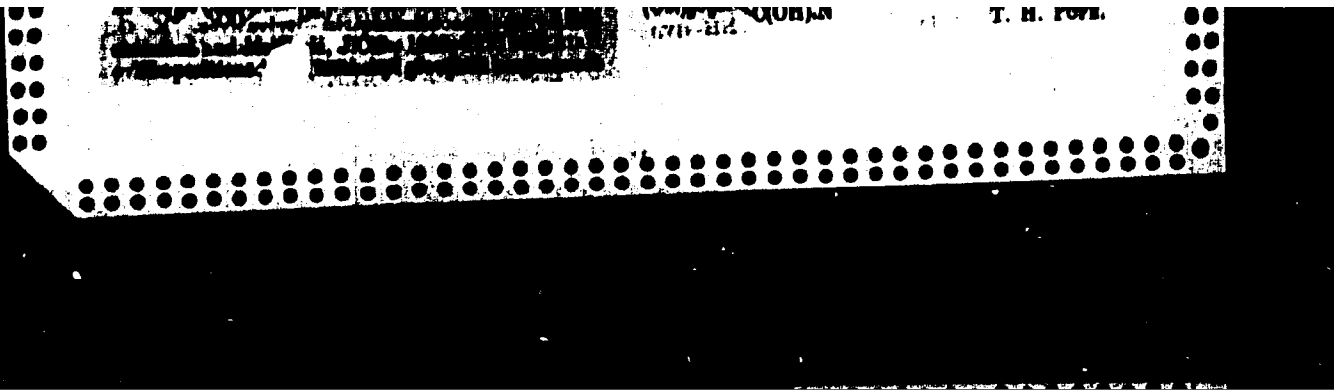




shown by the fact that hirsutin yields 5:8-dihydroxy-
4-methylbenzoic acid when fused with potassium
hydroxide. Hirsutin may be coupled with either one
of the isomers of a diamine salt, the orange-red
compound $C_{12}H_{10}O_2N_2Ph$, decomposes at about 200° ,
and the chlorine compound $C_{12}H_9ClO_2N_2Ph$ dyes
blue-black both tests. In the formation of the second
series of compounds, it is possible either that the
second dimethylamino group enters the pyrene ring of
the ferrocene nucleus or that a hydrogen is found
after reaction of the pyrene ring. *Amicetopyric*,
 $C_{12}H_{11}O_2N_2 + 2H_2O$, m. p. (decomp.) 224° (anhydrous),
forms a diacid salt, $C_{12}H_{11}O_4N_2 + 2H_2O$, decomposing
about 180° onwards.
The action of acetone on 5:8:7-trimethoxyferrocene

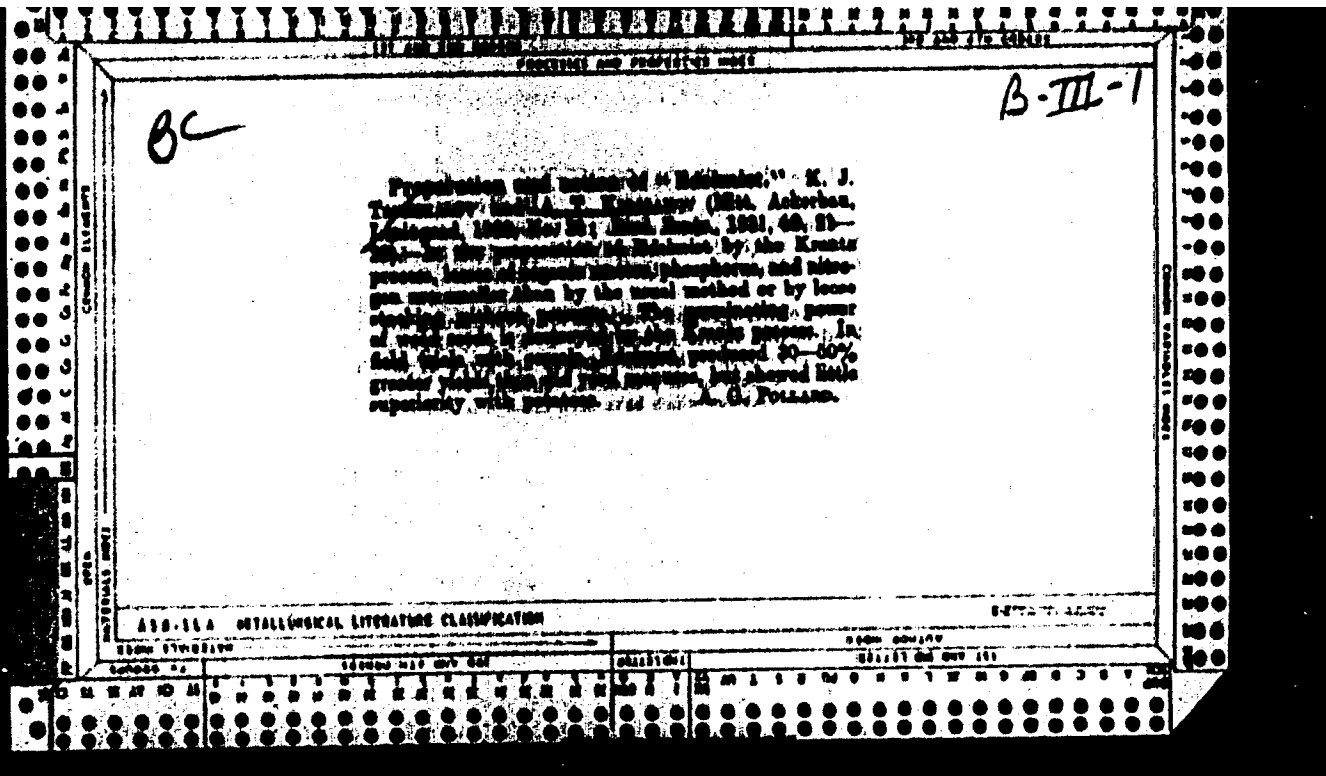
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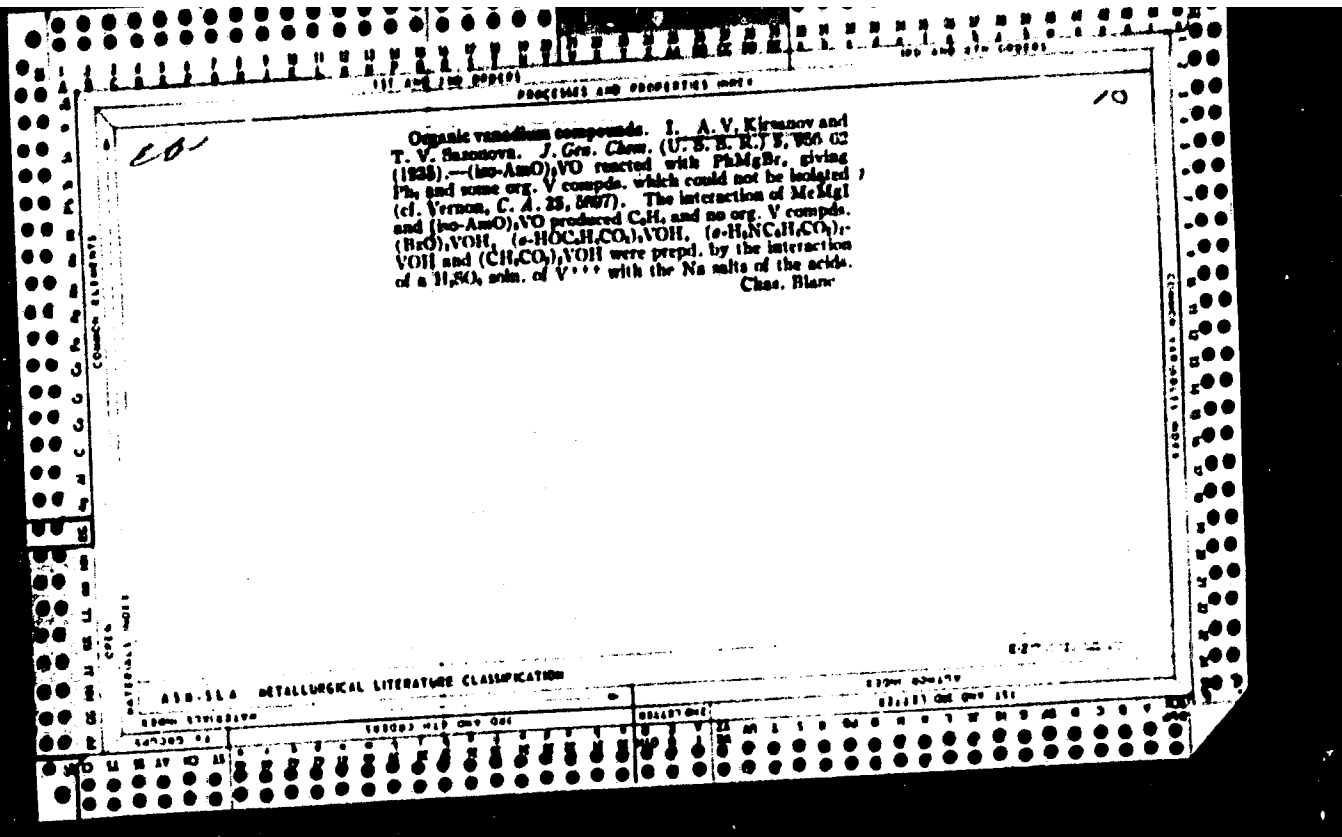
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APPROVED FOR RELEASE: 06/13/2000

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PROCESSES AND PROPERTIES INDEX

A-3

BC

Mechanism of amination by means of sod-amide. I. Preparation of substituted amidines.
 A. Y. KISHINEV and J. N. IVANOVICH (J. Gen. Chem. Russ. 1954, 5, 1404-1405).— $NH_2C(=NH)Ph$ (I) in $PhMe$ and NH_3 (II) at 120° react as follows: (I) + (II) $\rightarrow NH_2C(=NH)PhNa$ $\rightarrow NH_2C(=NH)Ph$ (III) + NaH $\rightarrow NH_2C(=NH)PhNa$ (IV) + $2H$; (I) + $2H$ $\rightarrow NHPh-CH_2Ph$ (V); (III) + (II) \rightarrow (IV) + NH_3 ; 3(I) + $2NH_3$ \rightarrow $CHPh-NH-CPh$ (VI) + $2NH_3$; (VI) undergoes further conversion into lophine (VII). The yields of final products isolated were NH_2Ph 12.0, (III) 19.6, (V) 14.9, and (VII) 15.6%; the corresponding products and yields obtained when benzylidene-*p*-toluidine is substituted for (I) are *p*-toluidine 22.6, *p*-tolylthioamidine 22.6, benzyl-*p*-toluidine 20.6, and (VII) 15.9%, whilst piperonyldiamine yields the *N*-phenylamide of piperonylic acid, m.p. $128-129^\circ$, and piperonylaniline. It is considered that the above mechanism also applies to the reaction of amination of C_6H_5N by (II).
 R. T.

ASD-31A METALLURGICAL LITERATURE CLASSIFICATION

FROM SYNOPTIC INDEX

FROM SOURCE

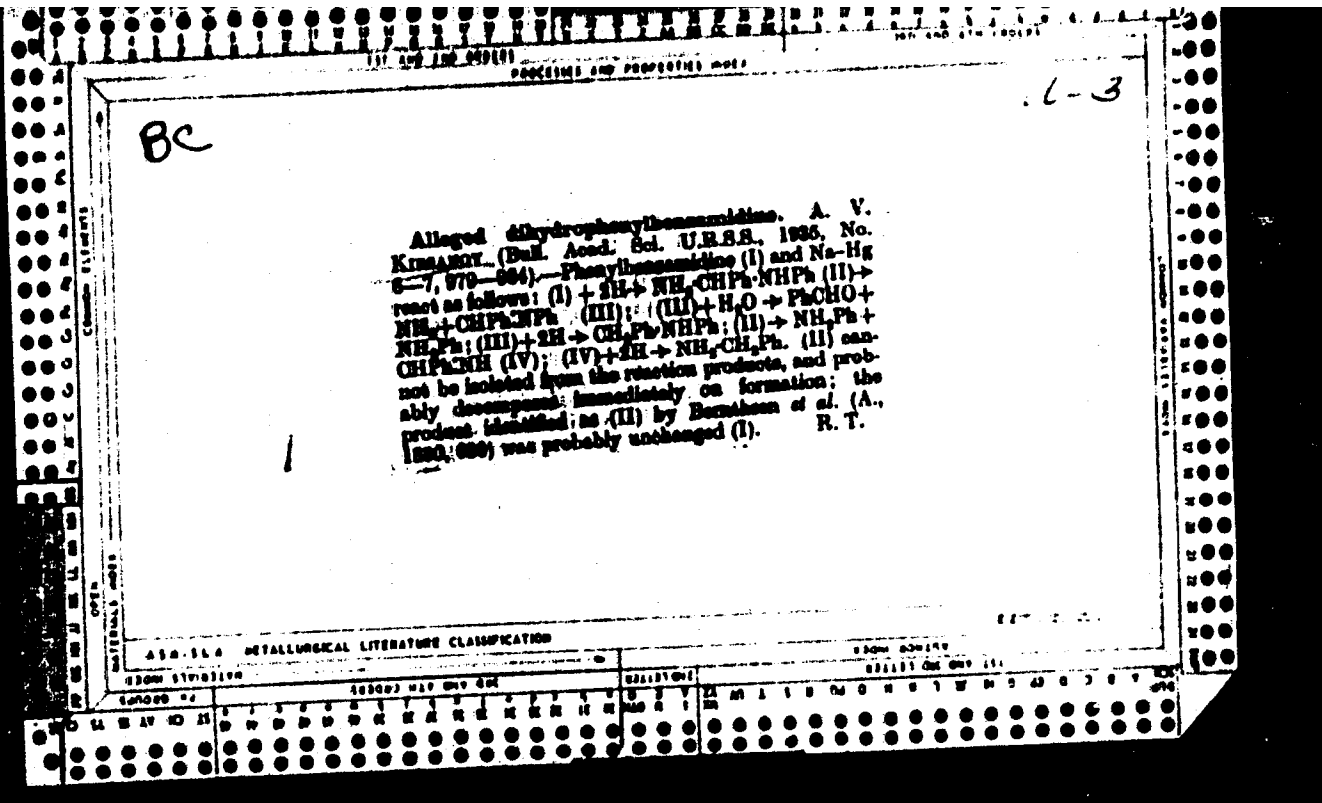
ADDITIONAL INDEX

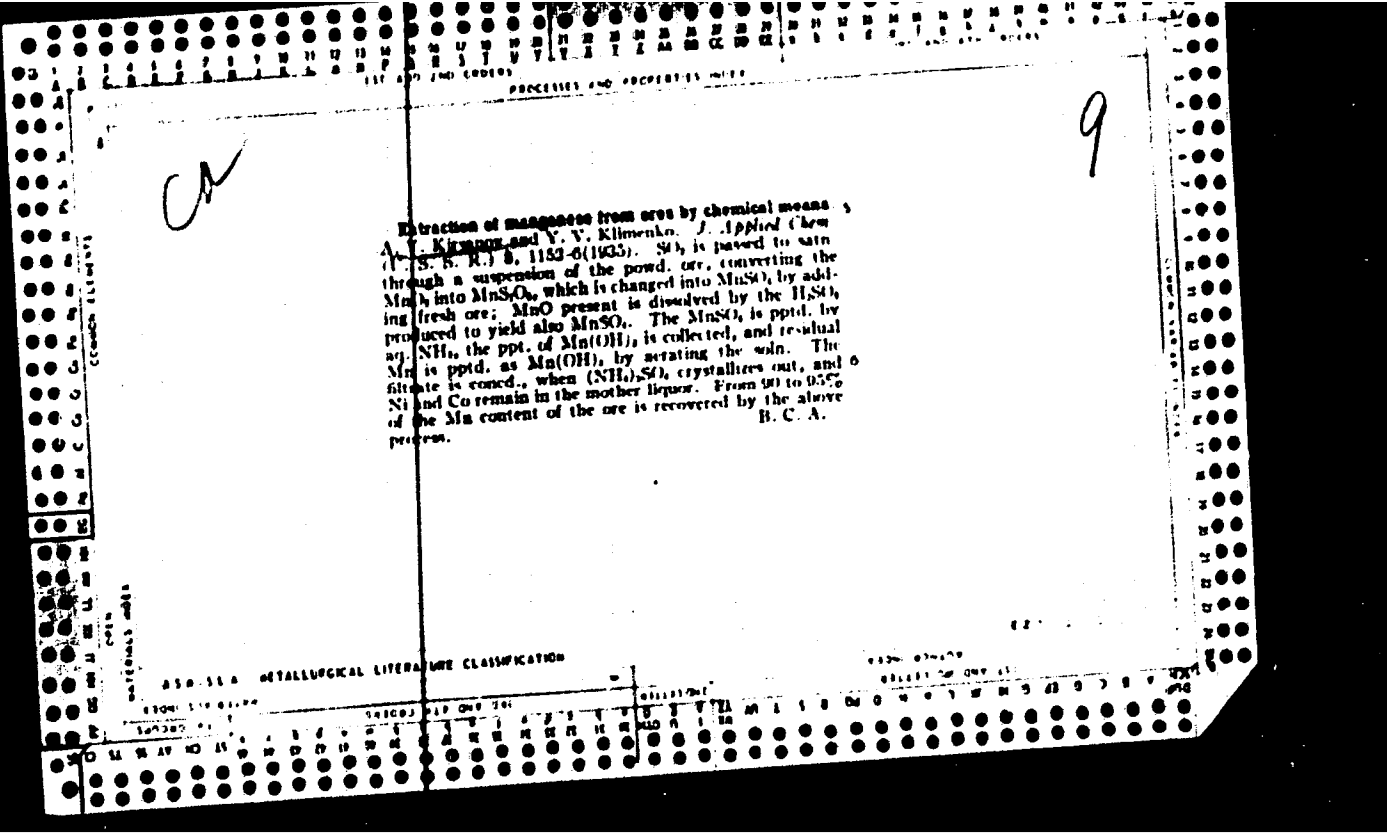
LANGUAGES

TOPICS

CLASSIFICATION

ADDITIONAL INDEX





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

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

PROCESSES AND PREPARATIONS

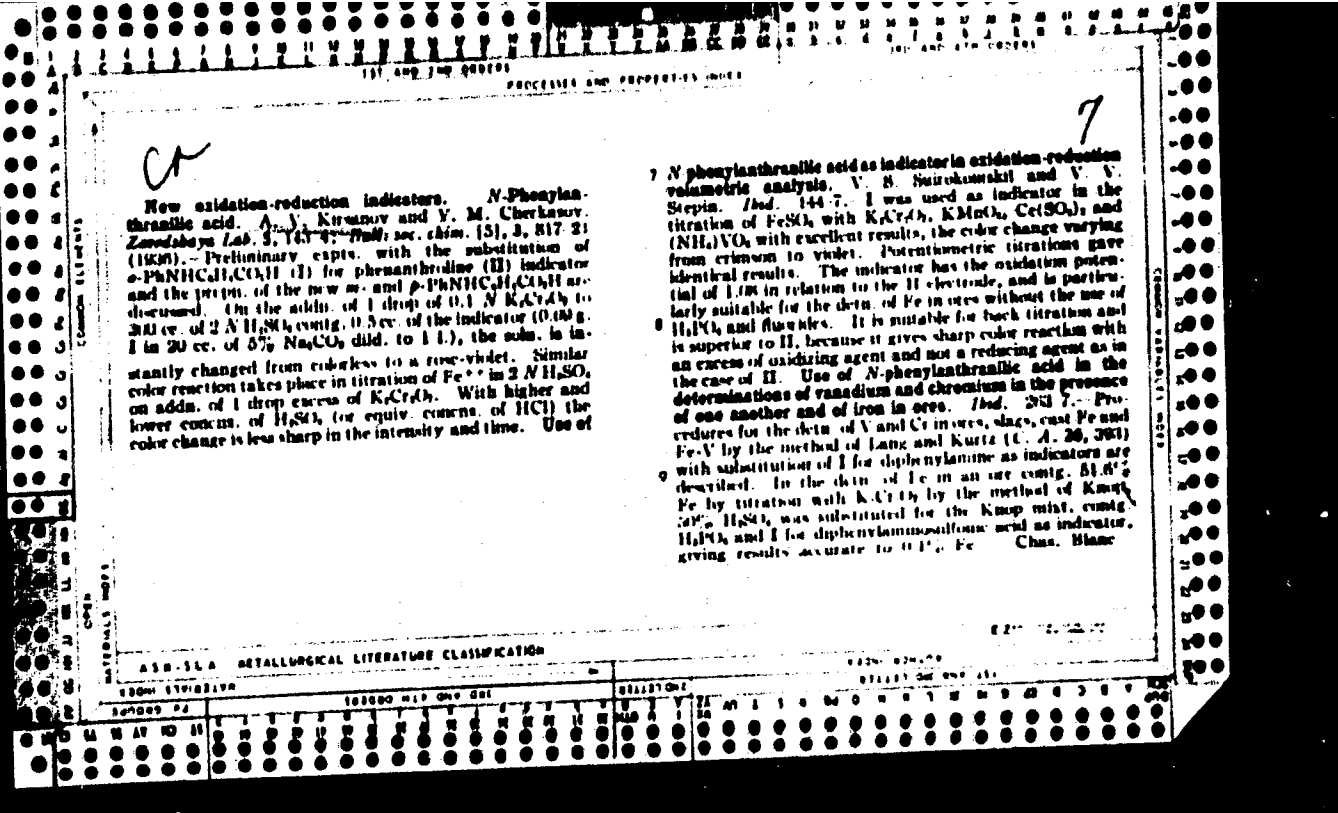
CO JZ

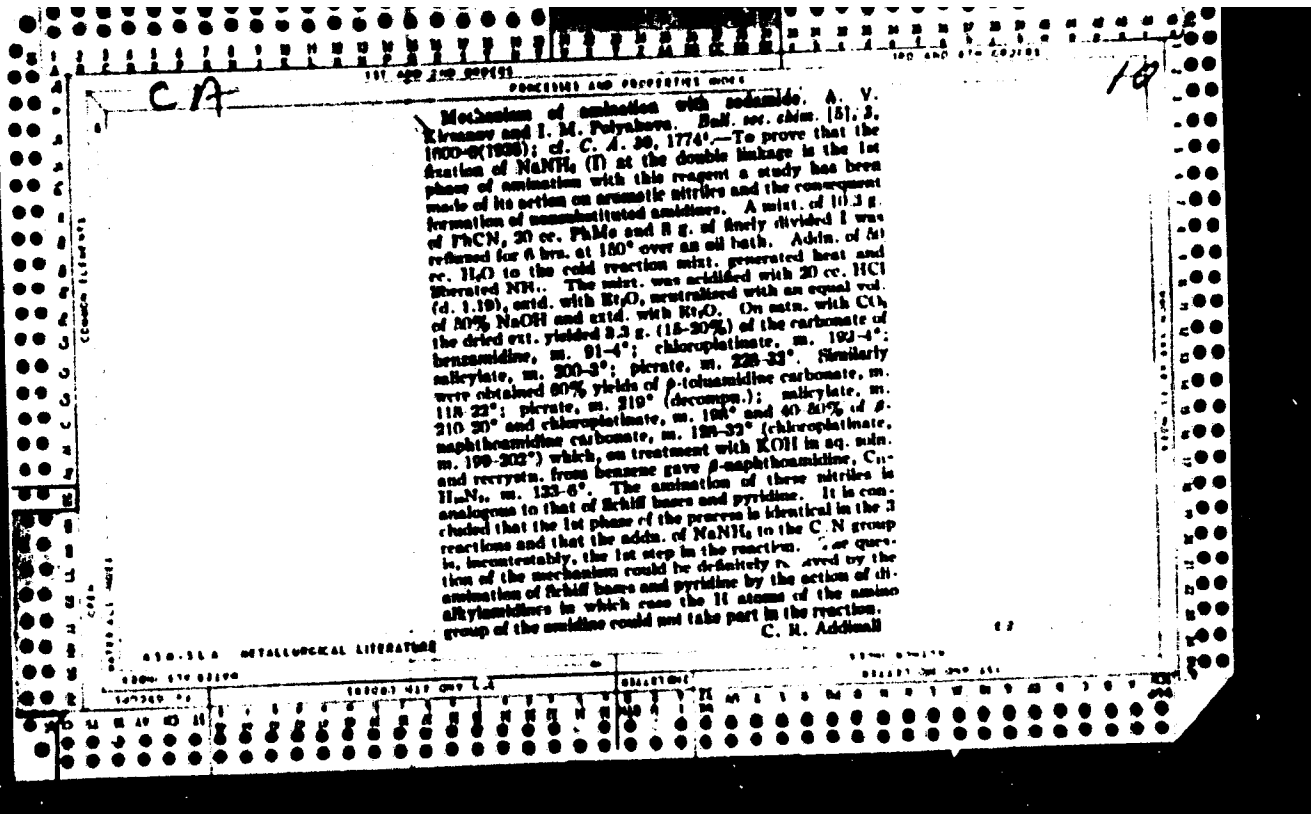
Application of ozone to examination of petroleum products. H. A. Y. Kirmanov, I. M. Polyakova and Y. N. Ivanchenko. *J. Applied Chem. (U. S. S. R.)* 8, 1197-1200(1935); cf. *C. A.* 30, 3077. Twenty-five per cent of the S content of Chusov benzine is readily removed by treatment with O_3 , the remainder being more difficultly oxidized; repeated treatment with small quantities of O_3 in low concn. is the most effective. The rate of desulfuration is unaffected by the presence of H_2O , $CaCl_2$, H_2SO_4 or $K_2Cr_2O_7$. Faragher and Morrell's method for the analysis of the S-comp. constituents of benzine is not applicable to ozonized benzine, as the Na_2PH_2 adsorbs part of the oxidation products, as well as mercaptans. Ichimbay is more readily desulfurized than Chusov petroleum, if the H_2S is previously removed. Ozonized benzine does not corrode Cu; its content of tarry matter varies inversely with the S content, attaining values of 0.018-0.051% after 12 mo. H. C. A.

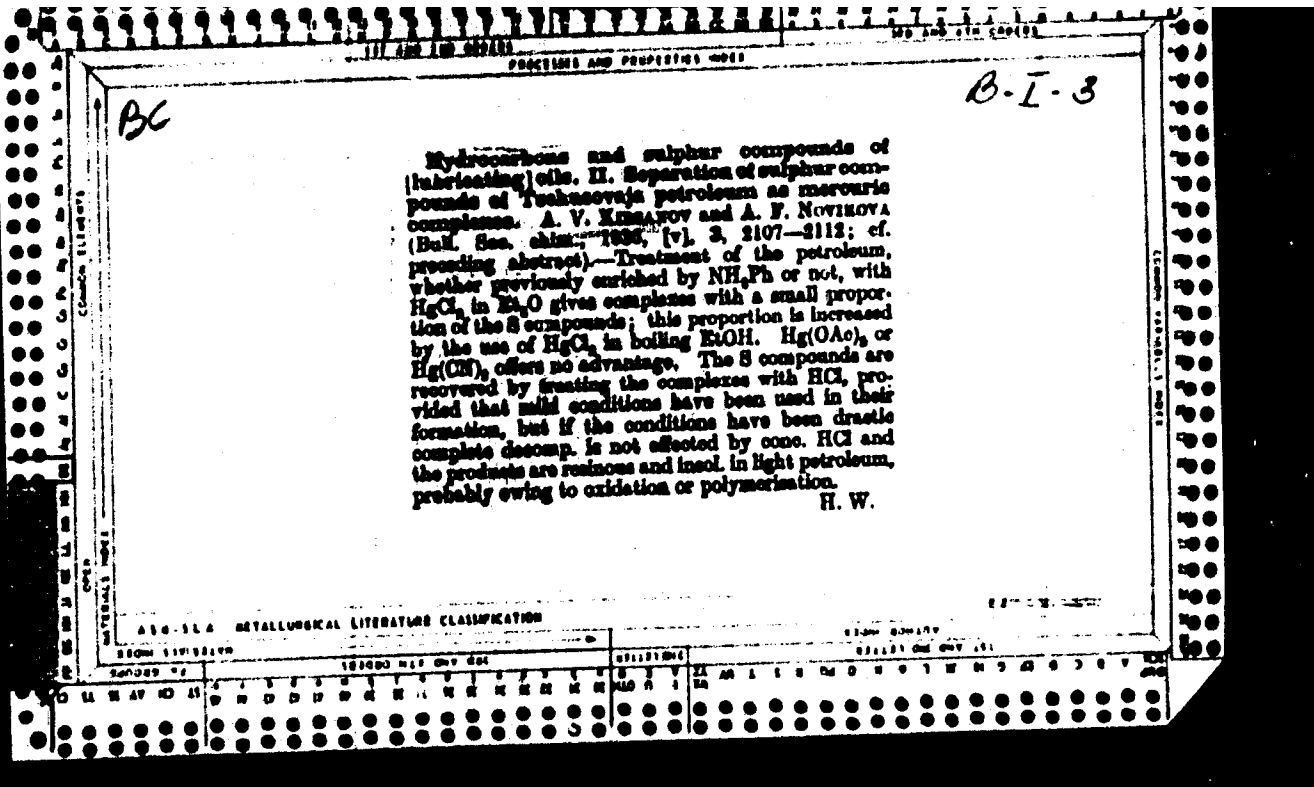
MATERIALS

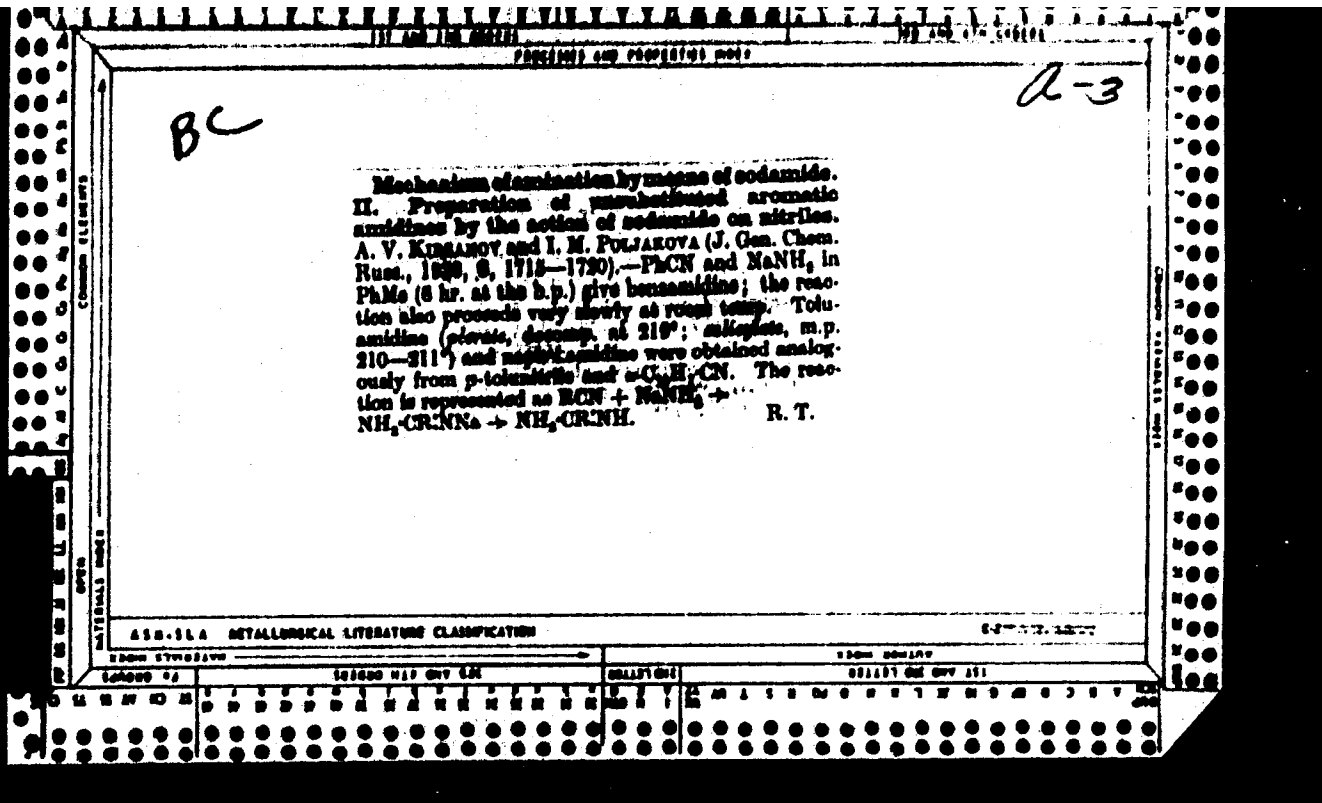
430-514 METALLURGICAL LITERATURE CLASSIFICATION

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CA

22

The hydrocarbons and sulfur compounds of lubricating oils. I. Selective extraction of oils from Chuvy petroleum with aniline. A. V. Kurmanov and A. F. Novikova

J. Applied Chem. (U. S. S. R.) 9, 163M 47 (in German 1647 8) (1936); cf. C. A. 31, 1933. Chuvy petroleum oils, b. 200-355° and contg. 5.4% of S as undetd. and inactive combination, were fractionated by extr. with C₆H₅NH₂ in the ratios of oil: C₆H₅NH₂, 100:25, 100:50, 100:75, 100:100, etc., up to 100:250, and at temps. of 0°, 5°, 7°, 10° and 20°. The oils were sepd. into 2 fractions, (1) light-yellowish or almost colorless oils with d., S content (by 0.5-1.5%), refraction, and I no. lower, and (2) oils of a dark cherry color with d., S content (by 1.5-2.4%), and I no. higher than those of the initial oils. These fractions differ in d. by 0.04-0.18, in polarization of light by 0.023-0.030, in I no. by 8-11 and in av. mol wt. by 21-40 units. The method can be applied successfully for the preliminary sepn. of S-contg. compds. from petroleum. Exptl. data are tabulated. Thirty references. A. A. Podgorny

458-15A METALLURGICAL LITERATURE CLASSIFICATION

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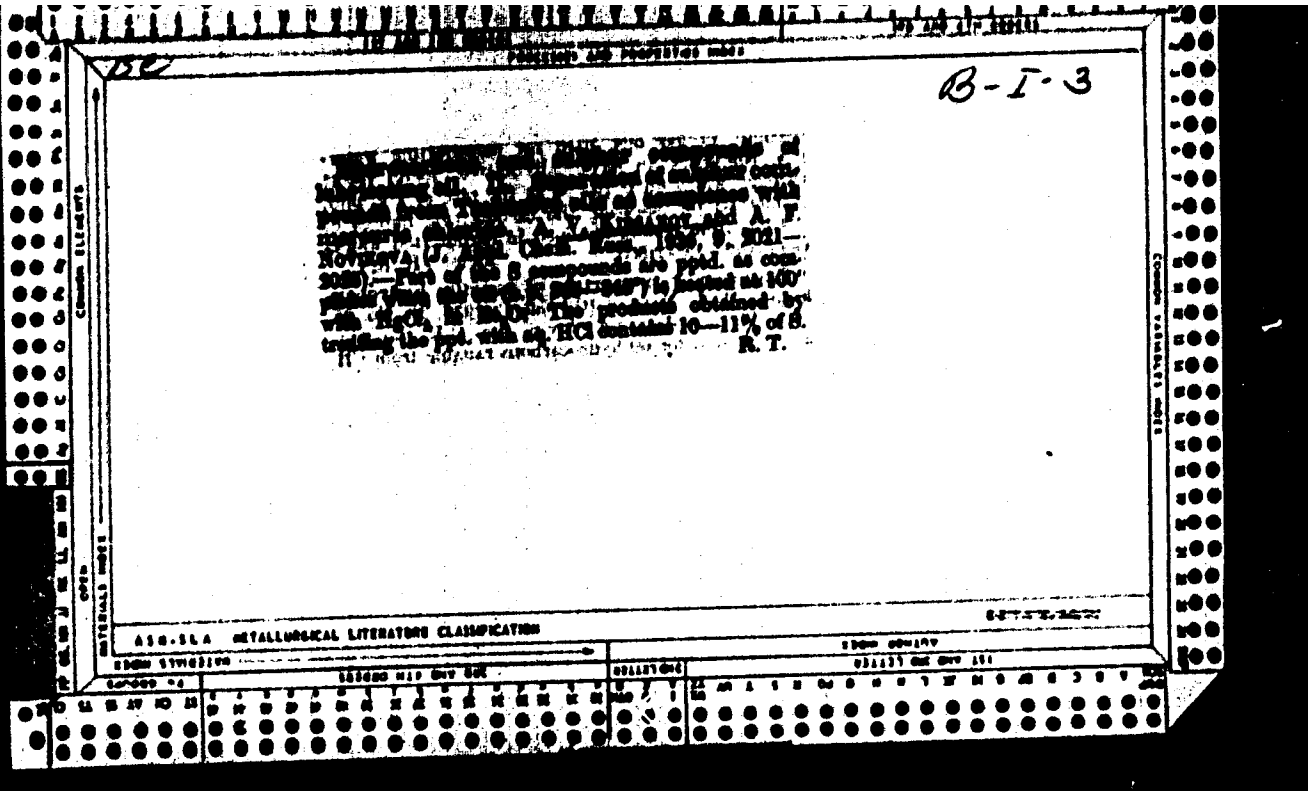
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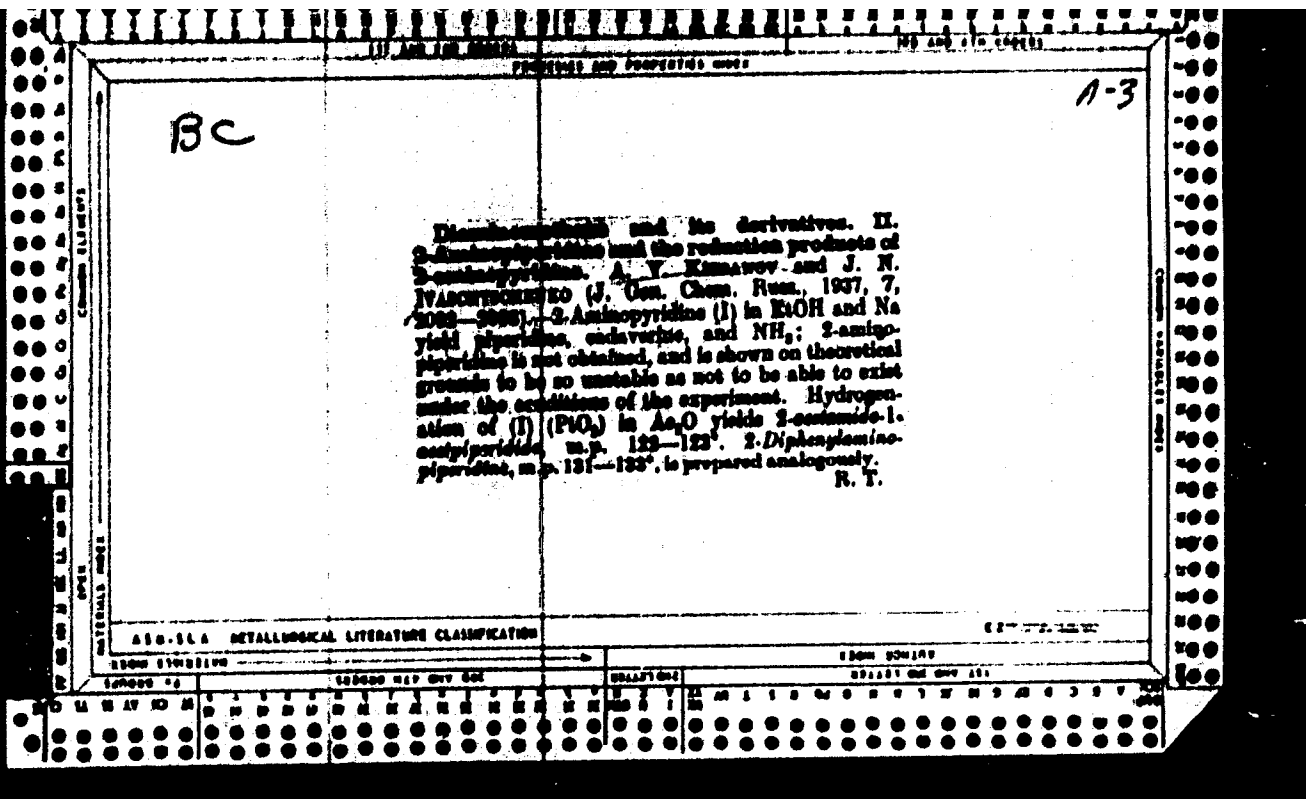
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KIRSANOFF, A. W.

"Sur le diaminomethane et ses derives. III. Saponification du diacetyl- α -aminopiperidine et sur le soi-disant dipiperideine de Arens." Iwastchenko, J. N. et Kirsanow, A. W. (137)

SO: Journal of General Chemistry (Zhurnal Obsheei Khimii). 1937, Volume 7, No. 2.



PROCEDURES AND PROPERTIES INDEX

10

ck

Alkylacetylbarbituric acids. A. V. Kirsanov and Ya. N. Ivanchenko. *J. Gen. Chem.* (U. S. S. R.) 9, 1670-83 (1938).—*S-Alkyl-S-acetylbarbituric acids* (I) were prepd. in 50-70% yield from the corresponding *S*-alkylbarbituric acids (II) (0.05 mol.) in 20 ml. of 10% NaOH with 2 ml. of 10% CuSO₄ and 0.05 mol. AcCl₂ in 50 ml. alc. by refluxing the mixt. on a water bath for 2 hrs., concn. in vacuo and recrystg. from alc. (cf. Ger. 625,854, C. A. 25, 4943). II were prepd. by the method of Fischer and Mering (*Therap. Monatsh.* 17, 206 (1903)). I on refluxing with 10% NaOH for 2 hrs. are decarbox. into α -alkyllevulinic acids and CO₂. The values given below are for m. p. of I, their oximes and phenylhydrazones, resp. Me, 226-8°, 244-5°, 237-8°; Et, 234-6°, 221-3°, 256-5°; Pr, 204-6°, 210-11°, 250-60°; Bu, 157-8°, 204-6°, 254-1°. *S-Benzyl-S-acetylbarbituric acid*, m. 222-3° (phenylhydrazone, m. 242-4°), decarbox. with 10% NaOH, gave 91% α -benzyllevulinic acid, m. 95-6° (phenylhydrazone m. 136-8°). This acid was identified by oxidation in 10% NaOH with Br to C₁₁H₁₃ and benzylsuccinic acid, m. 102°; its anhydride, m. 101-2°. Chas. Hain.

ABB-51A METALLURGICAL LITERATURE CLASSIFICATION

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CA

16

Hirudin. II. Purifying crude Hirudin. A. V. Kir-
 anov and M. G. Bystritskaya. *Doklady Akad. Nauk SSSR* 1940 (German summary).—Triturate 5 g. of crude hiru-
 din with 50 ml. of 87% glycerol for 1 hr. Add 200 ml. of
 90% alc., mix thoroughly and let stand for 1 hr. Centri-
 fuge and wash sediment 4 times with 25-50 ml. of alc.,
 carefully shaking the sediment with alc., and centrifuging
 each time. Mix the sediment with 100 ml. of H₂O; after
 20-30 min. centrifuge. Concentrate the clear soln. to
 10-15 ml. on a water bath at 5-6 mm. and not exceeding
 38°. Remove sediment by centrifuging and concentrate
 the soln. to 50 ml. *in vacuo*. Transfer to a flat-bottom dish
 (e. g. Petri) and dry *in vacuo* over CaO and H₂SO₄ at 3-8°.
 The product consists of gray flakes, sol. in H₂O and physiol.
 saline. For complete drying keep in desiccator for 2-3
 days. Hirudin obtained by the outlined method has an
 activity of 2000 units, compared to 1000 units of the crude.
 Yield 40%. It was found that the effectiveness of hirudin
 diminishes with increasing temp. M. Hensch

ASB 556 METALLURGICAL LITERATURE CLASSIFICATION

6-277-376-13000

6A

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2-Nitropyridine. M. G. Hryshchuk and A. V. Kirpichnikova *J. Gen. Chem.* (U. S. S. R.) 10, 1101-7 (1941).
 When 2-amino-5-chloropyridine in H_2SO_4 is added to a 2:1 mixt. of concd. H_2NO_3 and 30% H_2O at 15-5° and allowed to stand for 2 days, it gives 47% 2-nitro-5-chloropyridine (I), m. 120.5-1°. In an analogous reaction, 60% 2-nitro-5-bromopyridine (II), m. 149.5-50°, is obtained. Neither compd. has basic properties or forms picrates, though they dissolve in concd. H_2SO_4 and ppt. unchanged on diln. Boiling with alc. $NaCN$ or $R(CN)_2$ opens the ring. The structures are proved by reduction to the corresponding amines with $NaHS$. When I is refluxed for 45 min. with As_2O_3 in $NaOH$ soln., it gives 25% 5,5'-dichloro-2,2'-azopyridine, decamps. 234°. Similarly, II gives 75% 5,5'-dibromo-2,2'-azopyridine, decamps. 233°. If I and II are refluxed with As_2O_3 for 45 min., the products are 45% 5,5'-dichloro-2,2'-azopyridine, decamps. 244°, and 45% 5,5'-dibromo-2,2'-azopyridine, decamps. 235°. When 2-amino-5-nitropyridine (III) in boiling H_2O is treated with a few grams of 40% CH_3CO and the mixt. boiled for 10 min., N,N' -bis(5-nitro-2-pyridyl)methanediamine, decamps. 266°, is formed. In the same way, 5-nitro-6-aminopyridine gives N,N' -bis(5-nitro-6-pyridyl)methanediamine

ASB-3LA METALLURGICAL LITERATURE CLASSIFICATION

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The preparation, properties and reactions of 2-dichloro-3-amino-5-nitropyridine. M. G. Hystitichaya and A. V. Kuznetsov. *J. Gen. Chem.* (U. S. S. R.) 10, 1827 (1940); cf. *C. A.* 35, 4023. —When 0.01 M solns. of 2-amino-5-nitropyridine (I) in the presence of a 100% NaOAc buffer adjusted to pH 3.6 are treated with 0.01 M NaOCl, almost 100% 2-dichloro-3-amino-5-nitropyridine (II), decmp. 73°, is obtained. When pure, II is quite stable, though it decmp. in 10 months at room temp. If it is impure, its decmp. is rapid. If the I and NaOCl are mixed in *N* HCl, II ppt., but immediately redissolves and 2-amino-3-chloro-5-nitropyridine (III), m. 205-6°, is formed. III is also formed when II is treated with *N* HCl and when I is chlorinated in HCl soln. When II is heated in EtOH, III is the main product, but a small amt. of a red compd. (IV), m. 211-12°, decmp. 213°, is also formed. With Na₂S or coord. HCl, II regenerates I. In NaOH soln., II gives some NaOCl, a brown amorphous ppt. and a little I. Probably this decmp. goes through an acifurim. In acid or neutral soln., II reacts with H₂O to give O₂ and 5% I. In alk. soln., IV is also formed. 2-Amino-5-bromopyridine and NaOCl give 5,5'-dibromo-2,2'-azopyridine, m. 240-1°. I and NaOH give 40.7% 2-amino-3-bromo-5-nitropyridine, m. 214-16°. IV is obtained in small yield when I is treated with NaOCl in neutral soln., or when II reacts with AgNO₃ in EtOH. The aq. soln. of I is 1.6 mg per ml at 15°. In salt soln. it is much lower. H. M. Leicester

A10-114 DETAILORICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

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Preparation of sulfidine and certain new derivatives of strychnine. I. M. Polyskova and A. V. Kirmanov. *J. Applied Chem. (U. S. S. R.)* 13, 1719-19 (in French, 1215) (1940).—A review of the literature on the prep. of

sulfidine (2 - (p - aminophenylsulfonamido)pyridine) is given. The Ac deriv. of sulfidine was prepd. as follows: A pure *o*-aminopyridine (1.0 mol.) was dissolved in 2.5 mols. of dry, pure pyridine and the resulting soln. was mixed with 1.0 mol. of pure p-HO₂SC₆H₄NHAc.HCl (I), keeping the temp. below 90-100°. After 1 hr., the resulting mass was mixed with 100 cc. of water and then with 680-675 cc. of 4 N HCl. After 15 min., the mix. was filtered and the residue was washed with 0.5 N HCl, then with water, and dried in the air. The yield of Ac deriv. was 80%. The following compds. were synthesized by the action of I upon allylpyridonimines in neutral solvents: *p*-Acyloaminobenzenesulfon - 1 - methylpyridonimine, m. 232-3°; *Et* homolog m. 222-4°; *Pr*, m. 188-8°; *Bu*, m. 178-80°; *benzyl*, m. 188-90°. *p*-Amino-benzenesulfon - 1 - methylpyridonimine, m. 227-9°; *Et* homolog, m. 180-92°; *Pr*, m. 182-4°; *Bu*, m. 194-7°. The work is being continued. A. A. Pudrov

ASAC-512 METALLURGICAL LITERATURE CLASSIFICATION

METALLURGICAL LITERATURE CLASSIFICATION

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Determination of cyclopentadiene. A. V. Kiranov, I. M. Polyakova and Z. I. Kuznetsova. *J. Applied Chem. (U. S. S. R.)* 13, 1400-13(1940).—Freshly distd. cyclopentadiene (or fraction b. 20-60°) was condensed with maleic anhydride for 1 hr. Then it was treated with 4% KIO₃, 24% KI and 0.1 N thiosulfate soln. and let stand for 2 hrs. A known amt. of I soln. was added, and the excess was titrated in the usual way. The percentage of cyclopentadiene was calcd. by the formula: $100(a - b) 0.0033 / s$, where *a* and *b* are cc. of thiosulfate soln. used for the titration of blank and sample resp., and *s* is the wt. of sample. The method is accurate to within ±1%. *p*-Benzoquinone cannot be used for the condensation with cyclopentadiene; after 3 hrs. condensation was only 85% complete. The velocity of polymerization of cyclopentadiene in a crude C₅H₆ was detd. by the method described; 62.5% of cyclopentadiene was polymerized on storage for 2 months. A. A. Poligony

AS 6-51A METALLURGICAL LITERATURE CLASSIFICATION

KIRSANOV, A. V.

A. V. Kirsanov and Yu. M. Zolotov - "Amidation of dibasic carboxylic acids." (p. 1145)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1940, Vol. 20, No. 7.

KIRSANOV, A. V.

PA 54/49T14

Academy of Sciences
Department of Chemical Sciences

"In the Department of Chemical Sciences" 6 pp

"Vest Ak. Nauk SSSR" No 6

Following reports submitted: A. V. Kirsanov's
"Oxidation of Carboxylic Acids into Amides," A. B.
Kulshadyan's "Mechanism of Photochemical Oxidation
of Ethane Sensitized by Mercury," A. I. Brodskiy's
"Mechanism of Allylphenyl Regrouping and the Struc-
ture of the Hydrogen Bond in Benzoguanhydrone," and
A. I. Trofimov's "Composition of Metacetic and
Methyl Sulfates." Discusses new methods of
microelementary analysis developed in Lab of
Qualitative Microanal. Inst of Org Chem.

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A. P. Sachs

New method of preparation of amides of carboxylic acids directly from the acids. A. V. Kirsanov and Yu. M. Zolotov (Stalin Metallurg. Inst., Dnepropetrovsk). *Zhur. Obshch. Khim.* (J. Gen. Chem.) 19, 2201-7 (1949). Monoatomic carboxylic acids are readily converted to the amides by treatment with $\text{SO}_2(\text{NH}_2)_2$ (I) in the presence of pyridine. H_2O and I in an. soln. failed to give any BaNH_2 , either at room temp. or on heating, with or without added bases. Heating an equimolar mixt. of I and H_2O to 125° 2 hrs. until the lower layer solidified, followed by treatment with H_2O and Et_2O , extrn. of the Et_2O layer with N NaOH , and evapn. gave up to 80% BaNH_2 in a series of expts.; increase of the temp. to 220° gave more tarry matter, lower yields of BaNH_2 , and some PhCN . When equimolar mixts. of H_2O and I are heated with 5-6 moles pyridine, the max. yields of BaNH_2 approach 80% only, since I reacts with pyridine even at 100° , yielding apparently derivs. of either $\text{NH}(\text{SO}_2\text{H})_2$ or tri-sulfamide; other reactions of the by-product $\text{H}_2\text{NBO}_2\text{H}$ also intervene, making it necessary to use an excess

of I for best results. The best yields of the amide result on long heating at relatively low temps. and the optimum procedure is as follows: the well-dried reagents 1.23 g. H_2O (50-100cc.), 1.92 g. I, and 5 ml. pyridine in a flask provided with an air-cooled reflux condenser are heated on a steam bath 3 hrs., the pyridine removed in vacuo, the residue treated with 10 ml. H_2O or 10 ml. 2 N Na_2CO_3 , the mixt. evapd. to dryness, taken up in 10 ml. H_2O , heated rapidly to boiling, cooled, let stand 3 hrs. in a cool place, and filtered, yielding 74.4% BaNH_2 , m. 125.7° , after repeated washing with H_2O ; extrn. of the acidified aq. soln. with Et_2O gave an addnl. 9.9% BaNH_2 , for a total yield of 84.3%. Similarly, 1.67 g. $p\text{-O}_2\text{NC}_6\text{H}_4\text{CO}_2\text{H}$, 1.92 g. I, and 5 ml. pyridine after 3 hrs. at 100° gave 81.3% amide, m. 190.7° ; the *m*-isomer, m. $139-40^\circ$, is obtained in 84% yield by using 1.5 moles of I; *o*- $\text{ClC}_6\text{H}_4\text{CONH}_2$, m. $140-1^\circ$, is prepd. in 90% yield, the *p*-isomer, m. $169-71^\circ$, in 96% yield by using only 25% excess of I. Heating 1.2 g. AcOH , 2.88 g. I, and 5 ml. pyridine 3 hrs. to 100° gave after addn. of Na_2CO_3 , concn., and extrn. with Me_2CO , 84% AcNH_2 , m. 80° (from $\text{Et}_2\text{O-EtOH}$); caprylic acid gave 80% amide, m. 102.4° (from H_2O); and palmitic acid gave 81.5% amide, m. 102.3° (from Me_2CO), best prepd. by heating 0.5 hr. to 130° ; $\text{PhCH}_2\text{CO}_2\text{H}$ gave 70% amide, m. $154-5^\circ$ (from H_2O), after 3 hrs. at 100° .

G. M. Kosolapoff

CA

A new method of synthesizing amides of carboxylic acids directly from the acids. A. V. Kirsanov and Yu. M. Zolotov (Stalin Met. Inst., Dnepropetrovsk). *J. Gen. Chem. U.S.S.R.* 10, No. 12, 2673 81(1919) (Engl. translation).—See *C.A.* 44, 4110g. E. J. C.

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Chemistry of amides of sulfuric acid. A. V. Kirzanov (Stalin Metallurg. Inst., Dnepropetrovsk). *Izvest. Akad. Nauk S.S.S.R., Otdel Khim. Nauk* 1950, 426-37; cf. C.A. 44, 4446g. Heating org. acids with $H_2NSO_3NMe_2$ gave 50-84% yields of $RC(=NMe)_2$, from $BiOH$, $PhCH_2CO_2H$, $AcOH$, *o*- and *p*- $ClC_6H_4CO_2H$, and *o*- and *p*- $Cl_2NC_6H_3CO_2H$; Et_3N and $(iso-Pr)_3N$ analogs are also readily obtained from $H_2NSO_3NR_2$. Hence, amidation by sulfamides does not go through an $N:SO_3OH$ stage, and the reaction is not symmetrical in respect to the sulfamile component. Treatment of $AgN(SO_3NH_2)_2$ with MeI or direct action of CH_3N_3 yields *N*-methylimidosulfamide, $MeN(SO_3NH_2)_2$ (I), m. 113-14°, neutral, and sol. in H_2O ; it gives a solid adduct with NH_3 , and is rapidly hydrolyzed in aq. solns. at 30°; at 15° the reaction is fairly slow, hence the imidosulfamile ion is quite stable in H_2O , but the mol. shows fairly ready instability to H_2O . Hydrolysis of I yields largely $MeNH-SO_3NH_2$, m. 65.5-66°, giving a neutral soln. in H_2O . In attempts to prep. the free acid, the synthesis of H_2NSO_3Cl was unsuccessfully attempted. H_2NSO_3OH with 2 PCl_5 on the water bath gave 1 PCl_5 and 3 HCl , as well as a product best represented by $(C_6H_5)_3N:PCl_2$ (the similar product described by Ephraim and Gurewitsch, C.A. 4, 1000), was apparently very crude, confirmed by mol. wt. analysis, and hydrolysis which yields 7 equivs. of acid (thymolphthalein); the

trichlorophosphazenechloride, m. 23°, is obtained in 99% yield when the prep. is done in CCl_4 soln.; several crystals from petr. ether give 75% pure product, m. 35-6°. Pure, dry reagents in exact proportions (2:05:1.0) must be employed, the product hydrolyzes readily in H_2O , rather slowly at 0°, it may be stored in ampuls and may be sublimed. It is 1 of the 2 known examples of true monomeric phosphazene compounds (the other is $Cl_3P-NSO_2C_6H_4COCl_2$ (II); cf. Remsen, *et al.*, *Am. Chem. J.* 18, 151, 350 (1896)). Equimolar amts. of $ArSO_3NH_2$ and PCl_5 on the water bath 20 (60 min. gave almost 100% yields of $ArSO_3N:PCl_2$ derivs., especially if some CCl_4 was present in the mix. The results supersede those of earlier workers (Fittig, *Ann.* 106, 277 (1858); Gerhardt, *Ann.* 108, 230 (1858); Wachelhaus, *Ber.* 2, 502 (1860); Wallach, *et al.*, *Ber.* 8, 317 (1875)). On hydrolysis the products give theoretical amts. of $ArSO_3NH_2$, HCl , and H_3PO_4 , while mol. wt. detns. establish the monomeric nature of the phosphazene derivs. Their synthesis is believed to be a simple condensation with loss of 2 HCl . The products are solids which melt clear; they are almost colorless and are sol. in the usual org. solvents; hydrolysis by H_2O is moderately slow (0.2 g. specimen shaken at room temp. with 100 ml. H_2O and 10 ml. 0.1 *N* $NaOH$ is completely hydrolyzed only in 40 min.), addn. of a little

EtOH speeds the reaction tremendously, as does heat. The products react energetically with NH_3 , primary and secondary amines, alks., and phenols. The products isolated included: $\text{PhMgN:P}(\text{Cl})_2$, m. 31.5° ; *o*-tolyl analog, m. 32.5° ; *p*-tolyl analog, m. 100° . They cannot be distd. without decompn. even at 6 mm., but may be crystd. from CCl_4 or petr. ether. Attempts to hydrolyze their P:N link without detachment of Cl failed. Vacuum distn. of $\text{C}_6\text{H}_4\text{-N:P}(\text{Cl})_2$ (at $118-20^\circ$) gives 92% POCl_3 , provided pure starting material is used; in alks. were obtained 18-24% of 2 new products. One is $(\text{NSO})_2$ (probably a trimeric ring of NSO units), that gives 6 acid equivs. on hydrolysis and shows no active Cl (hence Cl is bound to the SO group); it m. $144.6-45.5^\circ$ and may be sublimed; its hydrolysis is fairly slow in the absence of EtOH ; it may be distd. above 270° but usually distn. is ended by explosion; safe sublimation occurs at $121-30^\circ$ at 0.5 mm.; it reacts with alks. and amines. The 2nd product has the same compn. but is probably a stereoisomer, being more sol. in org. solvents and m. 47.5° ; it sublimes more easily and its hydrolysis leads to unknown volatile products. Distn. of II in *vacuo* yields POCl_3 and $\text{C}_6\text{H}_4\text{C}_2\text{H}_4\text{CN}$, which is probably the result of a bimol. reaction, analogous to the amidation of carboxylic acids by sulfamide and yielding $\text{ClCC}_6\text{H}_4\text{SO}_2\text{Cl}$ and $\text{ClP}(\text{NCC}_6\text{H}_4\text{SO}_2\text{N})_2\text{Cl}_2$, which interact to form 2 mols. of $\text{ClP}(\text{NCC}_6\text{H}_4\text{SO}_2\text{N})_2\text{Cl}_2$, and this breaks down to POCl_3 and $\text{C}_6\text{H}_4\text{CN}$. This reaction may occur when the $\text{SO}_2\text{N:P}(\text{Cl})_2$ and COCl groups are in different mols.; heating *acyl chlorides* with $\text{ClP}(\text{NSO}_2)_2$ to $180-220^\circ$ rapidly (20 min.) yields POCl_3 and the corresponding *sulfonoyl chloride* and nitrile, which may be sept. by distn. or by treatment with

NH_4OH , followed by sept. of the sulfonamide by 10% NaOH . The method is good for the prepn. of nitriles of high-boiling aromatic acids. The crude reaction products of carboxylic acids with SOCl_2 and of sulfonamides with PCl_5 (each pair heated 1 hr.), may be mixed (after removal of the excess reagents) and heated to $200-250^\circ$ to give 80-90% of the corresponding sulfonamides and nitriles.

G. M. Kosolapoff

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CA

New method of transformation of carboxamides into nitriles. A. Y. Kirsanov and Yu. M. Zolotov (Stalin Metallurg. Inst., Dnepropetrovsk). *Zhur. Obshch. Khim. (J. Gen. Chem.)* 20, 294 (1950); cf. C.A. 44.

4440g. -- RCONH₂ are readily transformed into RCN by means of H₂NMgH (I), at 180-220°. Refluxing 12.1 g. H₂NH₂ and 11.6 g. I in 20 ml. dry pyridine 9 hrs. gave after neutralization only 0.6 g. PhCN. However, heating 12.1 g. H₂NH₂ and 14.55 g. I to 200° in 20 min. and to 230° in 20 min. gave a slow distn. of 90.6% PhCN (crude; 82% pure). Similar heating of AcNH₂ with a small excess of I gave in 30 min. 62% MeCN; 11.8 g. AcNH₂ and 9.7 g. I, however, heated to 230° over 1.5 hrs. gave 7.95 g. (95.6% based on I) MeCN and 0.8 g. AcOH. Similarly 0.02 mole C₁₂H₂₅CONH₂ and 0.04 mole I in 20 min. at 200-10° gave 1.8 g. caprylonitrile, b. 195-7°, d₄²⁰ 0.8198, and a similar reaction gave 80.5% palmitonitrile, b. 186.8°, n_D²⁰ 1.46-9°. Heating 0.83 g. *m*-nitrobenzamide and 0.61 g. I to 220° in 20 min. and keeping 5 min. gave 94% *p*-nitro, m. 115-17°; the *p*-isomer, obtained similarly in 94% yield, m. 146-7°, while *o*-ClC₆H₄CN, m. 45-6°, was obtained in 91% yield, as was the *p*-isomer, m. 92-3°. PhC(CH₃)₂CONH₂ at 20-15° gave 72.5% nitrile, b. 105-6°. G. M. K.