On the Mechanism of the Electroreduction of Lead in Pyrophosphate Electrolytes SOV/153-2-4-17/32

ASSOCIATION: Kiyevskiy politekhnicheskiy institut, Kafedra fizicheskoy i kolloidnoy khimii (Kiyev Polytechnic Institute, Chair of Physical and Colloidal Chemistry)

SUBMITTED: March 19, 1958

Card 3/3

OVCHARENKO, F.D.; GUDOVICH, N.V.

Waterproof Crimean bentonite. Bent.gliny Ukr. no.3:23-29
'59. (MIRA 12:12)

1. Institut obshchey i neorganicheskoy khimii AN USSR.
(Crimea--Bentonite)

SOV/21-59-5-8/25

5(

AUTHORS: Ovcharenko, F.D., Corresponding Member of the AS UkrSSR, Blokh, G.A., Gudovich, N.V., Lomov, Yu.I.

TITLE: Pyrophyllite, a New Dielectric Filler for Cable Rubber

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, 1959, Nr 5, pp 489-493 (USSR)

ABSTRACT: The authors made a study of the physico-chemical properties of Ukrainian pyrophyllite of the Zbrankov deposits, Zhitomir region, with the purpose of applying it in cable rubbers as a dielectric filler, instead of chalk and talc (imported from the Urals). The Zbrankov pyrophyllite was found to consist in its basic mass of 85% of highly disperse pyrophyllite mineral, about 15% quartz with traces of talc. The structural formulas of pyrophyllite and talc are as follows: pyrophyllite - $Al_2 [Si_4O_{10}](OH)_2$; talc- $3MgO \cdot 4SiO_2 \cdot H_2O$. The optical constants of pyrophyllite are Ng= 1.600 - 1.594; Np = 1.552-1.555;

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SOV/21-59-5-8/25

Pyrophyllite, a New Dielectric Filler for Cable Rubber

Ng-Np = 0.048-0.039; of talc Ng = 1.575-1.590; Np = 1.538-1.545; Ng-Np = 0.037-0.045. Chemical compositions of pyrophyllite and talcs from the Urals are shown in table 1. Mixtures of pyrophyllite were substituted for talc and chalk, as shown in table 3, subjected to pressed vulcanization at $143^{\circ} \pm 2^{\circ}$ for 10-60 minutes. The analysis of the results of testings showed in table 4 indicates that the physical and mechanical properties of the rubber remained unchanged both before and after ageing (24 hours -long, at 70°, in the air) and did not differ from serially-produced insulation rubber. Hence, pyrophyllite is a new effective dielectric filler for cable rubber. It is the most hydrophobic of all agrillaceous minerals, its heat of moistening is close to zero, the value of water sorption at $P/Ps = 1$ is 0.2 nmol/g, the dielectric constant is 7.7, angle of dielectric losses 9-12', pH = 6.5. Thermal treatment and grinding may intensify the heat of moistening, value of water absorption and

SOV/21-59-5-8/25

Pyrophyllite, a New Dielectric Filler for Cable Rubber

dielectric constant. There are 4 tables, 1 microphoto, 1 graph and 4 Soviet references.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN UkrSSR i Dnepropetrovskiy khimiko-tekhnologicheskiy institut (Institute of General and Inorganic Chemistry of the AS UkrSSR, and the Dnepropetrovsk Chemico-Technological Institute)

SUBMITTED: February 18, 1958

Card 3/3

GUDOVICH, A.V.

83279
S/021/60/000/001/009/013
A158/A029

15.9130

AUTHORS: Ovcharenko, F.D., Corresponding Member of the AS UkrSSR; Blokh, H. A.; Hudovich, H.V.; Yoffe, A.I.

TITLE: Activated Diatomite - a New Rubber Filler 15

PERIODICAL: Dopovidi Akademiyi nauk Ukrayins'koyi Radyans'koyi Sotsialistychnoyi Respubliky, 1960, No. 1, pp. 54 - 59

TEXT: In his other work (Ref. 2) the first author showed that pyrophyllite can be used in the manufacture of rubber cables, yet the strength of rubber obtained with its use is relatively low (60 kg/cm after 30 - 60 min of vulcanization at 145°C), which calls for a strengthening of such fillers through activation. The authors used the following activating agents: 1) alcamon OC-2 (OS-2), an activated Crimean diatomite (a quarternary salt of diethylamino-methylglycolic ether) that increases the strength criteria by 50 - 60% as compared to unactivated fillers during a short period (only 4 - 10 min instead of 30 - 60 min and more) and accelerates the process of vulcanization; 2) carbazolin, a quarternary salt of imidazole derivatives; 3) equalizer A, a preparation of mixed cation-active and non-ionogen types. The Crimean diatomite consisted of (in %): SiO_2 65.38; IX

Card 1/2

83279

Activated Diatomite - a New Rubber Filler

S/021/60/000/001/009/013
A158/A029

CaO 2.00; Al_2O_3 15.43; MgO 2.43; Fe_2O_2 5.82; SO_3 1.20; (K, Na) Cl 0.5. Even when alcamon OS-2 was introduced directly on the rollers into a rubber mixture filled with natural diatomite, strengthening of the rubber and acceleration of vulcanization were observed. The indicated positive results should be explained as a change in the chemical nature of the diatomite surface into an organophilic surface, and by the peculiarities of the structure of natural diatomite, which is capable of interacting with the structure of rubber. Table 1 shows chemico-mechanical properties of rubbers obtained with the use of pyrophyllite and diatomite. Table 2 shows the percentage of activating substances in rubbers at various regimes of vulcanization. Table 3 gives the results of the adding alcamon to rubber (in %) under various conditions of vulcanization. There are 3 tables and 3 Soviet references.

X

ASSOCIATION: Instytut zagal'noyi ta neorganichnoyi khimiyi AN UkrSSR ta Dnipropetrovs'kyy khimiko-tekhnologichnyy instytut (Institute of General and Inorganic Chemistry of the AS UkrSSR and the Dnepropetrovsk Chemico-Technological Institute)

SUBMITTED: August 31, 1959

Card 2/2

KUDRA, O.K.; GUDOVICH, N.V.

Cathodic polarization in lead pyrophosphate solutions.
Zhur.fiz.khim. 34 no.7:1616-1621 Jl '60.
(MIRA 13:7)

1. Kiyevskiy politekhnicheskiy institut.
(Lead pyrophosphate) (Polarization(Electricity))

S/110/60/000/009/002/008
E021/E455

AUTHORS: Ovcharenko, F.D., Corresponding Member AS UkrSSR,
Blokh, G.A., Candidate of Technical Sciences,
Ol'shanskaya, L.A., Engineer and
Gudovich, N.V., Candidate of Chemical Sciences

TITLE: Pyrophillite - A New Filler for Cable Rubbers

PERIODICAL: Vestnik elektropromyshlennosti, 1960, No.9, pp.5-8

TEXT: The pyrophillite found in the Ukraine was studied as a possible dielectric filler for cable rubber. Physico-chemical tests showed that it consisted of 85% finely dispersed pyrophillite with 15% quartz and a trace of talc. The optical constants are close to those of talc. Experiments were carried out on the rubber KC -50 (KS-50) which contains 24.2% talc and 49% chalk. It was shown that replacing either or both talc and chalk by pyrophillite had no effect on the electrical characteristics. After five days soaking in water they were practically unchanged. Similar results were obtained when pyrophillite was substituted for fillers in other rubbers. Experiments were also carried out

Card 1/2

S/110/60/000/009/002/008
E021/E455

Pyrophillite - A New Filler for Cable Rubbers

on the rubber KS-50 to find the effect on the physico-mechanical properties of the use of pyrophillite instead of the other fillers In particular, the stability after prolonged ageing at 12°C was investigated. Very similar results were obtained by using pyrophillite. Thus, using pyrophillite in quantities up to 50 to 60% results in satisfactory properties of the insulating rubber The presence of rich sources of pyrophillite in the Ukraine have, therefore, a substantial technical and economic value. There are 6 tables and 2 Soviet references.

SUBMITTED May 5, 1960

Card 2/2

GUDOVICH, N V

25160

S/021/61/000/004/012/013
D213/D303

15.9130

AUTHORS: Ovcharenko, F.D., Corresponding Member AS UkrSSR, Blokh, H.A., Hudovych, N.V., and Shchychko, Z.V.

TITLE: Use of activated diatomite for strengthening rubber

PERIODICAL: Akademiya nauk Ukrayins'koyi RSR. Dopovidi, no. 4, 1961, 504 - 507

TEXT: This paper describes the effects of small additions of amines on the tensile strength of rubber. The following amines were used: 1) R_2NH (Armine-2HT), where R is the residue of margaric ($C_{16}H_{33}COOH$) or nonadecanoic ($C_{18}H_{37}COOH$) acids. This is a white waxy substance melting at 53°C and soluble in benzene; 2) $RNHCH_2CH_2CH_2NH_2$ (Diamine S), where R is a mixture of residues of pentadecanoic ($C_{14}H_{29}COOH$) and margaric ($C_{16}H_{33}COOH$) acids. This is a yellow waxy substance melting at 29-30°C, and soluble in isoamyl

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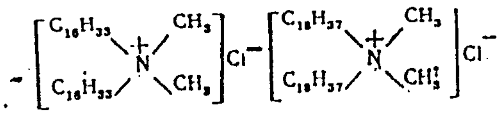
23160

S/021/61/000/004/012/013
D213/D303

Use of activated diatomite ...

alcohol and methanol; 3)

3. 

(Arquade-2HT), a yellow substance melting at 69-70°C, and soluble in benzene and dichloroethane; 4) $C_{17}H_{33}CONH_2$ (Armide-0), a white waxy substance insoluble in water but soluble in organic solvents, melting at 68-69°C. The experimental results are given in Table 2. A second set of experiments was conducted by mixing the amines directly into the raw rubber preparation. The results obtained showed a considerable improvement in the tensile strength of the rubber and twofold acceleration in reaction time. Comparison of results shows that the activity of the amines deposited on the diatomite is less than the activity of the directly admixed amines. The reduced activity in the case of the activated diatomites can be explained

Card 2/4

S/021/61/000/004/012/013
D213/D303

Use of activated diatomite ...

by the elementary structure of the diatomite and the active additive. Apparently one of the amino groups of these compounds combines with the structure of the diatomite, thus reducing the availability of these groups for the formation of aminopolysulphide complexes which on decomposition produce active sulphur. The greater activity of the directly admixed amines is, therefore, simply explained by the greater concentration of the active amines which also help to accelerate the reaction. The action of the amines is to give the diatomite surface a greater affinity for the rubber. This tends to distribute the diatomite better through the mass of the rubber thus further increasing its strength. There are 3 tables and 3 Soviet-bloc references.

ASSOCIATION: Instytut zahal'noyi ta neorhanichnoyi khimiyi AN URSR, Dnipropetrovs'kyy khimiko-tekhnolohichnyy instytut (Institute of General and Inorganic Chemistry, AS UkrSSR, Dnipropetrovsk Institute of Industrial Chemistry)

SUBMITTED: December 26, 1960

Card 3/4

[illegible]DOVICH, F.V.; [illegible], G.

Electrodeposition of lead from a pyrophosphate bath. Ukr. khim. zhur. [illegible] no. 1:121-124 '61. (MIRA 14:?)

1. Kiyevskiy ordena Lenina politekhnicheskiy institut.
(Lead plating)

GUDOVICH, N.V.; KUKOVSKIY, Ye.G.; OSTROVSKAYA, A.B.

X-ray study of montmorillonite containing substitution cations. Rent. min. syr. no.2:36-40 '62. (MIRA 16:11)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.

S/021/62/000/011/011/013
D202/D307

GUDOVICH, N.V.

AUTHORS: Kal'onov, Ye. M., Hudovych, N. V. and Kukovs'kyy, Ye.H.

TITLE: The effect of long-chain quaternary ammonium salts on the porosity of bentonite clays

PERIODICAL: Akademiya nauk Ukrayins'koyi RSR. Dopovidi, no. 11, 1962, 1479-1481

TEXT: The authors studied the possibility of improving the swelling characteristics of bentonite clays on firing, to obtain the desired porous light-weight product used as a filler in concrete and ferroconcrete. Only few natural bentonites develop the required porosity in the absence of any additives. Using Kurtsevo, Cherkassy and Gorbsk bentonites, it was found that swelling may be induced during firing, by replacing the natural inorganic exchange complexes of montmorillonite with tetraalkylammonium cations (the alkyl groups being large). The beneficial action of this treatment is ascribed to the fact that the quaternary ammonium cations adsorbed on montmorillonite are only partially removed on heating to

Card 1/2

The effect of ...

S/021/62/000/011/011/013
D202/D307

400 - 500°C, leaving a layer of C which is then oxidized to CO_2 as the temperature rises above 800°C. Owing to the low softening temperature of montmorillonite the CO_2 may then exert a bloating action, giving rise to products of density as low as 0.22 g/cm^3. The required effect may be controlled by selecting the length and structure of the alkyl groups in the organic cation.

ASSOCIATION:	Instytut zahalnoyi ta neorhanichnoyi khimiyi AN URSR (Institute of General and Inorganic Chemistry of the AS UkrSSR)
PRESENTED:	by F. D. Ovcharenko, Academician
SUBMITTED:	January 31, 1962

Card 2/2

GUDOVICH, N.V., kand. khim. nauk; OVCHARENKO, F.D., akademik, doktor khim. nauk; CHUGAY, O.D. [Chuhai, O.D.]; BORISOVA, T.S. [Borysova, T.S.]; CHORNOUS, D.G. [Chornous, D.H.]; ZAKANAVSKAYA, T.I. [Zakanavs'ka, T.I.]

Effect of the nature of filler surface on rubber strengthening. Khim. prom. [Ukr.] no.2:45-48 Ap-Je '63. (MIRA 16:8)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR (for Gudovich, Ovcharenko). 2. Kiyevskiy zavod "Chervoniy gumovik" (for Chugay, Borisova, Chornous, Zakanavskaya).

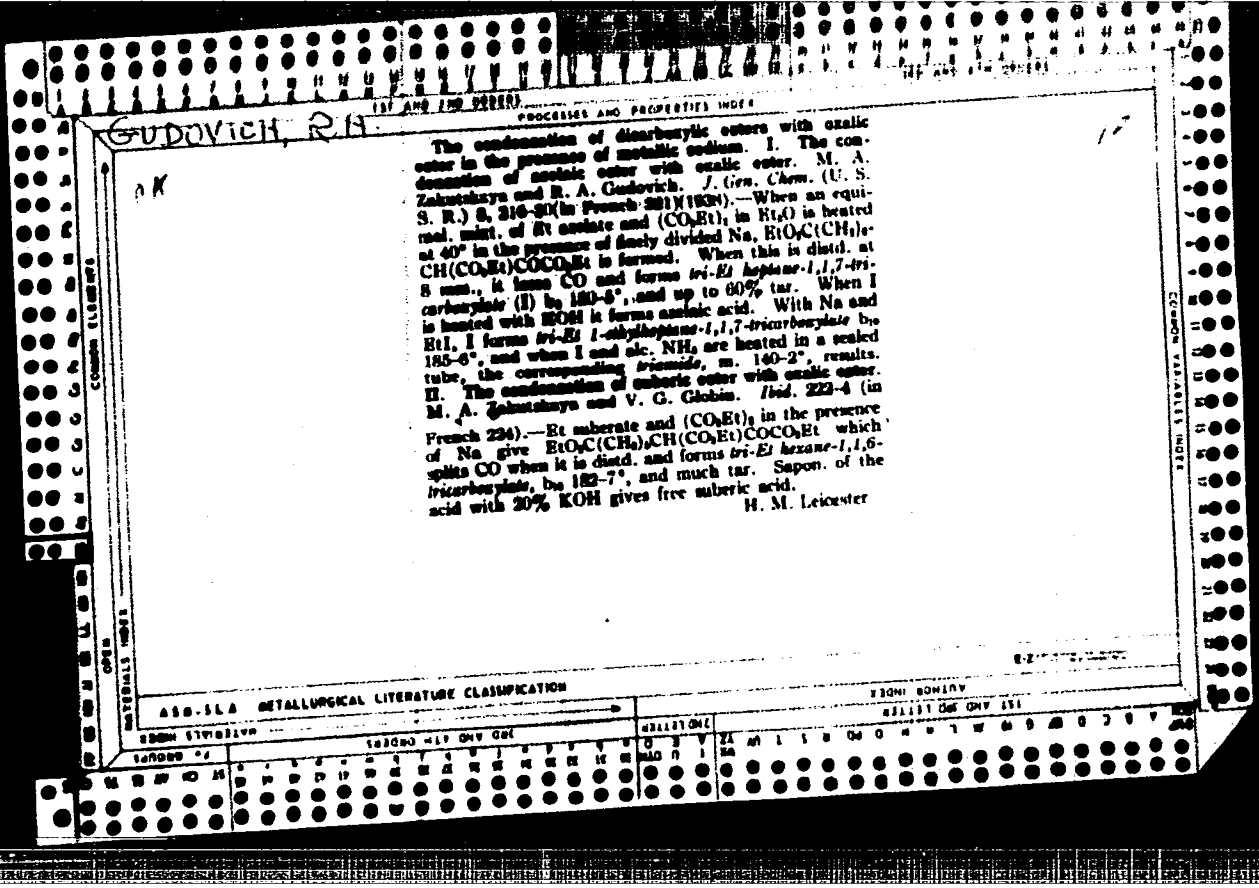
GUDOVICH, N.V.; OVCHARENKO, F.D.

Formation of organophilic montmorillonite in ion exchange. (MIRA 17:2)
Koll. zhur. 25 no.4:407-411 Jl-Ag '63.

1. Institut obshchey i organicheskoy khimii AN UkrSSR, Kiyev.

CHUYKO, Ye.A.; BLOKH, G.A., OVCHARENKO, F.D., [illegible], N.V., [illegible], E.V.

Activation of kaolin with the cation-active substance "alkamon OS-2." Kozh.-obuv. prom. 6 no.9:13-16 S '64.
(MIRA 17:12)



1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

GUDOVICH, R.A.

17

nK

The condensation of dicarboxylic esters with oxalic
ester in the presence of metallic sodium. I. The con-
densation of azelaic ester with oxalic ester. M. A.
Zakutskaya and R. A. Gudovich. *J. Gen. Chem.* (U. S.
S. R.) 8, 316-20(in French 321)(1938).—When an equi-
mol. mixt. of Et azelate and $(CO_2Et)_2$ in Et_2O is heated
at 40° in the presence of finely divided Na, $EtO_2C(CH_2)_6$-
$CH(CO_2Et)COCO_2Et$ is formed. When this is distd. at
8 mm., it loses CO and forms *tri-Et heptane-1,1,7-tri-*
carboxylate (I) b_8 180-6°, and up to 60% tar. When I
is heated with KOH it forms azelaic acid. With Na and
EtI, I forms *tri-Et 1-ethylheptane-1,1,7-tricarboxylate* b_{10}
185-6°, and when I and alc. NH_3 are heated in a sealed
tube, the corresponding *triamide*, m. 140-2°, results.
II. The condensation of suberic ester with oxalic ester.
M. A. Zakutskaya and V. G. Globin. *Ibid.* 222-4 (in
French 224).—Et suberate and $(CO_2Et)_2$ in the presence
of Na give $EtO_2C(CH_2)_5CH(CO_2Et)COCO_2Et$ which
splits CO when it is distd. and forms *tri-Et hexane-1,1,6-*
tricarboxylate, b_{10} 182-7°, and much tar. Sapon. of the
acid with 20% KOH gives free suberic acid.

H. M. Leicester

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

AUTHOR INDEX

GUDOVICH, R. A.

Gusovich, R. A.

" On Methods of Quantitative Determination of the Protein in Blood Plasma and Serum." Tashkent State Medical Inst imeni V. M. Molotov. Tashkent, 1955. (Dissertation for the degree of Candidate in Biological Sciences)

SO: Knizhaya letopis' No. 27, 2 July 1955

VOLYNSKIY, A.S., prof.; GUDOVICH, R.[illegible]; SUKHAREVA, [illegible]; [illegible]OK, F.[illegible]

Salting-out method of isolating the serum protein properdin.
Sbor.nauch.trud.TashGMI 22:319-324 '62.
(MIRA 16:10)

1. Kafedra biokhimii (zav. kafedroy - prof. A.S.Volynskiy) Tashkentskogo gosudarstvennogo meditsinskogo instituta.

GUDOVICH, R.P.

Subvital Congo red test in children with rheumatic diseases. Vopr.pediat. 18 no.2:43-46 Mr '50. (CLML 19:3)

1. Of the Propedeutic Clinic for Children's Diseases (Head -- Docent V.N.Gol'dina) and of the Faculty of Pediatrics (Head -- Prof. L.D.Shteynberg), Voronezh Medical Institute.

BUGLAY, B.M.; ZHUKOV, Ye.V.; GUDOVICH, V.A.; RODIONOVA, V.K.

TSNIIMOD-54 carbomide prime coating for transparent wood finishes. Der.prom. 5 no.5:3-6 My '56. (MLRA 9:8)

1. TSentral'nyy nauchno-issledovatel'skiy institut mekhanicheskoy obrabotki drevesiny.
(Wood finishing) (Urea)

GUDOVICHEV, N.Ye., inzh.; SAMARIN, I.Ya., inzh.

Experience in the production of higher aliphatic alcohols by the reduction method. Masl.-zhir.prom. 25 no.9:39-41 '59.
(MIRA 12:12)

(Alcohols)

UTHORS: Boldyrev, L.I. (Senior foreman of the large section shop) and
Gudovshikov, K.S. (Research Engineer, Central Works Laboratory).

ITLE: Organization of roll changing on a 650-mill. 130-3-16/22 (Organizatsiya perevalok na stane 650.)

ERIODICAL: "Metallurg" (Metallurgist), 1957, No.3, pp.31-33. (U.S.S.R.).

BSTRACT: The finishing line of the 650-mill at the Azovstal' Works consists of two three-high stands and one two-high stand arranged in one line, the maximal diameter of the working rolls being 680 mm. The mill rolls two types of rail, I-section girders, channels, squares, large angles and other sections. The senior mill foreman, P.D. Krishtofovich has organized his roll-changing team so effectively that the roll-changing time has been reduced by 7 minutes. Details of the organization are given in this article. Krishtofovich pays great attention to the preliminary preparation of stands and rolls, the correct positioning of roll-men and mill operators, the rational utilization of cranes, and maintenance of the sequence of operations. It is considered that the adoption by other teams of these organizational methods would enable mill productivity to be increased by 2 - 3%. There are two diagrams and one photograph.

Card 1/1

SSOCIATION: "Azovstal'" Works (Zavod "Azovstal'").

VAILABLE:

SOV/130-58-8-10/18

AUTHORS: Gorenshteyn, M.M., and Kologrivov, N.P., Candidates of Technical Sciences, Pogorzhel'skiy, V.I., Gudovshchikov, K.S., Shapiro, Yu.A., Engineers

TITLE: An Effective Method of Rolling Roll Surfaces (Effektivnyy sposob nakatki valkov)

PERIODICAL: Metallurg, 1958, Nr 8, pp 25 - 27 (USSR)

ABSTRACT: The roughening of roll surfaces is especially advantageous in the first few days of operation but, the author points out, not all methods of roughening are equally effective. The 1150 blooming mill at the "Azovstal'" Works has forged 55 Kh steel rolls which, since 1949, have had 20-30 mm long notches cut on their surface with pneumatic chisels, a zig-zag line also being cut in the first pass (Figure 1). This proved effective only for the first 2-3 shifts. Metallisation was tried in various forms including bead welding, but these were found unsuitable because of crack extensions and excessive vibration. After a study of methods used at the imeni Kirov Works and the Kuznetskiy metallurgicheskiy kombinat (Kuznetsk Metallurgical Kombinat), the "Avostal'" Works adopted a special system. In this, a toothed cutter up to

Card1/2

An Effective Method of Rolling Roll Surfaces SOV/130-58-8-10/18

100 mm wide with a curvature to fit the roll surface is used to form rings which are then cut up by a 6KhVS-steel roller, 50-80 mm wide (Figure 3), to give a surface covered in pyramids 2.5 mm high and 5 x 5 at the base. A complete blooming-mill roll is processed by one man in three hours. Lead prints taken daily have shown that the pyramids wear slowly and crazing is delayed and orientated along pyramidal bases. The method has been adopted for all reducing stands.
There are 3 figures.

ASSOCIATION: Zhdanovskiy metallurgicheskiy institut (Zhdanov Metallurgical Institute) and Zavod "Azovstal'" ("Azovstal'" Works)

Card 2/2 1. Rolling mills--Performance 2. Rolling mills--Equipment

GUDOVSHCHIKOV, S. S.

IA 6/4978

Aug 48

USSR/Engineering
Metallurgical Plant
Furnaces, Open Hearth

"Reconstruction of 150-Ton Martin Furnaces at the Kuznets Metallurgical Factory," S. S. Gudovshchikov S. I. Spirin, Engineers, Kuznets Metallurgical Combine, 8 pp

"Stal'" No 8

Reconstruction of 150-ton open hearth furnaces of Kuznets plant, which increased their capacity to 185 and 350 tons, resulted in a considerable increase in their hourly production rate. Certain modifications

6/49T8

Aug 48

USSR/Engineering (Contd)

had to be made in view of new requirements. Considerable lack of proportion is observed between increased productivity of furnace and almost unaltered volume of checker brick and slag pockets. Sketches show furnaces and dimension tables.

6/49T8

GUDOVSHCHIKOVA, I.V.; LEBEDEV, D.V.

Discussion on general problems of biology in Poland. Bot.zhur. 41 no.3:445-449 Mr '56. (MLRA 9:8)
(Poland--Biology)

GUDOVSHCHIKOVA, I.V.; LEBEDEV, D.V.

"Guide to Russian medical literature." Edited by S.Adams, F.B. Rogers. Reviewed by I.V. Gudovshchikova, D.V. Lebedev. Sov. zdrav. 19 no7:88-89 '60. (MIRA 13:8)
(BIBLIOGRAPHY—MEDICINE) (ADAMS, S.) (ROGERS, F.B.)

GUDOVSKAYA, L. A.

The Second All-Union Conference on the Preparation and Analysis of High-Purity Elements, held on 24-28 December 1963 at Gorky State University im. N. I. Lobachevskiy, was sponsored by the Institute of Chemistry of the Gorky State University, the Physicochemical and Technological Department for Inorganic Materials of the Academy of Sciences USSR, and the Gorky Section of the All-Union Chemical Society im. D. I. Mendeleyev. The opening address was made by Academician N. M. Zhavoronkov. Some 90 papers were presented, among them the following:

V. P. Gladyshev, L. A. Gudovskaya, A. I. Ivankova, and D. P. Synkova. Fluorimetric and oscillographic polarography methods for determining Te and Se, respectively, in high-purity bismuth, with sensitivity of 10^{-5} to 10^{-6}%.

Zhur Anal Khim 19 No. 6, 1964 (p. 777-79)

GUDOZHNIK, N.V.

Modification of terminal panels of selective communication lines.
Avtom., telem. i sviaz' 2 no. 8:35 Ag '58. (MIRA 11:8)

1. Starshiy elektromekhanik Zaporozhskoy distantsii signalizatsii i svyazi Stalinskoy dorogi.
(Railroads--Telephone--Equipment and supplies)

GUDNIN, N.N.

Efficient method for extending the receiving lines of offshore pumping stations. Izv. vys. ucheb. zav.; neft' i gaz 7 no.9:89-92 '64. (MIRA 17:12)

1. Azerbaydzhanskiy institut nefti i khimii im. M. Azizbekova.

GUDRAMOVICH, V.S. (Dnepropetrovsk); MOSSAKOVSKIY, V.I. (Dnepropetrovsk)

Contact problem for a flexible ring reinforcing a cyclindrical shell. Izv.AN SSSR.Otd.tekh.nauk.Mekh.i mashinostr. no.2:153-156 Mr-Ap '61. (MIRA 14:4)

(Elasticity)

GUDRINIECE

see also: GUDRINIYETS

GUDRINIYETSE, E. [Gudriniece, E.]; IYEVIN'SH, A. [Ievins, A.]; VANAG, G. [Vanags, G.]; KREYTSBERG, D. [Kreicbergs, D.]

Sulfonation of β-dicetones. Report No.15: Bindonesulfonic acid and its salts. Vestia Latv ak no.2:111-114 '61.

1. Institut khimii AN Latviyskoy SSR.

GUDRINIECE, E.; IEVINS, A.

Academician Gustavs **Vanags.** Vestis Latv ak no.3:123-128 '61.

GUDRINIYETSE, E. [Gudriniece, E.](Riga); IYEVIN'SH, A. [Ievins, A.](Riga);
VANAG, G. [Vanags, G.](Riga); STIPNIYETSE, Kh. [Stipniece, H.](Riga);
MATEUS, E. [Mateuss, E.](Riga)

Sulfonation of β-diketones. XIII. Salts of 5-phenylcyclohexanedione-1, 3-sulfo-2-acid (phenidonsulfo-2-acid. Vestis Latv ak no.8:95-98 '60. (EEAI 10:9)

1. Akademiya nauk Latviyskoy SSR, Institut khimiyi.

(Ketones) (Sulfonation) (Phenylcyclohexanedione)
(Phenidone) (Sulfonic acids)

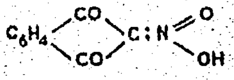
GUDRINIETSE, E. Yu.

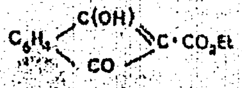
1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

A 2
3

ructure of 2-nitroindane-1:3-dione and its salts. G. Y. Wanag nd E. Yu. Gudrinietse (*J. gen. Chem., USSR*, 1949, 19, 1542—1551 [U.S. transl., 1551—1559]).—Examination of the salts of 2-nitroindane-1 : 3-dione (I) and of 2-carbethoxyindane-1 : 3-dione (II) suggests that I, in aq. solution is in the ketonitronic acid form (*A*), and II in the enol form (*B*). A red colour with $FeCl_3$


(A)


(B)

is given by II, but no colour is obtained with I. Most of the salts are yellow but the Hg salts of II are white, suggesting attachment to C rather than O. The Fe^{II} salts resemble each other, that of II, $C_{11}H_{11}O_4Fe$, giving red-brown crystals, and of I violet black with similar habit, and it is suggested that both these salts are of the enol form. Several salts yellow in aq. soltion are white in the dry state.

E. J. H. Birch.

Lab. Org. Chem., Latvian State U- Riga

A.S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

CA

10

The structure of 2-nitro-1,3-indandione and of its salts. G. Ya. Vanag and E. Yu. Gudrinietze (Latvian State Univ., Riga). *J. Gen. Chem. U.S.S.R.* 19, 1551-3(1949)(Engl. translation).—See *C.A.* 44, 1087*a* B. L. M.

1951

GUDRINIYETSE, E. Yu. In Latvian

GUDRINIYETSE, E. Yu. -- "Growing Substances with Condensed Nuclei." Latvian State U, 1952. In Latvian (Dissertation for the Degree of Candidate of Chemical Sciences)

SO: Izvestiya Ak. Nauk Latviyskoy SSR, No. 9, Sept., 1955

GUDRINETSE, E.Yu.

1Y

USSR/ Chemistry - Analytical chemistry

Card 1/1 : Pub. 145 - 3/10

Authors : Ievinsh, A. F., and Gudrinetse, E. Yu.

Title : Determination of K with sodium tetraphenyl borate

Periodical : Zhur. anal. khim. 9/5, 270-274, Sep-Oct 1954

Abstract : A new method of volumetric determination of K, with the aid of sodium tetraphenyl borate, is described. The K is separated by a surplus of titrated sodium tetraphenyl borate solution (according to the Ruedorf and Zannier method), and the surplus of the reagent is determined not by titration with a silver nitrate solution but with an ammonium chloride solution. Results obtained by the new volumetric determination methods are tabulated. Eight references: 5-German; 1-USA and 2-USSR (1925-1953). Tables.

Institution : State University, Riga, Latv-SSR

Submitted : July 15, 1954

GUDRINIYETS, YE. [YU.]

USSR.

Determination of potassium with sodium tetraphenylborate. A. Ievinš and E. Gudriniece. *J. Anal. Chem. U.S.S.R.* 9, 301-5(1954)(Engl. translation).—See *C.A.* 49, 2940e. L. H.

Gudriniece, E.

CH

Chloromethylation of 2-methylnaphthalene. O. Vanags and E. Gudriniece. *Latvijas PSR Zinātņu Akad. Vēstis* 1954, ~~No. 11(Whole~~ No. 89), 103-10(in Russian).—(2-Methyl-1-naphthyl)methyl chloride (I), m. 62°, was prepd. in 84% yield by heating 2-methylnaphthalene with paraformaldehyde, H_3PO_4, and concd. HCl at 85–90° for 3–4 hrs.; picrate, m. 99°. *N*-[(2-Methyl-1-naphthyl)methyl]piperidine (II), yellow-green oil, was prepd. by mixing under cooling a soln. of I in Et_2O with piperidine. The picrate of II, m. 165°, hydrolyzed in H_2O. The pyridinium chloride of I, m. 130° (from EtOH), was prepd. by storing a mixt. of soln. of I in Et_2O with dry pyridine for several days. *N*-[(2-Methyl-1-naphthyl)methyl]acetamide, m. 138°, prepd. by boiling a soln. of I in C_6H_6 with dry acetamide, was sol. in EtOH and glacial AcOH, but insol. in H_2O. HCl salt of *S*-[(2-methyl-1-naphthyl)methyl]thiourea, m. 228° (decompn.), was prepd. by heating I with thiourea on H_2O bath for 30-60 min. (2-Methyl-1-naphthyl)acetic acid (III), yellowish needles, m. 183–5°, yield 65%, was prepd. by refluxing I with NaCN in EtOH, and sapon. of the resulting (2-methyl-1-naphthyl)acetonitrile with NaOH, with the addn. of small amts. of H_2O_2; picrate, m. 163–4°, crystd. in yellow needles. *N*-(2-Methyl-1-naphthyl)acetamide (IV), m. 155°, was prepd. by heating III with $SOCl_2$ for 20–30 min. on water bath, and treating the product with NH_3. Hydrolysis of IV with NaOH gave III. (2-Methyl-1-naphthyl)acetanilide, m. 176°, was prepd. as IV, but substituting aniline for NH_3. Me ester of III, yellowish oil, b. 216–20°, was prepd. by refluxing IV with MeOH and concd. H_2SO_4 for 5 hrs. Andrew Dravnieks

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USSR .

Chloromethylation of 1-chloronaphthalene. E. Gudriniece, L. Rozite, and E. Lepins. *Latvijas PSR Zinatnu Akad. Vestis* 1954, No. 11 (Whole No. 88), 111-14 (in Russian).—(1-Chloro-4-naphthyl)methyl chloride (I), yellow oil, b_1 110° (decompn.), was prepd. by heating 1-chloronaphthalene with paraformaldehyde in a mixt. of 90 g. glacial AcOH, 100 ml. concd. HCl, and 33 g. 85% H_3PO_4 at 90° for 5 hrs. I burns the skin. *N*-[(1-Chloro-4-naphthyl)methyl]pyridinium chloride, a very hygroscopic substance, was prepd. by treating I with C_5H_5N in abs. Et_2O at room temp. for 24 hrs. *N*-[(1-Chloro-4-naphthyl)methyl]piperidine (II) (picrate, m. 140°) was prepd. similarly from I and piperidine. 1-Chloro-4-naphthylacetic acid (III), m. 169°, was prepd. from I by heating on H_2O bath with NaCN in EtOH soln. for 7 hrs., boiling the product with NaOH for 15 hrs., adding water, and acidifying. III amide, m. 178-9°, insol. in H_2O, sol. in EtOH and AcOH, was prepd. by treating III with $SOCl_2$ and then with NH_3. III anilide m. 197°.

Andrew Dravnieks

GUDRINIYETSE, E. YU.

USSR/Chemistry

Card 1/1

Authors : Gudrinietse, E. Yu.; and Vanag, G. Ya.

Title : Reaction of certain alcohols with 2-nitroindandione-1, 3.

Periodical : Zhur. Ob. Khim, 24, Ed. 4, 725 - 729, April 1954

Abstract : During the heating of nitroindandione with a large surplus of isopropyl or primary isobutyl alcohol takes place the splitting of the fivemembered nitroindandione ring and a corresponding ester of omega-nitroacetophenone-o-carboxylix acid is formed. Heating of nitroindandione with a large surplus of isopropyl or benzyl alcohol or acenaphthenol leads to oxidation of these alcohols into aldehyde or ketone and nitroindandione reduces to nitrosoindandione. Five references; 3 USSR since 1939; 1 German since 1888; 1 English 1933. Table.

Institution : Latvian State University

Submitted : August 31, 1953

GUDRINIYETS, Ye.

Nitrodimedon and some of its derivatives. E. Gudriniece, O. Neiland, and G. Vanags. *J. Gen. Chem. U.S.S.R.* 24, 1837-9(1954)(Engl. translation).—See C.A. 49, 13128f.
B. M. R.

(2)

GUDRINIYETSE, YE.

USSR/Chemistry - Synthesis methods

Card 1/1 Pub. 151 - 31/37

Authors : Gudrinietse, E.; Neyland, O.; and Vanag, G.

Title : Nitrodimedone and some of its derivatives

Periodical : Zhur. ob. khim. 24/10, 1863-1866, Oct 1954

Abstract : A new method for the derivation of nitrodimedone through nitration of dimedone with fumic nitric acid is presented. Certain nitrodimedone salts with inorganic and organic bases, well soluble in water and alcohol, are described. The derivation of chloro- and bromo-derivatives of nitrodimedone is explained. The preparation of monosemicarbazone and monophenylhydrazone of nitrodimedone is described. Eight references: 7-USSR and 1-USA (1907-1953).

Institution : The Latvian State University

Submitted : May 7, 1954

GUDRINIYETS, YE.

✓ Chloromethylation of tetralin. G. Vanags and E. Gudriniece. *Latvijas PSR Zinātņu Akad. Vēstis* 1955, No. 6 (Whole No. 91), 119-24(in Russian).—T[illegible]in (66 ml.), 28 g. $(CH_2O)_x$, 63 ml. glacial AcOH, [illegible] cryst. H_3PO_4, and 91 ml. concd. HCl at 85-90° stirred 4 hrs. gave 60% 1,2,3,4-tetrahydro-6-chloromethylnaphthalene (I). With excess II, 10% 5,8-bis(chloromethyl)-1,2,3,4-tetrahydronaphthalene was obtained in addn. to I. The 6-piperidino-methyl analog (II of I) was prepd. by treating I in Et_2O with piperidine at room temp. II decompd. on distn. Bubbling dry HCl through II in Et_2O gave II.HCl, very hygroscopic. II picrate, m. 150°. 1-(1,2,3,4-Tetrahydro-6-naphthylmethyl)pyridinium chloride, m. 115°, was prepd. (88.5% yield) from 7.2 g. I, 20 ml. abs. Et_2O, and dry pyridine. $H_2NC(SR):NH.HCl$ (R = 1,2,3,4-tetrahydro-6-naphthylmethyl), m. 212°, was prepd. (90% yield) by heating 7.2 g. I with 6 g. thiourea. RCO_2H was prepd. (42% yield) refluxing crude I with KCN in EtOH and hydrolyzing the nitrile with aq. NaOH; the hydrolysis was [illegible], and formation of resinous products was minimized by adding small amts. of 3% H_2O_2 at intervals. RCO.NHPh, m. 139°, was obtained by method similar to that described (C. A. 50, 2711). A. [illegible]

GUDRINIYETSE, E.

3

Phys

Potassium tetraphenylborate. A. Ievins, J. Ozols, and E. Gudriniece. *Latvijas PSR Zinātņu Akad. Vēstis* 1955, No. 7, 135-8 (in Russian).—K[B(C_6H_5)$_4$], d_4 1.174, crystd. from Me_2CO as tetragonally bipyramidal crystals. The lattice was tetragonal, with 2 mols. per cell and a = 10.05, c = 7.97 A. A. Dinyniks

GUDRINIYETSE, Ye.

Titrometric determination of aliphatic and aromatic amines with sodium borotetraphenylate. A. Ievinš and E. Gudriniece (State Univ., Riga, Latvia). *Zhur. Anal. Khim.* 11, 735-8(1956).—$Na[B(C_6H_5)_4]$ pptd. a no. of amines in 1% AcOH solns. in dilns. ranging from 1:2200 for ethylamine to 1:200,000 for dibutylamine, aminocyclohexane, and dicyclohexylamine. Most of the amines formed insol. ppts. Difficulties were encountered in drying these ppts. to const. wt. and, therefore, a volumetric procedure was worked out. To a soln. contg. an amine add excess $Na[B(C_6H_5)_4]$ soln. of known concn. Filter and in the filtrate ppt. excess $[B(C_6H_5)_4]^-$ with $AgNO_3$ as $Ag[B(C_6H_5)_4]$. Filter and titrate excess Ag^+ with NH_4SCN. The analyzed soln. must be free of ions forming ppts. with Ag^+. The analysis is best carried out in HNO_3, H_2SO_4, or AcOH solns. at pH approx. 3. M. Hosch

Chem

GUDRINIYETSE, E. YU.

2

Chloromethylation of anthracenes. B. Gudriniece and G. Vanags (Latvian State Univ., Riga). *Zhur. Obshchei Khim.* 26, 3123-5(1956); cf. Miller, *et al.*, *C.A.* 50, 3307*d*.—Heating with stirring 4.5 hrs. a mixt. of 35.0 g. anthracene, 22 g. paraformaldehyde, 130 ml. AcOH, 10.6 ml. 85% or 13.2 g. solid H_3PO_4, and 80 ml. concd. HCl at 80-5°, followed by diln. with H_2O gave 83.9% crude *9,10-bis(chloromethyl)anthracene* (I), m. 280° (darkens at 262°; from xylene). Treated with CrO_3 it gave anthraquinone. When the mixt. was made up as above and was heated gradually to 80-5°, much tar was formed from which some anthracene might be recovered along with 14.7% bis(chloromethyl) deriv. For best results the above mixt. must be immersed into the bath which had been preheated to 80-5°. Refluxing I with excess piperidine 20-30 min. gave 94.6% *9,10-bis(piperidinomethyl)anthracene*, m. 204° (from EtOH-Me_2CO). Heating I with $PhNH_2$ at 100° 2 hrs. similarly gave 81.5% *9,10-bis(anilinomethyl)anthracene*, m. 208° (from dioxane), sol. in mineral acids, repptd. on diln. G. M. Kosolapoff

~~GUDRINIECE, E.~~, GUDRINIYETSE, Ye.

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Halogen derivatives of nitrodimedon. O. Neiland, E. Gudriniece, and G. Vanags (State Univ., Riga, Latvia). *Zhur. Obshchei Khim.* 26, 3139-43(1956); cf. C.A. 50, 13128*f*.—Refluxing 6 g. iodine, 70 ml. CCl_4, 3.2 g. SO_2Cl_2, and 0.4 g. $AlCl_3$ 5 min. gave on distn. a distillate contg. ICl, which with 2 ml. dioxane gave an orange compd. (I), *$C_4H_8O_2.2ICl$*, decomp. 103° (cf. Terent'ev, *et al.*, C.A. 49, 12327*d*). Treatment of 1 g. 4-iodo-1,1-dimethyl-1,3-cyclohexanedione in 5 ml. AcOH with 1 ml. soln. prepd. from 2 ml. AcOH and 0.5 ml. fuming HNO_3 gave 48% *4-nitro-4-iodo-1,1-dimethyl-1,3-cyclohexanedione*, decomp. 144°, also formed in 92% yield on treatment of 1.85 g. *4-nitro-1,1-dimethyl-1,3-cyclohexanedione* (II) with 2.07 g. I in AcOH, followed by diln.; in the 2nd case the product decomp. 146°. Shaking 4-chloro-4-nitro-1,1-dimethyl-1,3-cyclohexanedione with 0.1*N* NaOH gave II and *$Me_2C(CH_2CO_2H)_2$*, m. 103°. 4-Bromo-4-nitro-1,1-dimethyl-1,3-cyclohexanedione (III) with $PhNH_2$ in C_6H_6 gave *II.$PhNH_2$*, m. 150°, and *p-$BrC_6H_4NH_2$*. Similarly *p*-$MeC_6H_4NH_2$ gave *II.p-$MeC_6H_4NH_2$*, m. 101°, and 2,4-$BrMeC_6H_3NH_2$, isolated as the *N-Ac deriv.*, m. 117°. *m*-$MeC_6H_4NH_2$ gave *II.4,3-$BrMeC_6H_3NH_2$*, m. 144°, which with NaOH gave *4,3-$BrMeC_6H_3NH_2$*, m. 81-2°. *o*-$MeC_6H_4NH_2$ yielded a ppt. of the salt very slowly and the filtrate treated with BzCl gave a *bromo-o-benzotoluide*, m. 166°; 1-$C_{10}H_7NH_2$ similarly gave a ppt. of *II.4,1-$BrC_{10}H_6NH_2$*, decomp. 144°, which treated with NaOH gave *4,1-$BrC_{10}H_6NH_2$*, m. 100°. 2-$C_{10}H_7NH_2$ gave *II.2-$C_{10}H_7NH_2$*, while the filtrate with AcCl gave *1,2-$BrC_{10}H_6NHAc$*, m. 137°. Mixing C_6H_6 solns. of aromatic amines with the *4-iodo deriv.* of II gave the following similar results: $PhNH_2$ gave 69% *II.p-$IC_6H_4NH_2$*, m. 135° (with NaOH this gave *p-$IC_6H_4NH_2$*, m. 60°); *o*-$MeC_6H_4NH_2$ gave *II.4,2-$IMeC_6H_3NH_2$*, 52%, m. 118-20° (NaOH gave *4,2-$IMeC_6H_3NH_2$*, m. 85°); *m*-$MeC_6H_4NH_2$ gave 69% *II.4,3-$IMeC_6H_3NH_2$*, m. 143° (NaOH gave *4,3-$IMeC_6H_3NH_2$*, isolated as the *N-Bz deriv.*, m. 127°). *p*-$MeC_6H_4NH_2$ gave when used in 2:1 proportion a ppt. of

NeilAND, O. + Etc.

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II.*p-MeC$_6$H$_4$NH$_2$*, while the filtrate treated with BaCl gave *o-iodo-p-benzotoluide*, m. 157°. 4-Chloro deriv. of II (0.8 g.) in 10 ml. C_6H_6 treated with 0.34 g. $PhNH_2$ and kept 12 hrs. gave on evapn. and treatment with concd. NH_4OH 35% *4-anilino deriv.* of II, m. 154°. Similarly, brief heating of 0.8 g. 4-chloro deriv. of II with 0.39 g. *p*-$MeC_6H_4NH_2$ in AcOH to 70° gave the *4-p-toluidino deriv.* of II, m. 188°.

G. M. Kosolapoff

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GUDRINIYETSE, E. Yu. ~~(Gudriniece, E.~~

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Sulfonation of β-diketones with dioxane-sulfur trioxide. E. Gudriniece, E. Dreimanis, and G. Vanags. *Proc. Acad. Sci. U.S.S.R., Sect. Chem.* 110, 601-3(1956)(English translation).—See *C.A.* 51, 8052g. B. M. R.

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GUDRINIYETSE, E.YU.

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Sulfonation of β-diketones with dioxane-sulfur trioxide. E. Gudriniece, E. Dreimanis, and G. Vanags (State Univ., Riga, Latvia). *Doklady Akad. Nauk S.S.S.R.* 110, 780-3 (1956).—To 6 g. dioxane-SO_3 in 50 ml. $(CH_2Cl)_2$ was added 7.3 g. 1,3-indandione below 25°; after 1-2 hrs. the mixt. was dild. with H_2O and the aq. soln. treated with NaCl; pptg. *Na 1,3-indandione-2-sulfonate*, yellow solid, which forms a dihydrate (anhyd. at 100°); use of KCl gave the yellow *K salt;* use of NH_4Cl gave the *NH_4 salt;* the *Et_3NH salt* was prepd. similarly. Similar sulfonation of 2-phenyl-1,3-indanedione gave the *Na salt trihydrate, of 2-phenylindanedione-2-sulfonic acid.* Similarly were obtained: *Na 5,5-dimethyl-1,3-cyclohexanedione-2-sulfonate dihydrate; Na 5-phenylcyclohexane-1,3-dione-2-sulfonate; Na perinaphthindan-1,3-dione-2-sulfonate; Na dibenzoylmethanesulfonate monohydrate.*

G. M. Kosolapoff

RM mt

PHASE I BOOK EXPLOITATION SOV/4226

Riga. Universitate

Uchenyye zapiski, t. 14, Khimicheskiy fakul'tet, 4 (Scientific Notes, Vol 14, Chemistry Faculty, 4) Riga, 1957. 251 p. 550 copies printed.

Eds. (Title page): A.F. Iyevin'sh, Professor, Doctor of Chemistry; L.K. Lepin', Member of the Academy of Sciences Latviyskaya SSR, Professor, Doctor of Chemistry; G.Ya. Vanag, Professor, Doctor of Chemistry; Tech. Ed.: A. Peterson.

PURPOSE: This book is intended for inorganic chemists and scientists in the ceramics industries.

COVERAGE: The book contains 22 articles on organic chemical synthesis and analysis and the physicochemical properties and compositions of ceramic and refractory materials. No personalities are mentioned. Figures, tables, and references accompany the articles.

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Scientific Notes (Cont.)

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GUDRINIYETSE, E. YU.

Sulfonation of aromatic and hydroaromatic compounds with dioxane sulfur trioxide. E. Gudriniece and I. Lielbriedis. *Latvijas Valsts Univ. Kim. Fak., Zinatniskie Raksti* 15, No. 5, 291-5(1957)(in Russian).—1-Methylnaphthalene, α-naphthol, and β-naphthol were sulfonated to 1-methyl-4-naphthalenesulfonic acid (quant. yield), 1-naphthol-2-sulfonic acid (good yield), and 2-naphthol-6-sulfonic acid, resp., with dioxane-SO_3 in $(CH_2Cl)_2$. Bimal C. Pal

2 jj (may)

4E2c jj

4E3d

GUDRINIETSE, E.; NEYLAND, O.; VANAG, G.

[redacted]

Iodonium derivatives of β-diketones. Part 1: The reaction of dimedon with iodozobenzene. Zhur.ob.khim. 27 no.10:2737-2740 O '57. (MIRA 11:4)

1. Latviyskiy gosudarstvennyy universitet.
(Cyclohexnedione) (Benzene)

79-[illegible]-8/56

AUTHORS: Gudriniyetse, E. Yu., Kurgan D. K., Vanag, G. Ya.

TITLE: 2-Nitro-5-Phenylcyclohexandion -1,3 and its Derivatives (2-Nitro- 5-feniltsiklogeksandion -1,3 i yego proizvodnyye).

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, Nr 11, pp. 3087-3092, (USSR)

ABSTRACT: In connection with the authors investigations in the field of the nitroderivatives of cyclic β-diketones they examined 5-phenylcyclohexandion - 1,3 which in its structure resembles 5,5-dimethyicyclohexandion -1,3. The nitroderivative of this hexandion was hitherto unknown. 5-phenylcyclohexandion 1,3 is produced by condensation of benzenealacetone with malinic acid residues. The authors improved the method described in publications by reducing the duration of condensation from 7 hours to 15-30 minutes. The end product obtained in sufficient purity did not need to be recrystallized. The nitration took place according to the pattern used in the case of 5,5-dimethylcyclohexandion -1,3. The aqueous solution of the synthesized 2-nitro-5-phenyl-cyclohexandion -1,3 has strong acid properties and displaces

Card 1/2

2-Nitro 5-Phenylcyclohexandion -1,3 and its Derivatives

79-11-28/56

the carbonic acid from the carbonates, like hydrogen sulfide from sulfides. Therefore the salt formation easily takes place. Some salts of nitrophenylcyclohexandion with organic bases were produced. Thus the synthesis of 5-phenylcyclohexandion -1,3 was improved and 2-nitro 5-phenylcyclohexandion -1,3 hitherto not described in publications was obtained. The following derivatives of this compound were also produced: salts with anorganic and organic bases; 2-halcgen -2-nitro -5-phenylcyclohexandion -1,3; monosemicarbozone, the monoxim and the hydrogen chloride salt of 2-amino - 5-phenylcyclohexandion -1,3. There are 1 table, and 19 references, 4 of which are Slavic.

ASSOCIATION: Latvian State University (Latviyskiy gosudarstvennyy universitet).

SUBMITTED: October 31, 1956

AVAILABLE: Library of Congress

Card 2/2 1. 2-Nitro-5 phenylcyclohexandion-1,3-Derivatives

SOV/156-58-4-34/49

AUTHORS: Gudriniyetse, E. Yu., Iyevin'sh, A. F., Vanag, G. Ya.

TITLE: The Sulfurization of Cyclic β-Diketones With Sulfuric Acid in the Presence of Acetic Anhydride (Sul'firovaniye tsiklicheskikh β-diketonov sernoy kislotoy v prisutstvii uksusnogo angidrida)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 4, pp 746-750 (USSR)

ABSTRACT: The following cyclic β-diketones were sulfurized with 98% sulfuric acid in the presence of acetic anhydride: 5,5-dimethyl cyclohexanedione -1,3; 5-phenyl cyclohexanedione-1,3; indandione-1,3; 2-phenyl indandione-1,3; perinaphth-indandione and bindon. The sulfurized β-diketones were separated in form of sodium or potassium salts. The mechanism of the sulfurization with sulfuric acid in the presence of acetic acid probably proceeds according to intramolecular rearrangements. At first a dark-red colored product is formed. After 5-15 minutes a white deposit (III) precipitates.

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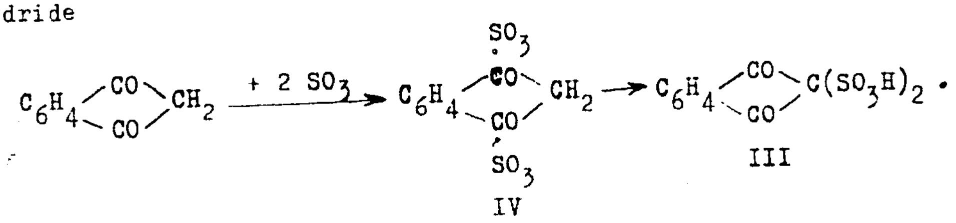
SOV/156-58-4-34/49

The Sulfurization of Cyclic β-Diketones With Sulfuric Acid in the Presence of Acetic Anhydride



$$C_6H_4\begin{matrix}CO\\CO\end{matrix}CH_2 \xrightarrow{+\,2\,SO_3} C_6H_4\begin{matrix}\overset{SO_3}{CO}\\ \underset{\underset{IV}{SO_3}}{CO}\end{matrix}CH_2 \rightarrow C_6H_4\begin{matrix}CO\\CO\end{matrix}\underset{III}{C(SO_3H)_2}\,.$$

There are 1 table and 12 references, 4 of which are Soviet.

ASSOCIATION: Kafedra organicheskoy khimii Latviyskogo gosudarstvennogo universiteta im. Petra Stuchki (Chair of Organic Chemistry at the Latvian State University imeni Petr Stuchka)

SUBMITTED: April 28, 1958

Card 2/2

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SOV/81-59-10-34855

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 10, pp 171-172 (USSR)

AUTHORS: Gudriniece, E., Lielbriedis, I.

TITLE: The Sulfonation of Aromatic and Hydroaromatic Compounds by Dioxanesulfotrioxide. II. The Sulfonation of Tetralin

PERIODICAL: Uch. zap. Latv. un-t, 1958, Vol 22, pp 115-117 (Latvian)

ABSTRACT: 4.2 g of tetralin are added to 7.2 g dioxanesulfotrioxide in 15 ml of dichloroethane, after the end of the reaction the solvent is eliminated, the residue is treated with NaCl solution and the Na-salt of the tetralinsulfonic-2 acid (I acid) is obtained, yield 77.4%; S-benzylthiuronic salt of I, m.p. 160°C. 5 g of the Na-salt of I are heated for 30 min with 15 g PCl_5, it is treated with ice, 1.1 g of acid chloride of I (II) are obtained, m.p. 54 - 58°C; from II by the action of concentrated NH_4OH the amide of I is obtained, m.p. 130°C; by heating (water bath, 30 min) II with aniline the anilide of I is obtained, m.p. 153 - 154°C; by treating II with piperidine the piperidide of I is obtained, m.p. 108 - 109°C; from II and phenylhydrazine the phenylhydrazide of I is obtained, m.p. 160 - 162°C (decomposes). The preceding communication see RZhKhim, 1958, 46736.

L.Ya.

4

Card 1/1

GUDRINIYETSE, E. YU,

79-1-13/63

AUTHORS: Gudriniyetse, E. Yu. , Vanag, G. Ya.

TITLE: Investigations in the Field of Cyclic Arylazo-β-Diketones (Issledovaniya v oblasti tsiklicheskikh arilazo-β-diketonov) I. The Condensation of Indandione-1,3 With Diazo Compounds (I. Kondensatsiya indandiona-1,3 s diazosoyedineniyami)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 1, pp.58-62(USSR)

ABSTRACT: In the present experiments the authors connected indandione-1,3 with different diazotized amines and their derivatives. The reaction takes place most rapidly in an alkaline, somewhat more slowly in a neutral and most slowly in an acid medium. But the final products are most purely obtained in an acid medium. The conversion of indandione with diazo salts in an acid medium is unknown, on the contrary it is pointed out in publications that cyclic diketones only react in this manner in an alkaline medium. The products of the conversion of indandione with diazo compounds - arylazoindandiones - are crystalline compounds and difficult to dissolve in ordinary

Card 1/3

79-1-13/63

Investigations in the Field of Cyclic Arylazo β-Diketones. I. The Condensation of Indandione-1,3 With Diazo Compounds

solvents, especially in glacial acetic acid, dioxane and acetone. The table enumerates the products of the reaction of indandione with diazotized aromatic amines. 2-phenylazo-indanione-1,3 was more thoroughly investigated. It is possible that the name of this compound does not correspond to its structre, as, according to published data, it possesses the structure of phenylhydrazone. The authors for the present are of the opinion that phenylazoindandione exists in two tautomeric forms (formulae I and II) which are in equilibrium. According to conditions the hydrazo- or the azo-form (I and II) reacts. In favor of formula II speaks the solubility of phenylindandione in alkali, under the formation of essolates which re-form the unchanged phenylazo-indandione (II) on acidification. Thus the most favorable conditions for the synthesis of 2-phenylazoindandione-1,3 have been determined and a number of other 2-arylazoindandione-1,3 were synthesized. Some derivatives of phenylazo-indandione-1,3 were produced, too: p-bromophenylazoindandione, p-nitrophenylazoindandione, p-sulfophenylazoindandione, the monoxym of phenylazoindandione, phenylhydrazone and the azine

Card 2/3

79-1-13/63

Investigations in the Field of Cyclic Arylazo-β-Diketones. I. The Condensation of Indandione-1,3 With Diazo Compounds

of phenylazoindandione. There are 1 table, and 12 references, 5 of which are Slavic.

ASSOCIATION: Latvian State University
(Latviyskiy gosudarstvennyy universitet)

SUBMITTED: December 24, 1956

AVAILABLE: Library of Congress

Card 3/3

1. Chemistry 2. Cyclic compounds-Chemical reactions

GUDRINIYETSE, E.YU.

79-1-20/63

AUTHORS: Gudriniyetse, E. Yu. , Iyevin'sh, A. F. , Vanag, G. Ya.

TITLE: The Sulfonation of β-Diketones With Dioxane-Sulfotrioxide (Sul 'firovaniye β-diketonov dioksan - sul'fotrioksidom) II. indandione-1,3-Sulfonic Acid-2 and Its Salts (II. Indandion-1,3-sul'fonovaya-2 kislota i yeye soli)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol.28, Nr 1, pp.95-100 (USSR)

ABSTRACT: In the preceding paper it was shown that indandione-1,3 is easily sulfonated with dioxane-sulfotrioxide (= D - SO$_3$) on which occasion indanione-1,3-sulfonic acid-2 is produced. In publications it is maintained that the sulfonation proceeds over the enole form (see formula (I)), on which occasion the addition product is then formed, which finally in the hydrolysis yields the sulfonic acid in our case (see the process of reaction). It was, however, not possible to isolate the intermediate product (II). On addition of the indandione to the solution of D - SO$_3$ a reaction immediately takes place, the dissolved substance warms up (cooling with water!) and after 2 - 3 minutes indandione-1,3-sulfo-

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79-1-20/63

The Sulfonation of β-Diketones With Dioxane-Sulfotrioxide. II. Indandione-1,3-Sulfonic Acid-2 and Its Salts

nic acid-2 (III) is precipitated. The solution of this precipitate in water does not show any reaction to the sulfate-ion from which follows that the assumed intermediate product (II) does not form. It seems that this reaction takes place immediately with the hydrogen of the active methyl group of indandione-1,3 that in other words the indandione joins the sulfuric-anhydride molecule under the formation of indandione-1,3-sulfonic acid-2 (III). In the case of an excess of D - SO_3 and at elevated temperatures indandione-1,3-disulfonic acid-2,2 (IV) is produced which is isolated as a sodium salt. The crystallized indandionsulfonic acid (III) could not be recrystallized. - Thus it was proved that the indandionsulfonic acid in contrast to 2-nitroindandione is easily converted to the enole-form and that either only one sulfo group or the sulfo group together with the enole group participate in its salification. The cobalt-, nickel- and manganese-salts of indandionsulfonic acid form complex compounds with pyridine. There are 6 references, 5 of which are Slavic.

Card 2/3

79-1-20/63

The Sulfonation of β-Diketones With Dioxane-Sulfotrioxide. II. Indandione-1,3-Sulfonic Acid-2 and Its Salts

ASSOCIATION: Latvian State University
(Latviyskiy gosudarstvennyy universitet)

SUBMITTED: December 24, 1956

AVAILABLE: Library of Congress

Card 3/3 **1. Chemistry 2. Sulfones**

79-28-5-14/69

AUTHORS: Neyland, O. Ya., Vanag, G. Ya., Gudriniyetse, E. Yu.

TITLE: Iodonium Derivatives of β-Diketones (Yodoniyevyye proizvodnyye β-diketonov) II. Thermal Decomposition of the Phenyldimedonyl-iodonium (II. Termicheskoye razlozheniye fenildimedonilyodona)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 5, pp. 1201 - 1205 (USSR)

ABSTRACT: Earlier (Reference 1), the authors had shown that the dimedonium (5,5-dimethylcyclohexandion-1,3) reacts very easily with iodosobenzene with the formation of an iodonium compound --phenyldimedonyliodonium (formula II). The recrystallized and dried product is very stable at usual temperature, contrary to the non-purified one. But also the purified product (II) decomposes on boiling in aqueous solutions. From the decomposition products iodized benzene and the phenyether of iododimedon (III) could be separated, the composition of which is proved by cleavage with acids in phenol and conversion into the phenyl ether of dimedone (IV). This ether is easily cleft

Card 1/3

79-28-5-14/69

Iodonium Derivatives of β-Diketones. II. Thermal Decomposition of the Phenyldimedonyliodonium

into phenol and dimedone by acids. The decomposition of phenyldimedonyliodonium is illustrated by scheme 1. Depending on the place of the break of the C-J binding, the phenylether of iododimedone iodized benzene are obtained. The investigation on the decomposition of phenyl dimedonyliodonium shows clearly that this compound has the structure of iodonium salts. The phenyl ethers of dimedone have hitherto not been described. Thus in the thermal decomposition of phenyl dimedonyliodonium a new compound forms, namely, the phenyl ether of iododimedone, besides, still-iodized benzene and an oily product of unknown structure. In the reduction of phenyl ether of the iododimedone a new product, the phenyl ether of dimedone was obtained. In the case of direct phenylation of dimedone with diphenyl iodonium bromide new products resulted: the phenyl ether of dimedone, the phenyl dimedone, the diphenyl dimedone and the phenyl ether of phenyl dimedone. There are 8 references, 2 of which are Soviet.

Card 2/3

79-28-5-14/69

Iodonium Derivatives of β-Diketones. II. Thermal Decomposition of the Phenyldimedonyliodonium

ASSOCIATION: Latviyskiy gosudarstvennyy universitet (Latvian State University)

SUBMITTED: April 15, 1957

Card 3/3

1

6
1-JAY(NB)

✓ Cyclic arylazo-β-diketones. III. Condensation of dimedon with aromatic diazo compounds. E. Gudriniece, G. Vanags, R. Fridmane, L. Maskalis, and ~~H. Pirs. Latvijas~~ *PSR Zinātņu Akad. Vēstis* 1959, No. 7, 81-4 (in Russian); cf. *CA* 53, 16046e; following abstr.—An alk. soln. of 2.8 g. dimedon (I) added to a diazotized soln. of 3.6 g. sulfanilic acid at 1-5°, stirred 2 hrs., acidified to pH 5 with HCl, and the product salted out yielded 4.4 g. Na salt of dimedonylazophenyl-*p*-sulfonic acid (II), m. about 300° (decompn.). The EtOH soln. of the Na salt of II when cooled with NaOH yielded the di-Na salt of II. Similarly treated, I and sulfanilamide yielded dimedonylazophenyl-*p*-sulfamide (III), red crystals, m. 260°. III (0.25 g.) in EtOH refluxed 2 hrs. with 0.06 g. $NH_2OH.HCl$ (IV), cooled, filtered and recrystd. from glacial AcOH yielded 0.1 g. III oxime, red crystals, m. 236° (decompn.). III (1 g.), 4.6 g. IV, and 45 ml. EtOH refluxed 2.5 hrs., cooled, filtered, the filtrate dild. with H_2O, and the resulting ppt. recrystd. from EtOH yielded III dioxime, yellow crystals, m. 220-1° (decompn.). A series of derivs. was prepd. (end product, appearance and m.p. given): phenylazodimedon (V), orange-red, 142°; Na salt of V, orange-red, —; 2-methylphenylazodimedon (VI) semicarbazone, yellow needles, 217-18°; VI disemicarbazone, orange, 253°; 3-methylphenylazodimedon (VII), —, 102-3° (semicarbazone, orange, 225-6°; disemicarbazone, orange, 265-6°); 4-methylphenylazodimedon (VIII), semicarbazone, orange, 229-30°; VIII disemicarbazone, orange, 275-6°; VI oxime, red, 245-6°; VI dioxime, light yellow, 236-7°; VII oxime, yellow, 227° (decompn.); VII dioxime, light yellow, 236-7°; VIII oxime, yellow, 223-5°; VIII dioxime, light yellow, 230-3°; *p*-phenylazodimedonylsulfadimesine, yellow, 241-3°. Z. Schor.

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1-JAI(NB)

Cyclic arylazo-β-diketones. V. Metal complexes of 2-phenylazo-1,3-indandione. E. Gudriniece, A. Ievinš, G. Vanags, L. Natele, and D. Kreic. *Latvijas PSR Zinātņu Akad. Vēstis* 1959, No. 10, 107–18(in Russian); cf. preceding and following abstr.—Phenylazoindandione Cu complex was obtained in 0.5-g. yield by keeping 1 g. $CuSO_4.5H_2O$ in 20 ml. 1:1 water-pyridine and 0.55 g. Na phenylazoindandionate in 25 ml. pyridine (II), to which 0.5 ml. H_2O was added, at elevated temp. 20 min., pptd. after dilg. with 200 ml. boiling H_2O. I contained 2 mols. phenylazoindandione (III) for each atom of Cu. Chelates of Ni, Co, and Cd were prepd. similarly. They contained 2 mols. III and 2 mols. II for each metal atom. II remained in complexes even after 3 hrs. at 115°. It was easier to remove II from the Cd complex (IV) than from the other 2. IV was easily hydrolyzed. The Ag complex, obtained similarly, contained 1 mol. III and 1 mol. II for each Ag atom. Above 80° it pptd. as a dark red oil. 2-(*o*-Hydroxyphenylazo)-1,3-indandione (V), the product of coupling 1,3-indandione with diazotized *o*-aminophenol (at 0°, pH 7–8), formed 1:1 type complexes with Ag, Cu, Ni, Co, and Zn. The ease of formation of these complexes could be explained by the presence of inductive and mesomeric effects in V. Cu and Zn complexes of V contained 1 mol. II, and lost it on boiling in alk. soln. or on heating. Ni and Ag complexes of V contained 2 mols. of II; 1 mol. II in the Ag complex was probably bonded to Ag and another attached to the OH group connected to Ph. *m*- and *p*-Hydroxyphenylazoindandiones did not give complexes under the same conditions. Sulfonation of V gave 2-(*o*-hydroxyphenylazo)-1,3-indandionedisulfonic acid (VI), and sulfonation of *p*-hydroxyphenylazoindandione gave 2-(*p*-hydroxyphenylazo)-1,3-indandionemonosulfonic acid (VII). These acids directly dyed wool and natural silk yellow. VI produced different colors when salts of different metals (Cu, Co, Ni, Cr, Fe) were used as mordants. With VII such great differences in color were not observed. Walter Lobunez

GUDRINIYETSE, E. [Gudriniece, E.] (Riga); IYEVIN'SH, A. [Ievins,A.] (Riga);
VANAG, G. [Vanags,G.] (Riga); KURGAN, D.

Research in the field of cyclic arylazo-β-diketones. IV. Metallic complexes of phenylazodimedons. Vestis Latv ak no.9:101-105 '59.
(EEAI 9:10)

1. Akademiya nauk Latviyskoy SSR, Institut khimii.
(Aryl groups) (Ketones) (Dimenthylcyclohexanedione)
(Metals) (Phenyl group) (Azo compounds)
(Complex compounds) (Nickel) (Cobalt)
(Copper) (Silver)

Cyclic arylazo-β-diketones. VI. The reaction of aryl-
diazo compounds with 2-benzyldimedon. E. Gudriniece,
G. Vanags, and R. Zhuk. *Latvijas PSR* ~~*Zinatnu Akad.*~~
~~*Vēstis*~~ 1959, No. 11, 73-8(in Russian); cf. preceding abstr.—
The reaction of 2-benzyldimedon with aryldiazonium
compds. gave in AcOH or neutral media 2-benzyl-2-aryl-
diazodimedons; these compds. were hydrolyzed in basic
media to give arylhydrazonooxocarboxylic acids. Electro-
philic substituents on C-2 of dimedon were eliminated in
the coupling reaction. 2-(*p*-Nitrophenylhydrazono)dime-
don, red crystals, m. 215-17°, 89% yield, was prepd. by
addn. of a soln. of 1.8 g. of 2-acetyldimedon (I) and 4 g.
NaOH in 20 g. H_2O to 2 g. diazotized *p*-$O_2NC_6H_4NH_2$ (II).
The mixt. was kept 2 hrs. at 0° and pH 7-8, then acidified
and recrystd. from EtOH. The same product was obtained
when 2-bromo- or 2-carboxydimedon was used, instead of I.
2-Benzyl-2-phenylazodimedon, light yellow, m. 112-13°,

90% yield, was prepd. by addn. of 11.5 g. of 2-benzyldi-
medon (III) in glacial AcOH at 0° to a soln. of diazotized
$PhNH_2$, adjusted with NaOAc to pH 4-5. The 2-benzyl-2-
nitrophenylazodimedones were prepd. from 4.6 g. III and
4.1 g. corresponding diazotized nitroaniline at pH 4-5 and
0° and were recrystd. from EtOH; the ortho isomer,
orange needles, m. 130°, 95% yield; meta, brown plates,
m. 132-3°, 83%; para, yellow crystals, m. 135-6°, 98%.
Other 2-benzyl-2-arylazodimedons, similarly prepd., were:
m-tolyl-, yellow, m. 82° (MeOH); *p*-tolyl-, yellow, m. 100-
1° (EtOH); *o*-carboxyphenyl-, red, m. 184° (dil. MeOH);
α-naphthyl-, yellow, m. 125° (EtOH). III condensed with
diazotized II at pH 8-9 gave 25% by-product 6-(*p*-nitro-
phenylhydrazono)-3,3-dimethyl-7-phenyl-5-oxoheptanoic
acid (IV), m. 165°. IV was sepd. from the main product by
extn. with aq. $NaHCO_3$. IV was also obtained when 2-
benzyl-2-(*p*-nitrophenylazo)dimedon was hydrolyzed with a
strong base or with concd. H_2SO_4. IV had λ 377 mμ
(ε 24,000) and showed a second λ 528 mμ upon addn. of
base.
Howard R. Rinkle

4

1-JAJ(NB)

K

7K

5 (3)

AUTHORS: Gudriniyetse, E. Yu., Iyevin'sh, A. F., Vanag, G. Ya.

SOV/79-29-3-44/61

TITLE: Sulfonation of β-Diketones (Sul'firovaniye β-diketonov). IV. 5,5-Dimethylcyclohexanedione-1,3-sulfo-2-acid and Its Salts (IV. 5,5-Dimetiltsiklogeksandion-1,3-sul'fo-2-kislota i yeye soli)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 3, pp 959-963 (USSR)

ABSTRACT: The sulfonation of β-diketones with dioxane sulfotrioxide (Refs 1,2) takes place easily, as well as with 98 % H_2SO_4 in the presence of acetic anhydride (Refs 3,4). In the work under review the authors continued this sulfonation and their attention was specially attracted by the salts of the above acid (dimedon sulfo acid). Besides the acid, two series of its salts were synthesized, with an equivalent of the metal (I) and with two equivalents (II)

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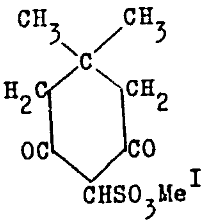
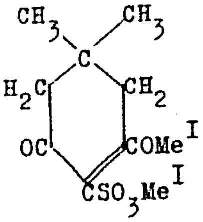


(I)



(II)

The acid is obtained in crystalline form. Dimedon is formed by heating with hydrochloric acid. Ammonium-, sodium-, magnesium-, calcium-, strontium-, barium-, nickel-, and cobalt salts, with an equivalent of the metal, were obtained by saturation of the aqueous solution of dimedon sulfo acid with the corresponding chloride. All metal salts, with the exception of nickel- and cobalt salt, are obtainable in crystals and are soluble in water. The aqueous solution of the salts with an equivalent of the metal has an acid reaction. The dissolved dimedon sulfo acid yields sulfo salts with organic bases (e.g. with aniline, Sulfonation of β-Diketones. IV. 5,5-Dimethylcyclohexanedione-1,3-sulfo-2-acid and Its Salts SOV/79-29-3-44/61

pyridine, and quinoline). With the same ease it forms salts of the enol form (II). These salts are obtained by neutralizing the aqueous solution of the sulfo acid with carbonates or hydroxides until the weakly acid or neutral reaction. The salts of alkaline and alkaline-earth metals, as well as those of copper, zinc, and manganese, have an alkaline or neutral reaction in aqueous solutions, depending on the properties of the cation. The ammonium salt of the enol form could not be obtained. As is the case with other sulfo acids, the reaction of the dimedon sulfo acid with S-benzylthiouronium chloride leads to the benzylthiouronium salt (III). There are 1 table and 5 references, 3 of which are Soviet.

ASSOCIATION: Latviyskiy gosudarstvennyy universitet (Latvian State University)

SUBMITTED: January 16, 1958

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SOV/79-29-6-26/72

5(3)

Yu.

AUTHORS: Gudriniyetse, E., Vanag, G., Strakov, A., Neyland, O.

TITLE: Sulfonation of β -Diketones (Sul'firovaniye β -diketonov). VI. Derivatives of Indandione—1,3-sulfonic-2-acid (VI. Proizvodnyye indandion-1,3-sul'fo-2-kisloty)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 6, pp 1893 - 1897 (USSR)

ABSTRACT: There are no data available in publications regarding the derivatives of the keto group of the sulfonic acids of the ketones and aldehydes (Ref 1). Although the dioxime of the indandione-1,3-sulfonic-2-acid obtained from its dipotassium salt and hydroxylamine hydrochloride in the presence of K_2CO_3 was described (Ref 2), the authors were not able to attain the same results, neither with the disodium nor with the dipotassium salt of this acid. On addition of alcohol the initial product, and not the dioxime described, precipitated.

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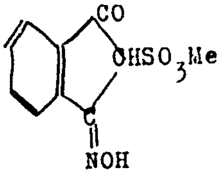
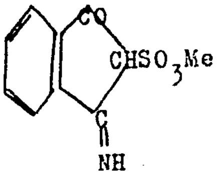
Sulfonation of β-Diketones. VI. Derivatives of Indandione-1,3-sulfonic-2-acid SOV/79-29-6-26/72



(I)



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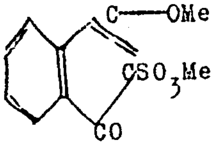

(III)

The experiments under review indicated that the oxime (I) is readily formed on boiling of the sodium salt of the indandione-1,3-sulfonic-2-acid in glacial acetic with hydroxylamine-hydrochloride, even without anhydrous sodium acetate. It is hardly soluble in water and is transformed by bromination to give the 2,2-dibromo-indandione-1,3. The oxygen of the keto group of the sodium salt of the acid mentioned is substituted by the imino group with compound (II) being formed in the $Me = NH_4$. When treating compound (II) with the alcoholic solution of sodium hydroxide or sodium ethylate compound (IV) ($Me = Na$) was formed, the bipolar structure of which was confirmed by the ultraviolet absorption spectra. A number of derivatives of the indandione-1,3-sulfonic-2-acid was thus synthesized (the oxime, semicarba-

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Sulfonation of β-Diketones. VI. Derivatives of Indandione-1,3-sulfonic-2-acid

SOV/79-29-6-26/72

zone, imine and phenyl-imine in the form of the sodium, ammonium or aniline salts). Bromination of the sodium salt of the oxime of the above-mentioned acid and of the ammonium salt of the imine of the same acid (V) yielded 2,2-dibromo-indandione-1,3. Phosphorus pentachloride forms with the sodium salt of the acid the 2-chloro-indandione-1,3-sulfonic-2-acid-chloride. Its bromination results in 2-chloro-2-bromo-indandione-1,3. When boiling the sulfo-chloride with alcohols SO_2 develops, which is transformed into 2,2-dichloro-indandione-1,3. There are 1 figure and 11 references, 6 of which are Soviet.

ASSOCIATION: Latviyskiy gosudarstvennyy universitet (Latvian State University)

SUBMITTED: May 19, 1958

Card 3/3

66419

~~5 (2,3)~~ 5.3610 SOV/20-128-6-23/63

AUTHORS: Gudriniyetse, E. Yu., Vanag, G. Ya., Academician, AS LatvSSR, Sakhar, L. Yu.

TITLE: Condensation of the Sodium Salt of Ethyl Esters of Indandione-1,3-carboxylic-2-acid With Diazotized Nitroanilines

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 6, pp 1182 - 1184 (USSR)

ABSTRACT: There are no publication data on the interaction of indandione-1,3-derivatives with aryl-azo compounds. If the interaction reaction of the latter with esters of cyclohexanone-carboxylic acids is carried out in a neutral or weakly acid medium, cyclanedion-aryl hydrazones are formed (Refs 10-12). In a strongly alkaline medium, the ring is disrupted, and aryl hydrazones of keto-dicarboxylic acids are formed (Refs 12-16). The authors investigated the products of the condensation reaction of the o-, m-, and p-nitroanilines mentioned in the title with the sodium salt also mentioned there. Apparently, the reaction proceeds with a displacement of the reaction center (Ref 18), not according to Dimroth's mechanism (Refs 19,20). The aryl-azo compounds (I) obtained by the authors are yellow, insoluble in water, but well soluble in methanol, ethanol, acetone, ether, glacial

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Condensation of the Sodium Salt of Ethyl Esters of Indandione-1,3-carboxylic-2-acid With Diazotized Nitroanilines

SOV/20-128-6-23/63

acetic acid, and dioxane. On heating an alcoholic solution, the corresponding 2-(nitrophenyl)-hydrazone-indandiones-1,3 (II, see Diagram) are formed. (II) were also obtained in an alkaline medium (pH~8-9). The ethyl ester of the 2-(p-nitrophenyl)-azo-indandione-1,3-carboxylic-2-acid (Ia) crystallizes from diluted ethanol with 1 molecule of water, and yields a monoxime. On boiling the alcoholic solution, 2-(p-nitrophenyl)-hydrazone-indandione-1,3 (II) is formed. The ethyl ester of the acid (Ia) dissolves in alkalis while the color turns into red. At the same time, the indandione ring is hydrolytically split, and the sodium salt of the ethyl ester of the p-nitrophenyl hydrazone of o-carboxy-benzoyl-glyoxalic acid is formed. On acidification of the solution, this acid (III) is also separated in the form of a yellow precipitation. The red disodium salt (IV) of the acid (III) was isolated by heating the azo ester (Ia) with sodium ethylate in ethanol. Besides, the well water-soluble salts of the acid (III) were produced: monoammonium-, di-diethylamine-, and di-piperidine salts. The acid (III) is resistant to hydrolysis, and splits off the ethoxyl group only after boiling in an acetic

Card 2/3

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66419

Condensation of the Sodium Salt of Ethyl Esters of Indandione-1,3-carboxylic-2-acid With Diazotized Nitroanilines SOV/20-128-6-23/63

sulphuric-acid mixture for 5 hours. Here, the p-nitrophenyl hydrazone of the o-carboxyphenyl glyoxal (V) is formed. Thus, the authors succeeded for the first time in producing derivatives of cyclic β-diketones. There are 20 references, 5 of which are Soviet.

ASSOCIATION: Rizhskiy politekhnicheskiy institut (Riga Polytechnic Institute)

SUBMITTED: June 29, 1959

4

Card 3/3

GUDRINIYETSE, E. Yu., Doc Chem Sci -- (diss) "Nitration, sulfonation, and azo-coupling of -diketones." Riga, 1960. 26 pp; (Riga Polytechnic Inst); 400 copies; price not given; list of authors' works at end of text (37 entries); (KL, 32-60, 145)

Gudriniyetse, E. Yu.

GUDRINIECE, E.; VANAG, G. [Vanags,G.]; TIRE, E.

Research in the field of cyclic arylazo-β-diketones. VIII. Condensation of 5-phenylcyclohexanedione-1,3 (phenidone) and 4-carbethoxy-5-phenylcyclohexanedione-1,3(4-carbothoxyphenidone) with diazotized aromatic amines. Vestis Latv ak no.2:87-94 '60. (EEAI 10:1)

(Phenylcyclohexanedione)
(Phenidone) (Ethoxycarbonyl group)
(Aromatic compounds) (Cyclic compounds)
(Aryl groups) (Amines) (Ketones)

GUDRINIECE, E.(Riga); IEVIN'SH, A. (Riga); VANAG,G. [Vanags,G.] (Riga);
NATELIS, L. [Nakele,L.] (Riga); KREILE, L. (Riga)

Research in the field of cyclic arylazo-β - diketones. V. Metal complexes of 2-phenylazoindendiones-1,3. Vestis Latv ak no.10: 107-113 '59. (EEAI 9:10)

1. Akademiya nauk Latviyskoy SSR, Institut organicheskogo sinteza.
(Aryl groups) (Ketones) (Metals)
(Cyclic compounds) (Phenylazoindzndione)
(Complex compounds)

GUDRINIETSE, E. [Gudriniece,E.] (Riga); VANAG, G. [Vanags,G.] (Riga)

Research in the field of cyclic arylazo-β-diketones. VI. Reaction of aryldiazo compounds with 2-benzyldimedon. Vestis Latv ak no.11:73-78 '59. (EEAI 9:11)

1. Akademiya nauk Latviyskoy SSR, Institut orgnicheskogo sinteza.
(Aryl groups) (Ketones) (Azo compounds)
(Benzyldimethylcyclohexanedione)
(Diazo compounds) (Cyclic compounds)

S/153/60/003/01/031/058
B011/B005

AUTHORS: Gudriniyetse, E.Yu, Vanag, G.,
Kurzemniyeks, A., Grants, Z.

TITLE: Interaction Between Sulfuryl Chloride and Beta Diketones

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1960, Vol 3, Nr 1, pp 119-121 (USSR)

TEXT: The authors proved that sulfuryl chloride is a good chlorination reagent for cyclic β-diketones. Ether, dioxane, CCl_4, 1,2-dichloroethane, chloroform, and benzene were used as solvents. The highest yields in dichloro-β-diketones were obtained in dioxane at a ratio of β-diketone : sulfuryl chloride = 1 : 2.5. The reaction was carried out at different temperatures between 0 and 80°. At higher temperatures, the reaction proceeds faster, but only 2,2-dichlorodiketones-1,3 (I) are formed. Without a solvent, the reaction proceeds very vigorously, and the product becomes resinous. Application of ultraviolet light (quartz lamp) and anhydrous aluminum chloride did not lead to the formation of sulfochlorides. The compounds produced are: 2,2-dichloroindandione-1,3, 2,2-dichlorodimedone, 2,2-dichloro-5-phenylcyclohexanedione-1,3, and 2,2-dichloroperinaphthindandione. The table (p 120) shows the reaction temperatures, solvents, yields, and the calculated and measured melting points of the products obtained. There are 1 table

Card 1/2

S/079/60/030/05/29/074
B005/B016

AUTHORS: Iyevin'sh, A. F., Apinitis, S. K., Gudriniyetse, E. Yu., Vanag, G. Ya.

TITLE: Sulfonation of β-Diketones. VII. Crystallographic and X-Ray Analyses of Alkali Metal and Ammonium Salts of Indandione(1,3)-2-sulfonic Acid

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 5, pp. 1541-1547

TEXT: The authors of the present paper investigated the crystals of the lithium-, sodium-, potassium-, ammonium- and rubidium salts of indandione(1,3)-2-sulfonic acid. To obtain suitable crystals for the crystallographic investigation, these salts were recrystallized from aqueous ethanol. The experimental conditions are given. The mono- and dihydrate of the sodium salt of indandione(1,3)-2-sulfonic acid were studied while the remaining 4 alkali salts occurred in anhydrous state. Crystal class, axial ratio, volume of the unit cell, and number of molecules in the unit cell were determined for each of these 6 salts. 4 tables give the spherical coordinates of the individual lattice planes

Card 1/2

Sulfonation of β-Diketones. VII. Crystallographic and X-Ray Analyses of Alkali Metal and Ammonium Salts of Indandione(1,3)-2-sulfonic Acid

S/079/60/030/05/29/074
B005/B016

for the 6 salts investigated. One table shows the parameters of the unit cells of potassium-, ammonium-, and rubidium salt, 2 further tables present the identity periods for the 3 lattice planes [110], [101], and [011] for the dihydrate of the sodium salt, and for the potassium salt of indandione(1,3)-2-sulfonic acid. 4 schemes show the crystals investigated in the oblique and top view. The authors further investigated the solubilities of the alkali salts of indandione(1,3)-2-sulfonic acid in water and alcohol at 20°. The results are compiled in a table. The solubility of the salt decreases with increasing radius of the cation. There are 4 figures, 8 tables, and 2 Soviet references.

ASSOCIATION: Rizhskiy politekhnicheskiy institut (Riga Polytechnic Institute)

SUBMITTED: May 11, 1959

Card 2/2

GUDRINIETSE, E.;UVANAG, G.; MAZKAL'KE, L.

Sulfonation of β-diketones. Part 10: Sulfonation of dimedon.
Zhur.ob.khim. 30 no.6:1904-1911 Je '60.
(MIRA 13:6)

1. Rizhskiy politekhnicheskiy institut.
(Cyclohexanedione) (Sulfonation)

GUDRINIYETSE, E.Yu.; VANAG, G.; MAZKAL'KE, L.

Sulfonation of β-diketones. Part 11: Derivatives of 2-dimedonsulfonic acid. Zhur.ob.khim. 30 no.7:2379-2387 Jl '60. (MIRA 13:7)

1. Rizhskiy politekhnicheskiy institut.
(Cyclohexanesulfonic acid--Spectra)
(Cyclohexanedione--Spectra)

GUDRINIETSE,E.[Gudriniece,E.](Riga); IYEVIN'SH,A.[Ievins,A.](Riga);
VANAG,G.[Vanags,G.](Riga); BRUNERE,V.(Riga); BANKOVSKIY,Yu.
[Bankovskis,J.](Riga)

Sulfonation of β-diketones. IX. Indandione-1,3-disulfo-2,2-acid and its salts. In Russian. Vestis Latv ak no.3:103-106 '60.
(EEAI 10:7)

1. Akademiya nauk Latviyskoy SSR, Institut khimii.
(Ketones) (Sulfonation) (Indandisulfonic acid)