AUTHORS: Nesmeyanov, A. N., Sazonova, V. A., Drozd, V. N. 62-11-15/29

TITLE: On the Magnesium-Organic Compound of the Selenophene (O magniyorganicheskom soyedinenii selenofena).

PERIODICAL: Izvestiya AN SSSR, Otdelenie Khimicheskikh Nauk, 1957, Nr 11, pp. 1389-1391 (USSR)

ABSTRACT: In connection with the investigation of tetraarylboronic salts and the investigation of the reaction-process-possibility in the case of potassiumborofluoride with RMgX in the heterocyclic series here experiments were carried out in order to obtain iodide-α-selenenile-magnesium. It became evident that this metalorganic compound develops in an ester-solution from the α-iodoselenophene and magnesium when applying ethylene bromide as reaction accompanying matter. The iodide-α-selenenile-magnesium enters reaction with CO_2, benzophenone and produces α-selenophenecarbonic acid or diphenil-α-selenenilecarbinol respectively. In the reaction with potassiumborofluoride tetra-(α-selenenile)boropotassium

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On the Magnesium-Organic Compound of the Selenophene. 62-11-15/29

develops, which reminds of the analogous compound of the thiophene as to its properties(reference 3). Tetra-(α-selenenile)boropotassium precipitates the rubidium-ions and a little more completely the ions of the cesium and of the quaternary ammonicum from the aqueous-solutions. There are 3 references, 2 of which are Slavic.

ASSOCIATION: Moscow State University imeni M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova).

SUBMITTED: July 6, 1957.

AVAILABLE: Library of Congress

Card 2/2

5(3) SOV/62-59-1-28/38

AUTHORS: Nesmeyanov, A. N., Sazonova, V. A., Drozd, V. N.

TITLE: Organo-Boron Heterocyclic Compounds (Bororganicheskiye geterotsiklicheskiye soyedineniya)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 1, pp 163 - 166 (USSR)

ABSTRACT: In the present communication the authors report that the reaction RMgX with potassium fluoborate earlier investigated (Ref 2) was extended to oxygen-containing heterocyclic compounds (furan, sylvan) and triheterocyclyl boron compounds in the form of complexes were synthesized with pyridine. Tetra-(2-furyl) and tetra-5(2-methylfuryl)boron anions were obtained in the form of different salts. The presence of furan and sylvan nuclei in these anions was confirmed by decomposition of organo-boron compounds with alkali. Therein 2-chloro-mercuri furan and 2-methyl-5-chloro-mercuri furan were formed. Tetra-5-(2-methylfuryl)boron potassium separates ions of cesium, rubidium and quaternary ammonium salts. Pyridine salts of the type $[C_5H_5\overset{+}{N}H]B^-Ar_4$ proved to be appropriate for the transition to

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Organo-Boron Heterocyclic Compounds

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triheterocyclyl boron compounds. The heating of pyridine salts in alcohol is sufficient for the synthesis of tri-substituted boron compounds in the form of pyridinates. In an exchange reaction between tetra-(2-selenyl)boron potassium and pyridine chlorine hydrate the pyridinate of triselenyl boron is immediately formed. There are 2 references, 1 of which is Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: May 30, 1958

Card 2/2

5 (2,3)

AUTHORS: Nesmeyanov, A. N., Academician, Sazonova, V. A., Drozd, V. N.

SOV/20-126-5-25/69

TITLE: Ferrocenyl Boric Acid and 1,1' Ferrocenylene-Diboric Acid and Their Reactions (Ferrotsenilbornaya i 1,1'-ferrotsenilendibornaya kisloty i ikh reaktsii)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 5, pp 1004 - 1006 (USSR)

ABSTRACT: The authors have obtained a mixture of the two acids mentioned in the title by the action of a mixture of lithium and dilithium-ferrocene (Ref 1) on boron-n-butyl-ester. They were extracted by alcalies out of the reaction mixture. Their separation is explained by the high degree of solubility of the mono-acid and the insolubility of the diboric acid in ether. With respect to its chemical properties the mono-acid is similar to arylboric acid. Thus, ferrocene is obtained by hydrolysis in the presence of $ZnCl_2$; with sublimate ferrocene-mercury chloride is easily formed (Ref 1), whilst with cupric chloride and cupric bromide chlorine-ferrocene and bromine ferrocene are formed (Ref 2). In the same manner also the dihalogen-ferrocene

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Ferrocenyl Boric Acid and 1,1' Ferrocenylene-Diboric Acid and Their Reactions SOV/20-126-5-25/69

derivates are produced from the diboric acid mentioned in the title. Thus, all three mono-halogen-ferrocenes: chlorine-, bromine-, and iodine-ferrocene are known, as well as all three hetero-annular dihalogen ferrocenes. The present investigation has revealed the properties of the dibromo ferrocene which was obtained in a purer crystalline form under the action of the ferrocenylene diboric acid. Under the interaction of ferrocenyl-boric acid and of an ammoniacal silver oxide solution, ferrocene and diferrocenyl are produced, whilst for the phenyl boric acid a hydrolysis up to benzene under the action of this reagent and for the alkyl-boric acids a doubling of the radical and a disproportioning of the latter had been known. There are 2 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: April 16, 1959

Card 2/2

5.3700(B)
~~5(3)~~

AUTHORS: Nesmeyanov, A. N., Academician, Sazonova, V. A., Drozd, V. N.

SOV/20-129-5-27/64

TITLE: Oxyferrocene

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 5, pp 1060 - 1063 (USSR)

ABSTRACT: No oxy-derivative of ferrocene has been hitherto known. The authors obtained oxyferrocene in two ways, namely, by way of ferrocenyl acetate: 1) by mixing aqueous solutions of ferrocenyl boric acid (Ref 3) with copper acetate, ferrocenyl acetate (yield 59%) and diferrocenyl (21%) are obtained, ferrocenyl propionate and diferrocenyl are formed with copper propionate (see Scheme); 2) ferrocenyl acetate was formed on heating bromo-ferrocene with copper acetate. The ferrocenyl acetate structure was confirmed by the reaction with phenyl magnesium bromide (see Scheme). The methyl diphenyl carbinol sample obtained in this connection melts with pure methyl-diphenyl-carbinol without a reduction in the melting point. Ferrocenyl benzoate was separated from the oxyferrocene yield after benzoylation. Oxy-ferrocene (ferrocenol) is easily separated from alkaline solutions,

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Oxyferrocene

SOV/20-129-5-27/64

much like phenol, on bubbling CO_2 through them. Oxyferrocene is a yellow crystalline air-unstable substance. It can be recrystallized from water (with quick heating), but becomes somewhat darker. It is soluble in ether, alcohols and chloroform. Moreover, the authors obtained the following derivatives of oxyferrocene: ferrocenyl benzoate, ferrocenyl ester of benzene sulfonic acid as well as oxyferrocene methyl ether (Table 1). All ethers and esters are crystalline substances which readily solve in organic solvents. Further properties of oxy-ferrocene are being investigated. There are 1 table and 5 references, 2 of which are Soviet.

SUBMITTED: September 11, 1959

Card 2/2

68611

5.3700(B)

5(3)

S/020/60/130/05/021/061
B011/B005

AUTHORS: Nesmeyanov, A. N., Academician, Sazonova, V. A., Drozd, V. N.

TITLE: Some Reactions of the Halogen Derivatives of Ferrocene. Ferrocenylamine. Ferrocenylacetate

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 130, Nr 5, pp 1030-1032 (USSR)

ABSTRACT: The purpose of the paper is the synthesis of ferrocenylamine, ferrocenylacetate, N-ferrocenylphthalimide, N-acetylferrocenylamine, and ferrocene carboxylic acid nitrile. The paper continues previous investigations by the authors (Ref 1, together with E. G. Perevalova and O. A. Nesmeyanova: Refs 2,3). As further investigations have shown, the exchange of the halogen in halogen ferrocenes by reaction with the salt of the bivalent (and monovalent $Cu_2(CN)_2$) copper is a method generally applicable for substitution of the halogen atom in the ferrocene ring by copper-bound radicals. The substitution of the halogen in halogen ferrocenes by an acetoxy group proceeds even more smoothly than previously described by the authors in aqueous-

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Some Reactions of the Halogen Derivatives of Ferrocene. Ferrocenylamine. Ferrocenylacetate

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B011/B005

alcoholic solutions by boiling with copper acetate for 15 min. The yield in ferrocenylacetate is 90% (see Scheme). N-ferrocenylphthalimide is formed by heating (135-140°) the mixture of halogen ferrocene with copper phthalimide (see Scheme). By the action of hydrazine hydrate, the N-ferrocenylphthalimide is easily transformed into ferrocenylamine with a total yield of 50%. The ferrocenylamine was identified as N-acetylferrocenylamine. The halogen may also be replaced by the phthalimide group by boiling in an aqueous-alcoholic solution for 2 h. The method described here for preparing ferrocenylamine is certainly more convenient than the methods described in references 4 and 5. Bromoferrocene reacts with copper cyanide, and gives a good yield in ferrocene carboxylic acid nitrile. The reaction proceeds less readily with chloroferrocene. Previously, the nitrile was prepared by other methods (Refs 6,7). There are 8 references, 5 of which are Soviet.

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ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

Card 2/3

53700(B)

AUTHORS: Nesmeyanov, A. N., Academician, Sazonova, V. A., Drozd, V. N., Nikonova, L. A.

80000
S/020/60/131/05/029/069
B011/B117

TITLE: 1-(1'-Halogenferrocenyl) Boric Acids in the Synthesis of Ferrocene Derivatives

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 131, Nr 5, pp 1088-1091 (USSR)

TEXT: The authors proved in their paper that the reaction of 1,1'-ferrocenylene diboric acid with cupric chloride or bromide performed in a mixture of benzene and water yields 1-(1'-chloroferrocenyl) and 1-(1'-bromoferrocenyl) boric acid. Cupric chloride or cupric bromide must, however, be used in a quantity corresponding to one $B(OH)_2$ group. The structures of 1-(1'-halogenferrocenyl) boric acids were established by means of the preparation of the corresponding halogenferrocenes by hydrolysis in the presence of zinc salts. The 1-(1'-halogenferrocenyl) boric acids react in a similar way to the aryl boric acids with mercury salts, yielding the corresponding mercury compounds of ferrocene: 1-(1'-chloroferrocenyl) mercury chloride and 1-(1'-bromoferrocenyl) mercuric bromide. They are easily symmetrized by sodium thiosulfate to yield di-1-(1'-chloroferrocenyl) mercury and di-1,1-(1'-bromoferrocenyl) mercury. From the two last-mentioned substances, the authors prepared 1'-chloro-1-iodoferrocene and

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1-(1'-Halogenferrocenyl) Boric Acids in the Synthesis of Ferrocene Derivatives

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B011/B117

1'-bromo-1-iodoferrocene which have hitherto been unknown. The procedure used was the same as the one described for ferrocenyl mercury chloride (Ref 2). When an attempt was made to prepare heterocyclic chlorobromoferrocene by reacting cupric chloride with 1-(1'-bromoferrocenyl) boric acid, 1,1'-dichloroferrocene (cf Scheme) was obtained. The latter reaction confirms the simple substitution of the halogen in the ferrocene ring in the presence of copper salts, which has previously been established by the authors (Ref 3). There are 3 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: January 7, 1960

Card 2/2

81724

S/020/60/133/01/35/070
B011/B003

5.3700(B)

AUTHORS: Nesmeyanov, A. N., Academician, Sazonova, V. A., Drozd, V. N., Nikonova, L. A.

TITLE: Oxyferrocenes and Their Derivatives

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 1, pp. 126 - 129

TEXT: Ferrocenyl-allyl ester is easily formed by heating oxyferrocene with allyl bromide in acetone in the presence of potash. By heating ferrocenyl-allyl ester at 215-220°C in nitrogen, it is decomposed up to oxyferrocene. Part of the ester remains unchanged. Claisen regrouping could not be carried out with ferrocenyl-allyl ester (Ref. 2). The authors' considerations on the instability of the "quinoid" state in the ferrocene molecule were confirmed by experiments on the oxidation of 1,1'-dioxyferrocene with air. The molecule decomposes and separates an inorganic iron compound. The resulting cyclopentadienone was isolated as a dimer. Furthermore, the authors compared the dissociation constants of oxyferrocene and phenol, and described 1,1'-dioxyferrocene

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Oxyferrocenes and Their Derivatives

and its derivatives. The pH-values of 0.005 M solutions of oxyferrocene or phenol in 5% alcohol, which had partly been neutralized with NaOH up to 30, 50, and 70%, were measured at 17°C by means of a glass electrode and an ЛП-5 (LP-5) potentiometer. Table 1 lists the values obtained for oxyferrocene. It shows that oxyferrocene is a weaker acid than phenol. The authors synthesized 1,1'-dioxyferrocene derivatives by using 1,1'-ferrocenylene diboric acid. This acid reacts with copper acetate and forms 1,1'-ferrocenylene diacetate in a 41% yield. 1,1'-dioxyferrocene ester is obtained in a yield of 83% if a $B(OH)_2$ group has previously been substituted by a halogen in this acid. When copper acetate acts upon 1-(1'-ferrocenyl halide) boric acids (synthesis: Ref. 5), the acetoxy group substitutes both the halogen and the $B(OH)_2$ group. 1,1'-dibromoferrocene may also be used for the synthesis of ferrocenylene diacetate (cf. Scheme: X denotes the halogen). The frequencies characteristic of the unsubstituted ferrocene ring are missing in the infrared spectrum of ferrocenylene diacetate. Hydrolysis of the first-mentioned compound (in a nitrogen atmosphere) and subsequent acidification or blowing through of CO_2 yields yellow needles of 1,1'-dioxyferrocene,

Oxyferrocenes and Their Derivatives

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B011/B003

which is highly sensitive to air (cf. Scheme). The alkaline hydrolyzate could be used for synthesizing 1,1'-dioxyferrocene derivatives, i.e., 1,1'-dimethoxyferrocene, 1,1'-ferrocenylene dibenzoate, 1,1-ferrocenylene dibenzosulfonate, and O,O'-(1,1'-ferrocenylene) diglycolic acid. All these derivatives are stable in air. There are 2 tables and 7 references: 2 Soviet, 4 American, and 1 Swiss.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: April 8, 1960

Card 3/3

DROZD, V. N.

Cand Chem Sci - (diss) "Synthesis of ferrocene derivatives by way of boron- and halogen-substituted ferrocenes." Moscow, 1961. 8 pp; (Academy of Sciences USSR, Inst of Organic Chemistry imeni N. D. Zelinskiy); 150 copies; price not given; (KL, 5-61 sup, 175)

NESMEYANOV, A.N.; SAZONOVA, V.A.; DROZD, V.N.

Reactions of halo derivatives of ethyl- and acetylferrocene.
Dokl. AN SSSR 137 no.1:102-105 Mr-Ap '61. (MIRA 13:12)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Ferrocene)

33263
S/062/62/000/001/002/015
B106/B101

5.3700

AUTHORS: Nesmeyanov, A. N., Sazonova, V. A., and Drozd, V. N.

TITLE: Influence of the carboxyl and carbomethoxy groups on the substitution of halogen in ferrocene compounds

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 1, 1962, 45 - 47

TEXT: This work has been undertaken to ascertain whether halogen in ferrocene derivatives is easily substituted in the presence of carboxyl and carbomethoxy groups. Oxidation of 1'-bromo-1-acetylferrocene with iodine in absolute pyridine yielded 1'-bromoferrocene-1-carboxylic acid (recrystallized from aqueous alcohol, m. 154-158°C (decomposition), 41% yield). The bromium of this compound is completely exchanged for the acetoxy group when boiling with copper acetate in aqueous alcohol for 15 min. The yield of 1'-acetoxyferrocene-1-carboxylic acid (yellow crystals from benzene-hexane, m. 126-130°C (decomposition), readily soluble in water) was 60% of the theoretical value. The reaction product did not contain initial carboxylic acid. (The nephrite test was negative before

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B106/B101

Influence of the carboxyl and ...

purification of the product). The methyl ester of 1'-bromoferrocene-1-carboxylic acid (recrystallized from n-hexane, m. 68-69.5°C), obtained by esterification of the acid with diazomethane in 96% yield, reacts less readily with copper acetate under the same conditions than the relevant acid: After 30-min reaction, chromatography on aluminium oxide revealed 45% of the initial methyl ester besides the expected product, the methyl ester of 1'-acetoxyferrocene-1-carboxylic acid (m. 45.5-47°C, 16% yield). The methyl ester of 1'-acetoxyferrocene-1-carboxylic acid is partially decomposed during the chromatographic process. The fact that the carboxyl group, contrary to other electron-acceptor groups, increases the mobility of a halogen bound to the ferrocene system is explained as follows: The copper salt of 1'-bromoferrocene-1-carboxylic acid, formed at the beginning of the reaction, forms a coordinate bond, Cu...Br, whereby the C-Br bond is polarized and the halogen may be exchanged for the acetoxy group. This behavior is similar to the aromatic carboxylic acids ortho-substituted by halogen, which, in the presence of copper compounds, also exchange the halogen readily for nucleophilic groups. These facts can not be attributed to simple activating effects of the carboxyl group since the halogen is not as reactive in the relevant benzene carboxylic acids para-substituted by

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Influence of the carboxyl and ... S/062/62/000/001/002/015
B106/B101

halogen. The easy substitution of the halogen is mainly due to the polarity of the C-X bond, which is increased by the coordinate bond Cu...X. Steric factors may prevent the formation of the inner complex and thus lower the halogen mobility. The student A. K. Prokof'yev is mentioned. There are 1 table and 5 references: 1 Soviet and 4 non-Soviet. The three references to English-language publications read as follows: V. Weinmayer, USA Patent 2683157 (1954), Chem. Abstrs., 49, 10364a (1955); A. A. Goldberg, J. Chem. Soc., 1952, 4368; W. R. H. Hurtley, J. Chem. Soc., 1929, 1870.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: July 3, 1961

X

Card 3/3

Drozd, V.N.

AID Nr. 982-1 4 June

DIFERROCENYLS AND TERFERROCENYLS (USSR)

Nesmeyanov, A. N., V. N. Drozd, V. A. Sazonova, V. I. Romanenko, A. K. Prokof'yev, and L. A. Nikonova. IN: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 4, Apr 1963, 667-674.
S/062/63/000/004/012/022

A series of substituted diferrocenyls, 1,1'-diferrocenylferrocene, also named 1,1'-terferrocenyl (I), and higher homologues were synthesized at the Moscow State University imeni M. V. Lomonosov by the reaction of a mixture of

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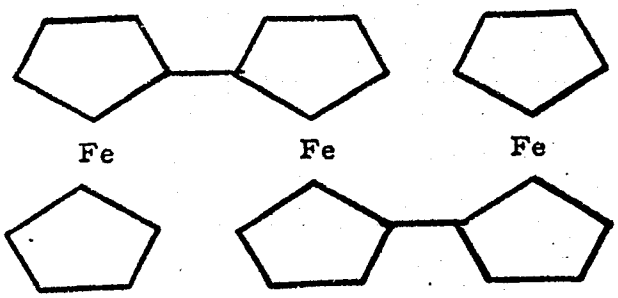
AID Nr. 982-1 4 June

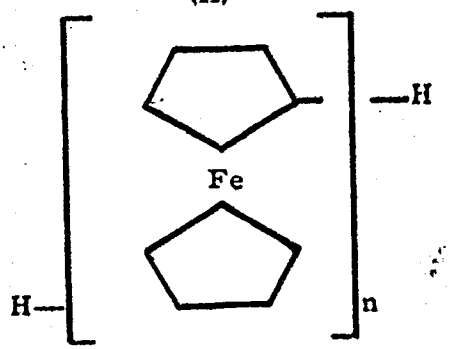
DIFERROCENYLS AND TERFERROCENYLS [Cont'd] S/062/63/000/004/012/022

bromoferrocene and 1,1'-dibromoferrocene with copper at 105-120°C. The following products were isolated by Al_2O_3 chromatography: ferrocene, diferrocenyl, 1,1'-terferrocenyl with the structure I and homologues II, in which $n \leq 4$:

(I)



(II)



The 1,1'-polyferrocenylenes obtained were diamagnetic. The derivatives of diferrocenyl and terferrocenyl were also obtained by application of the general

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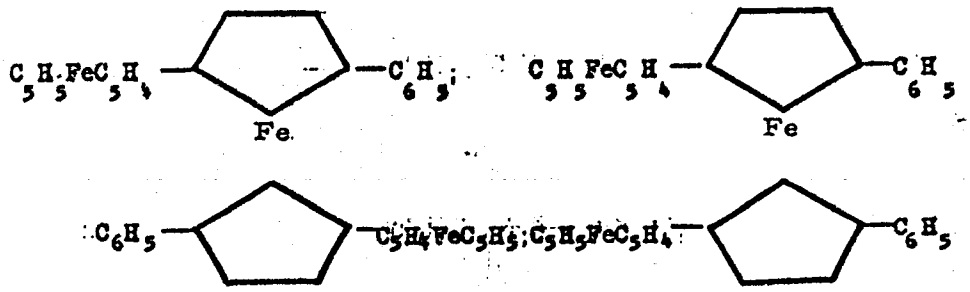
DIFERROCENYLS AND TERFERROCENYLS [Cont'd] S/062/63/000/004/012/022

method for synthesizing ferrocenes, that is, by using substituted cyclopentadienes (in this case, ferrocenylcyclopentadienes) as the starting materials. The synthesis of 3-ferrocenyl-1-phenylcyclopentadiene (III) was achieved by the condensation of acetylferrocene with the ethyl β-benzoylpropionate in the presence of sodium ethylate; III yielded a substituted terferrocenyl — 1,1'-diferrocenyl-3,3'-diphenylferrocene (IV) — after being treated first with sodium amide in liquid ammonia and then with ferrous chloride. Anti and syn structures are ascribed to IV, which could also be in the racemic and meso forms:



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AID Nr. 982-1 4 June

DIFERROCENYLS AND TERFERROCENYLS (Cont.)

S/062/63/000/004/012/022

Investigation of IR spectra indicated that bands with frequencies of 1000 and 1113 cm^{-1} are characteristic for the system of cyclopentadiene rings bound together in disubstituted diferrocenyls which contain no free cyclopentadiene rings.

[BN]

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L 10088-63 EWP(j)/EPF(c)/EWT(m)/BDS Pc-4/Pr-4 RM/WW/MAY

ACCESSION NR: AP3000302 S/0020/63/150/001/0102/0104

AUTHOR: Nesmeyanov, A. N. (Academician); Drozd, V. N.; Sazonova, V. A.

64
63

TITLE: Diazo ferrocene compounds

SOURCE: AN SSSR. Doklady*, v. 150, no. 1, 1963, 102-104

TOPIC TAGS: diazo, ferrocene, acidolysis, diazoamino, diazoaminoferrocene, ferrocenediazonium, [(phenyldiazonamino)cyclopentadienyl]cyclopentadienyliron, 1, 1'-ferrocenylenebisdiazonium

TEXT: Diazo derivatives of ferrocene have been prepared by acidolysis of diazoamino derivatives and their properties studied. Treatment of diazoaminoferrocene with concentrated HCl at -40 to -20C produced a violet solution which gave off nitrogen at temperatures as low as -15C. The presence of (chlorocyclopentadienyl)- and (aminocyclopentadienyl)-cyclopentadienyliron in the solution indicated the formation of a ferrocenediazonium cation intermediate. The existence of this cation was

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L 10088-63

ACCESSION NR: AP3000302

0

confirmed by the fact that similar treatment of [(phenyldiazoamino)-cyclopentadienyl]cyclopentadienyliron (I) also produced a violet solution of ferrocenediazonium. The last reacts with 2-naphthol to form the dark-green dye 1-ferrocenazo-2-naphthol. The fact that 1-phenylazo-2-naphthol was found among the acidolysis products of I shows that the tautomeric equilibrium of I is shifted toward 1-ferrocenyl-3-pheryltriazene. Ferrocenediazonium can undergo nucleophilic substitution in an HX solution (X = Cl, Br, I): nitrogen evolution began at temperatures as low as -15C and stopped at -5C, and the (halocyclopentadienyl)cyclopentadienyliron was formed in a yield greater than 70%. Treatment of bis[1-(phenyl-diazoamino)cyclopentadienyl]iron with concentrated HCl at -40 to -20C gave a dark-violet solution containing 1, 1'-ferrocenylenebisdiazonium. Orig. art. has: 5 formulas and 1 table.

ASSOCIATION: Moscow State University

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L 12919-63 EPF(c)/EWP(j)/EWT(m)/BDS ASD Pn-4/Pc-4 RM/WW/MAY
ACCESSION NR: AP3000519 S/0020/63/150/002/0321/0324

65
64

AUTHOR: Nesmeyanov, A. N.; Drozd, V. N.; Sazonova, V. A.

TITLE: Azides of ferrocene

SOURCE: AN SSSR Doklady, v. 150, no. 2, 1963, 321-324

TOPIC TAGS: ferrocene, azide, triazocyclopentadienyliron, (bromocyclopentadienyl) cyclopentadienyliron, bis(1-bromocyclopentadienyl)iron, (aminocyclopentadienyl) cyclopentadienyliron, bis(1-aminocyclopentadienyl)iron, triazole, triazene, diazonium salt, bis(1-phenyldiazoaminocyclopentadienyl)iron

ABSTRACT: (Triazocyclopentadienyl)cyclopentadienyliron (I) was obtained in a nearly quantitative yield by reaction of N_3^- iors with (bromocyclopentadienyl)-cyclopentadienyliron for 48 hours in aqueous N, N-dimethylformamide at room temperature. Boiling bis(1-bromocyclopentadienyl)iron in aqueous alcohol for six minutes produced bis(1-triazocyclopentadienyl)iron (II) in a 31% yield. Both reactions were conducted in the presence of Cu^{2+} ions. Compounds I and II are yellow crystalline substances melting at 53—54 and 58.5—59C, respectively, readily soluble in organic solvents, and decomposing on heating and in light. The low yield of II is explainable by the thermal instability of this compound.

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ACCESSION NR: AP3000519

The use of the known tolylsulfonyl azide method gave lower yields of I and II. The reduction of I with aluminum lithium hydride produced a 72% yield of (aminocyclopentadienyl)cyclopentadienyliron, previously obtained for the first time by two other methods at the authors' laboratory. A similar reduction of II produced bis(1-aminocyclopentadienyl)iron, which is unstable and oxidizes rapidly in air. In regard to the chemistry of the ferrocene azides, the addition of I to a strained double bond, such as that in dimethyl exo-cis-3, 6-endo-oxy-$\Delta 4$-tetrahydrophthalate, to form the corresponding triazoline and the formation of triazenes of the ferrocene series are mentioned. Such ferrocene triazenes as bis(1-phenyldiazoaminocyclopentadienyl)iron were used for preparing diazonium salts of the ferrocene series by acidolysis. Orig. art. has: 8 formulas and 7 tables.

ASSOCIATION: Moskovskiy gosudarstvenny*y universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 23Jan63 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: CH NO REF SOV: 003 OTHER: 006

Card 2/2

NESMEYANOV, A.N., akademik; SAZONOVA, V.A.; DROZD, V.N.

Substitution of halogen in bromoferrocene with aromatic and heterocyclic radicals. Dokl. AN SSSR 154 no.1:158-159 Ja'64. (MIRA 17:2)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.

ACCESSION NR: AP4019977 S/0020/64/154/006/1393/1394

AUTHORS: Nesmeyanov, A.N. (Academician); Sazonova, V.A.; Drozd, V.N.

TITLE: Decomposition of alpha-ferrocenylcarbonic ions to fulvenes

SOURCE: AN SSSR. Doklady*, v. 154, no. 6, 1964, 1393-1394

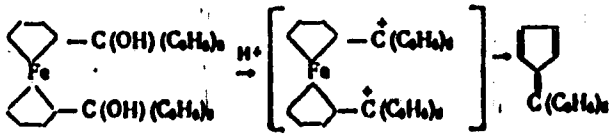
TOPIC TAGS: decomposition, alpha ferrocenylcarbonic ion, fulvene, diphenyl ferrocenylcarbinol, ferrocene derivative, diphenylfulvene

ABSTRACT: Since N-methyl-2-ferrocenylpyridine hydroxide decomposes in sunlight to form N-methyl-2-cyclopentadienylide-pyridine, cyclopentadiene and Fe^{2+}, it is hypothesized that the positive charge in the atom, combined with a ferrocene molecule, weakens the iron carbide bond. This hypothesis is shown to be true for certain α-ferrocenylcarbonic ions. The increased facility of their formation from corresponding carbinols and their esters is known because of the stabilizing effect of the free electronic vapor of iron. The carbide cations, being formed from diphenylferrocenylcarbinol and 1,1-bis-(-hydroxy-benzhydryl)-ferrocene in acetic acid in the presence of HCl, are exceptionally unstable and decomposed in

Card 1/2

ACCESSION NR: AP4019977

several minutes:



diphenylfulvene was precipitated from the reaction mixture. Orig. art. has: 00

ASSOCIATION: Moskovskiy gosudarstvenny*y universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 27Nov63 DATE ACQ: 23Mar64 ENCL: 00

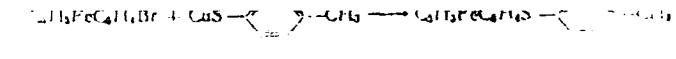
SUB CODE: CH NR REF SOV: 002 OTHER: 004

Card 2/2

L 24829-65 EWT(m)/EPP(c)/EPR/EWP(j) Pc-4/Pr-4/Ps-4 RPL RM/WW

S/0020/64/159/0[illegible]

Card 1/3



when ferrocenyl mesityl sulfide was

[illegible] ...versity)

[illegible] 164 ENCL: 00 SUB CODE: OC

[illegible]

L 27255-65 EWT(m)/EPF(c)/EWP(j) Pc-4/Pr-4 RM

ACCESSION NR: AP4010758 S/0020/64/154/001/0158/0159

[illegible] Ershov, A.N., Academician [illegible] Brazil, [illegible]

TITLE: Substitution of halide in bromoferrocene by aromatic and heterocyclic radicals

SOURCE: AN SSSR. Doklady, v. 154, no. 1, 1964, 158-159

TOPIC TAGS: halide, bromoferrocene, nitrogen, phenylferrocene, [illegible] ferrocene, N-thienylferrocene, N-pyrrylferrocene, N-[illegible]ene, ferrocenylphenylacetylene, [illegible] derivatives

[illegible] By heating [illegible]moferrocene with [illegible] pyrrole [illegible] Br, N-pyrrylferrocene is [illegible] yield of 17%. [illegible]ence of absorption bands at 3400-3440 [illegible] in the spectra of [illegible]ferrocene and N-pyrrylferrocene, [illegible] for the NH [illegible] pyrrol ring, confirms their [illegible] substituted [illegible] Copper phenylacetylene reacts [illegible] with [illegible] to [illegible]ethyl formamide to form ferrocenyl[illegible]phenylacetylene. The

Card 1/2

L 27266-65

ACCESSION NR: AP4010758

[illegible] al process for obtaining phenyl ferr[illegible] [illegible] ethyl ferrocene, N-pyrryl f[illegible] [illegible] ferro- [illegible] yl phenyl acetylene from [illegible] [illegible] ed. [illegible]

ASSOCIATION: Moskovskiy gosudarstvennyy universitet [illegible] Moscow [illegible] University

SUBMITTED: 20Jul63 ENCL: 00

SUB CODE: NO REF SOV: 00[illegible] OTHER: 001

Card 2/2

DROZD, V.N.; SAZONOVA, V.A.; NESMEYANOV, A.N., akademik

Ferrocenyl sulfones. Ferrocenylmesityl sulfone under the conditions of Smiles' rearrangement. Dokl. AN SSSR 159 no.3: 591-594 N '64 (MIRA 18:1)

1. Moskovskiy gosudarstvennyy universitet.

[illegible] S/020/65/160/002/[illegible]

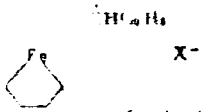
[illegible] N. (Academician) Sazonova, [illegible]

[illegible] α,p-ferrocenylcarbonium salts

[illegible] AN SSSR. Doklady, v. 160, no. 2, 1965, 355-358

[illegible] ferrocene, ferrocenyl carbonium salt, ferrocenyl phenyl carbinol, electron resonance, biphenyl, tetraphenylborate

[illegible] The authors synthesized two relatively stable ferrocenylphenylcarbonium [illegible] perchlorate and tetraphenylborate - from ferrocenylphenylcarbinol in [illegible]



, where x is [illegible] or $B(C_6H_5)_4$. [illegible] some of their properties. The authors found [illegible] ferrocenylphenylcarbonium perchlorate [illegible] tetraphenylborate are diamagnetic, which is in agreement [illegible]

L 27105-65

ACCESSION NR: AP5004596

[illegible] possible that the reduction of the ferrocenylphenylmethyl cation [illegible] $C_6H_5H_4$

[illegible] immediately undergoes pairing) takes place merely by heating with the tetra- [illegible] biphenyl was produced). The preparation [illegible] compounds [illegible] experiment is described. [illegible] formulas.

[illegible] Moskovskiy gosudarstvennyy universitet im. M. [illegible] (Moscow State University)

[illegible] SUBMITTED: [illegible] ENCL: 00 [illegible]

MURADKHANYAN, L.K., kand. sel'skokhoz. nauk; DROZDOV, V.N.; KOVALEV, A.T.; KALINCHENKO, V.I.

Machines and attachments for the placement of mineral fertilizers. Zemledelie 27 no.4:32-36 Ap '65. (MIRA 18:4)

1. Nauchno-issledovatel'skiy institut sel'skogo khozyaystva tsentral'nykh rayonov nechernozemnoy polosy.

L 27092-66 EWT(m)/EWP(j) RM

ACC NR: AP6017400 SOURCE CODE: UR/0062/65/000/007/1205/1208

AUTHOR: Nesmeyanov, A. N.; Drozd, V. N.; Sazonova, V. A.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Acetylation of N-acylaminoferrocenes

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 7, 1965, 1205-1208

TOPIC TAGS: organoiron compound, organic imine compound, amine, ferrocene, acetic anhydride

ABSTRACT: In studying acetylation in the ring of N-ferrocenylphthalimide and N-acetylferrocenylamine, the authors found that the acylamino-group is an electron acceptor with respect to ferrocene and directs substitution mainly in the free cyclopentadienyl ring. Thus, in the acetylation of N-ferrocenylphthalimide with acetic anhydride in the presence of H_3PO_4, the main reaction product was 1'-(N-phthalimido)-1-acetylferrocene and a smaller amount of homoannular N-phthalimidoacetylferrocene (yields of 40 and 7% of theoretical, respectively). Acetylation of N-acetylferrocenylamine proceeds with the formation of large amounts of tarry substances; of the reaction products with 17% yield only 1'-acetamino'1'acetylferrocene was isolated. It was found that 1'-amino-1-acetylferrocene is obtained by the hydrolysis of 1'-(N-phthalimido)-1-acetylferrocene and 1'-acetaminoacetylferrocene and from the Curzius reaction, from 1'-acetylferrocene-1-carboxylic acid. Orig. art. has: 1 formula. [JPRS]

SUB CODE: 07 / SUBM DATE: 10Jun63 / ORIG REF: 004 / OTH REF: 004

UDC: 542.91+592.957+546.72

DROZD, V.N.; SHEYCHENKO, V.I.; FOSTNOV, V.N.

Structure of hydrazones formed from β-dicarbonyl compounds by means of azo-coupling reaction. Izv. AN SSSR.Ser.khim. no.10:1888-1891 '65. (MIRA 18:10)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

L 16984-66 EWT(m)/EWP(j)/T WW/JW/JWD/RM
ACC NR: AP6002101 SOURCE CODE: UR/0062/65/000/011/2061/2063

AUTHORS: Nesmeyanov, A. N.; Sazonova, V. A.; Drozd, V. N.; Rodionova, N. A.; Zudkova, G. I.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Properties of α-ferrocenylcarbonic ions

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 11, 1965, 2061-2063

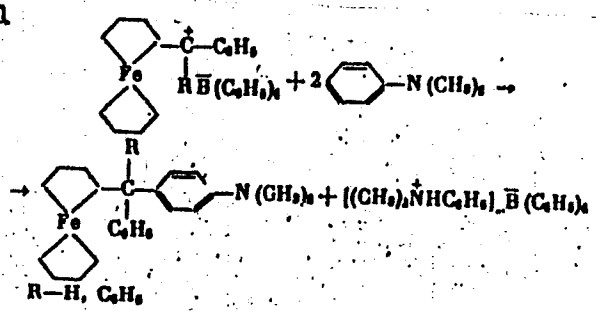
TOPIC TAGS: ferrocene, organic synthetic process, nuclear magnetic resonance

ABSTRACT: Reaction of tetraphenylborates of phenyl-(I) and diphenylferrocenyl-carbonates (II) with dimethylaniline (III) was investigated. Preparation of I and II and some of their properties were described by the authors in a previous work (Dokl. AN SSSR, 160, No. 2, 1965). The reaction described here takes place at 5--20C within a few minutes and proceeds according to the equation

Card 1/2 UDC: 542.91+547.1'3+546.72

L 16984-66

ACC NR: AP6002101



The structures of the products were confirmed by NMR spectra. Preparation of p-dimethylaminophenylferrocenyl-, p-dimethylaminodiphenylferrocenyl-, and p-dimethylaminophenyldiferrocenylcarbinols is described. The authors express their gratitude to V. I. Sheychenko for working on the NMR spectra. Orig. art. has: 1 equation.

SUB CODE: 07/ SUBM DATE: 24Mar65/ ORIG REF: 001 OTH REF: 001

Card 2/2 mg5

L 26575-66 EWT(m)/EWP(j)/T IJP(c) RM

ACC NR: AP6016974 SOURCE CODE: UR/0020/65/165/003/0575/0577

AUTHOR: Nesmeyanov, A. N. (Academician); Sazonova, V. A.; Drozd, V. N.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Introduction of aromatic and heterocyclic radicals into ferrocene. Reaction of bromoferrocene with organomagnesium compounds

SOURCE: AN SSSR. Doklady, v. 165, no. 3, 1965, 575-577

TOPIC TAGS: ferrocene, organomagnesium compound, brominated organic compound, organic synthetic process, Grignard reagent, nuclear magnetic resonance, chromatography

ABSTRACT: In previous studies the authors synthesized hydroxyferrocene, 1,1'-dihydroxyferrocene, ferrocenylamine, diferrocenylamine, phenylferrocenylamine, diphenylferrocenylamine, ferrocenylazide (followed by conversion to diazo compounds of ferrocene), ferrocenylarylsulfones and other ferrocene derivatives through halo-derivatives of ferrocene. In this work the reaction of bromoferrocene with organomagnesium compounds was investigated. Phenyl-, alpha-thienyl-, and alpha-naphthylferrocenes were produced in 75-85% yield by the addition of an ether solution of Grignard reagent to a mixture of bromoferrocene, copper bromide, and copper, followed by distillation of the ether and heating of the reaction mixture under nitrogen at 130°. In the case of an alicyclic Grignard reagent, cyclohexyl magnesium chloride, the reduction of bromoferrocene to ferrocene became the basic reaction, and only cyclohexene was isolated from

Card 1/2

UDC: 547.257.2+547.254.6

L 26575-66

ACC NR: AP6016974

2

the reaction mixture. Pyrryl magnesium bromide reacted with bromoferrocene in the presence of Cu_2Br_2 / Cu to form a mixture of alpha- and beta-pyrryl-ferrocenes, which were separated chromatographically on alumina by elution with a mixture of heptane-benzene (4:1); alpha-pyrrylferrocene is eluted first. The reaction of indolyl magnesium bromide resulted in the formation of N- and beta-indolylferrocenes. The structures of the compounds obtained were demonstrated by nuclear magnetic resonance studies. The authors thank V. I. Sheychenko, of the Laboratory of Physicochemical Research, Institute of Chemistry of Natural Compounds, AN SSSR, where the measurements of the nuclear magnetic resonance spectra were carried out. [JPRS]

SUB CODE: 07, 20 / SUBM DATE: 28May65 / ORIG REF: 002 / OTH REF: 004

Card 2/2

DROZD, V., inzhener.

Prepare for winter work ahead of time. Biul.tekh.inform. 3 no.9:26-27 S '57. (MIRA 10:11)
(Building--Cold weather conditions)

DROZD, V.P.

DROZD, V.P., inzh.

[redacted]

Producing and using clay fillers in construction. Biul. tekh. inform. 3 no.11:6-8 N '57. (MIRA 11:1)

(Lightweight concrete)

DROZD, Vladimir Petrovich; STRZHALKOVSKIY, Ye.G., red.; ROTENBERG, A.S., red.izd-va; PUL'KINA, Ye.A., tekhn.red.

[New demountable temporary structures] Novye inventarnye vremennye sooruzheniia. Leningrad, Gos. izd-vo lit-ry po stroit., arkhit. i stroit. materialam. 1958. 57 p. (MIRA 12:1)

1. Chlen-korrespondent Akademii stroitel'stva i arkhitektury SSSR (for Strzhalkovskiy).
(Buildings, Prefabricated)

DROZD, V.P., inzh.

Simplified conveyer for making wall panels. Biul. tekh. inform. 4 no.2:5-8 F '58. (MIRA 11:3)
(Concrete blocks) (Conveying machinery)

Drozd, V.P.

IVANOV, A.K., inzh.; DROZD, V.P., inzh.; ALEKSEYEV, N.P., inzh.; KIM, V., inzh.

Reinforced concrete roof for housing construction. Biul. tekh. inform. 4 no.4:14-16 Ap '58. (MIRA 11:5)
(Roofing, Concrete)

DROZD, I.P., inzh.

All-Union conference on expanded clay fillers. Biul. tekh. inform. 4 no.8:17-18 Ag '58. (MIRA 11:8)
(Stalingrad—Building materials—Congresses)

DROZD, V.P., inzh.

Using slags, cinder, and local clays in making agloporites. Biul. tekh.inform. 4 no.11:5-7 N '58. (MIRA 11:12)
(Building materials)

DROZD, V., inzh.

Reusable temporary structures. Stroitel' no.6:18-19 Je '59. (MIRA 12:9)

(Buildings, Prefabricated) (Buildings, Portable)

BULAVKO, A.G. [Bulauko, A.R.]; DROZD, V.V.

Errors in determining the areas and some other characteristics of drainage basins. Vestsi AN BSSR. Ser. fiz.-tekh. nav. no.3: 113-117 '63. (MIRA 16:10)

DROZD, V. V.

Kars' phenomena in White Russia. Izv Vses geog ob-va 96 no. 1: 54-56 Ja-F '64. (MIRA 17:5)

DROZD, W.

Polish Technical Abstracts
No. 4, 1953
Metallurgy

2389 621.794.422.5 : 669.14

Kamecki J., Drozd W. Formula for Calculating the Composition of Phosphating Bath.

„Wzór do obliczania składu kąpieli do fosforowania". (Prace Inst. Metalurgii No. 5), Katowice, 1952, PWT, 7 pp., 5 figs., 7 tabs.

The authors deduced theoretical formulae for calculating the total P_2O_5 content in zinc baths phosphating (without accelerating agents) at a temperature of 25°C and 98°C. At a temperature of 25°C, the total P_2O_5 content (in grams per litre of solution) equals: $x_{25} = 2.17_y + 1.40\sqrt[4]{y^3}$; at a temperature of 98°C correspondingly: $x_{98} = 2.17_y + 2.83\sqrt[4]{y^3}$, where y is an a priori arbitrarily chosen quantity of grams of zinc in one litre of solution. The practical usefulness of the formulae deduced was confirmed by means of 1) corrosion-resistance tests of phosphate protective coatings formed on steel in a bath of calculated composition, 2) measurement of the porosity of coatings, 3) measurement of the potential variations of phosphated specimens during the phosphating process. The investigations show that P_2O_5 values, calculated according to the above formula, are maximum values, i.e. in practice the P_2O_5 content in one litre of the solution must not exceed the quantity of P_2O_5 calculated.

DROZD, W.

"Inter-crystalline Corrosion of Alloys Becoming Old."

SO: Hutnik, No. 5, Stalinogrod, May 1953 (Air, Treasure Island # 144566, Feb. 1954, Unclassified.)

DROZD, W.

"Aluminum Coating of Steel." p. 72 (HUTNIK, Vol. 20, No. 2, Feb. 1953) Warszawa

SO: Monthly List of East European Accessions, Library of Congress, Vol. 2, No.10, October 1953. Unclassified.

DROZD, W.

"Corrosion and Anticorrosives; Intercrystaline Corrosion of Aging Alloys." p. 177.
"Polish Standards in Metallurgy." p. 181 (HUTNIK, Vol. 20, No. 5, May 1953) Warszawa

SO: Monthly List of East European Accessions, Library of Congress, Vol. 2, No.10, October 1953. Unclassified.

DROZD, W.

Coating a steel band with zinc by the application of the Sedzimir method.

p. 340
Vol. 22, no. 9, Sept. 1955
HUTNIK
Katowice

SO: Monthly List of East European Accesstions (EEAL), LC, Vol. 5, no. 2
Feb. 1956

DROZD, Wieslaw, mgr inz.; GABRIELOW, Franciszek, mgr inz.

Testing the corrosion resistance of steel construction materials under the conditions of winning natural gas. Nafta Pol 17 no.9: 250-254 S '61.

1. Instytut Metalurgii Zelaza, Gliwice.

P/043/62/000/006/001/001
D001/D101

AUTHOR: Drozd, Wiesław, Master of Engineering

TITLE: Range and prospects of application of stainless steel type Cr-Mn-Ni-N

PERIODICAL: Wiadomości hutnicze, no. 6, 1962, 176-179

TEXT: The informative article outlines the uses of Cr-Mn-Ni-N steel (4-5% Ni) as a substitute for 18/8 steel (8% Ni) to cope with the nickel shortage. Closest to 18/8 steel in mechanical and technological properties upon appropriate thermal treatment are 0H17N4G8 and 1H17N4G8 steels, whose composition are specified by the PN-61/H-86020 standard as follows: 0H17N4G8 -- max. 0.07%C, 7.0-9%Mn, max. 0.8%Si, max. 0.05%P, max. 0.030%S, 16.0-18.0%Cr, 4.0-5.0%Ni, 0.12-0.25%N; 1H17N4G8 -- max. 0.10%C, 7.0-9.0%Mn, max. 0.8%Si, max. 0.050%P, max. 0.030%S, 16.0-18.0%Cr, 4.0-5.0%Ni, and 0.12-0.25%N. Polish industry is capable of keeping the carbon content below the critical level of 0.05-0.06% for intergranular corrosion control.

Card 1/2

Range and prospects of application of ... P/043/62/000/006/001/001
D001/D101

Further research on intergranular corrosion is indispensable. US experiences with 200 series stainless steels and tests made at the IMŻ and "Baildon" metallurgical plant are quoted as indicative of the usability of Cr-Mn-Ni-N steel in organic, petrochemical, food, and cold storage industries. Conclusions: Wide use can and should be made of Cr-Mn-Ni-N steels. The prerequisites for successful introduction of these steels are a large assortment and continuous supply, and large scale laboratory and industrial research on corrosion resistance of Cr-Mn-Ni-N steels.

Card 2/2

DROZD., Ya.I.

Investigating the actual performance of diagonal wooden bridge trusses. Sbor.nauch.trud.Bel.politekh.inst. no.70:3-21 '59. (MIRA 13:5)

(Trusses--Testing) (Bridges, Wooden)

ANISHCHENKO, A.F.; DROZD, Ya.I.; MURASHKO, A.I.

Effect of overhead frame elements on stresses in hingless arches of reinforced concrete bridges. Sbor.nauch.trud.Bel.politekh. inst. no.70:73-79 '59. (MIRA 13:5)
(Strains and stresses) (Bridges, Concrete)

DROZD, Ya.I., zasluzhennyy deyatel' nauki i tekhniki BSSR

Methodology of degree projects in structural engineering.
Sbor. metod. rab. Bel. politekh. inst. no. 1:85-88 '59.
(MIRA 14:1)
(Project method in teaching) (Engineering--Study and teaching)

PHASE I BOOK EXPLOITATION SOV/5510

Drozd, Yakov Ivanovich, Nikolay Alekseyevich Tkachenko, Il'ya Markovich Gel'fman, Vladimir Iosifovich Volynskiy

Opyt proyektirovaniya i stroitel'stva zhelezobetonnykh predvaritel'no napryazhennykh mostov v Belorussii (Experience in the Design and Construction of Prestressed Reinforced Concrete Bridges in Belorussia) Minsk, Redizdat otdel BPI im. I. V. Stalina, 1960. 281 p. Errata slip inserted. 2,500 copies printed.

Sponsoring Agency: Ministerstvo vysshego, srednego spetsial'nogo i professional'nogo obrazovaniya BSSR. Belorusskiy politekhnicheskiy institut imeni I. V. Stalina.

Ed. (Title page): Ya. I. Drozd, Honored Scientist and Technologist BSSR; Ed. of Publishing House: N.V. Kapranova; Tech. Ed.: P.T. Kuz'menok.

PURPOSE: This book is intended for designing engineers and manufacturers of prestressed bridge components.

Card ~~1/8~~

COVERAGE: The book provides a generalized discussion of experience gained in the production of prestressed bridge components and the assembly of prestressed bridges in Belorussia. Special attention is given to the production, preparation, and mounting of prestressed components. Chapters VI and VII were written by Ya. I. Drozd; Ch. III and the Appendixes by N.A. Tkachenko; Ch. II by I.M. Gel'fman; Chs. IV and V by V.I. Volynskiy. The authors thank Ya. D. Livshits, Doctor of Technical Sciences, Engineer I.I. Grigorovich, Head of the Gushosdor (Main Administration of Highways) of the Council of Ministers of the BSSR, and A.F. Krayukhin, Engineer. There are 37 references, all Soviet (including 2 translations).

TABLE OF CONTENTS:

DROZD, Ya.I.; BRUYAK, Ya.A.; IZAKOV, Sh.I., tekhn. red.

[Examples of calculations of reinforced concrete elements] Primery rascheta zhelezobetonnykh konstruktsii. Minsk, Redaktsionno-izd.otdel BPI im.I.V.Stalina, 1960. 165 p. (MIRA 14:12)
(Precast concrete)

DROZD, Ya.I.; LOBANOV, A.T.

Study of the strength of agloporite under compression.
Sbor.nauch.trud.Bel.politekh.inst. no.89:8-15 '60. (MIRA 14:8)
(Aggregates (Building materials))--Testing)

DROZD, Ya.I.

Study of deformation characteristics and the modulus of elasticity of agloporite concrete under compression. Sbor. nauch.trud.Bel.politekh.inst. no.89:42-48 '60. (MIRA 14:8)
(Lightweight concrete--Testing)

L 21937-66 EWP(f)/T-2/ETC(m)-6 WW

ACC NR: AP6014461 SOURCE CODE: UR/0114/65/000/009/0003/0006

AUTHOR: Zhukovskiy, M. I. (Doctor of technical sciences); Gukasova, Ye. A. (Engineer); Drozd, Ye. Ye. (Engineer)

ORG: none

TITLE: Development and experimental investigation of the cascade design of the root section of last-stage stator blading of high-capacity steam turbines

SOURCE: Energomashinostroyeniye, no. 9, 1965, 3-6

TOPIC TAGS: turbine stator, steam turbine, aerodynamic effect, viscosity

ABSTRACT: The article presents the results of an experimental investigation of the aerodynamic profiling of transonic stationary blading with low energy losses over a wide range of flow regimes. Six different cascade designs are compared, and it is found that the optimal cascade design is C1 (energy losses ~ 0.04), where allowance is made for the effect of viscosity and the special features of the flow around trailing edges and the profile of the subsonic part of the channel is more carefully designed. The profiling of the peripheral rims of the outlet section of the channels of the transonic cascades of the stator blading was based on specially designed Laval nozzles of minimum length, with the flow line being taken at a distance of 0.35 A* (where A* is the critical cross section) from the nozzle axis. Orig. art. has: 5 figures and 1 table. [JPRS]

SUB CODE: 10, 20 / SUBM DATE: none / ORIG REF: 006

Card 1/1

DROZDA, V. K.

"Cold Plastic Welding of Certain Nonferrous Metals." Cand Tech Sci, Belorussian Polytechnic Inst, Minsk, 1954. (RZhKhim, No 2, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (13)
SO: Sum. No. 598, 29 Jul 55

137-58-4-7532

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 169 (USSR)

AUTHOR: Drozda, V.K [Drozda, V.]

TITLE: Cold Plastic Welding of Certain Nonferrous Metals (Kholodnaya plasticheskaya svarka nekotorykh tsvetnykh metallov) [Kai kuriu spalvotu metalu saltas plastinis suvirinimas]

PERIODICAL: Kauno politechn. inst. darbai. Tr. Kaunassk. politekhn. in-ta, 1957, Vol 6, pp 83-92 (in Lithuanian, Summary in Russian)

ABSTRACT: An investigation has been made of the laws governing the process of spot pressure welding (SPW) of nonferrous metals. The strength of the weld depends upon the cleanliness of the surfaces to be welded, the dimensions of the contact surface, the unit pressure applied to the welded surfaces, rates of deformation, heat treatment of the joint, and the process temperature. Different dies are suggested for SPW of different metal couples in accordance with the thicknesses of the specimens to be joined. The possibility of joining different metals to each other is noted. The use of SPW in industry is recommended in view of its high output and economy. Practical recommendations are advanced to raise the strength of the bond, and best die design practice is noted. The

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137-58-4-7532

Cold Plastic Welding of Certain Nonferrous Metals

physical nature of the process of weld formation (formation of cohesive surface forces and diffusion) is examined. The possibility that recrystallization may occur upon welding at high temperature is indicated.

T. A.

1. Metals--Nonferrous--Spot welding 2. Spot welds--Effectiveness
3. Dies--Spot welding--Design

Card 2/2

DROZD, Zdzislaw, mgr inz.

The WK-620 crossbar multiswitch, a new Polish component of crossbar telephone exchanges. Prace inst teletechn 8 no.3:126-134 '64.

1. T-2 Telephone Equipment Works, Warsaw. Submitted June 22, 1964.

DROZDEK, L.

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HUTNIK, Prague, Vol. 6, no. 2, Feb. 1956.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 5, No. 6 June 1956, Uncl.

DROZDEN, Vladimir, dr.; NADVORNIK, Pavel, doc. dr. CSc.

A variant of the biologic neuron model according to N.E. Vvedenskiy. Kybernetika 1 no.2:180-183 '65.

1. Department of Cybernetics of Health Institute of the Faculty of Hospital, Hradec Kralove (for Drozden). 2. Neurosurgical Clinic of the Faculty Hospital, Hradec Kralove (for Nadvornik). Submitted June 22, 1964.

DROZDENKO, N.P.

The effector of a conditioned reflex of the second order. Fizol. zh.SSSR 36 no.5:519-523 Sept-Oct 50. (CLML 20:4)

1. Institute of Experimental Medicine of the Academy of Medical Sciences USSR and the Physiological Laboratory of the Balneological Institute imeni I.V.Stalin, Sochi.

DROZDENKO, N. P.

1. ZUBRILIN, A. A., Prof.; EVSEYEV, P. Ye.; DROZDENKO, N. P.; KUKOLEVA, A. I.

2. USSR (600)

4. Cellulose

7. Physiological role of the rumen in the process of digesting the cellulose in coarse feeds, Sov. zootekh., 7, No. 12, 1952.

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YEVSEYEV, P.Ye. kandidat biologicheskikh nauk; DROZDENKO, N.P.

Capacity of individual quarters of the udder in Kholmogory cows. Trudy VNIIK 3:460-464 '56. (MLRA 10:4)
(Udder)

DROZDENKO, V.

Ukrainian Communist Youth League members in the drive to bring radio to the village. Radio no.3:7 Mr '56. (MLRA 9:6)

1.Pervyy sekretar' TSentral'nogo komiteta Leninskogo kommunisticheskogo soyuza molodezhi Ukrainy.
(Ukraine--Radio)

DROZDENKO, V.I.

Contribution of party organizations of the Kiev region to the introduction of synthetic diamonds. Mashinostroitel' no.10: 3-5 O '64. (MIRA 17:11)

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ACCESSION NR: AP4005835 S/0226/63/000/006/0011/0017

AUTHOR: Avgustinik, A. I.; Vigdergauz, V. Sh.; Gropyanov, V. M.; Drozdetskaya, G. V.

TITLE: Effect of powder fineness on the density of niobium carbide parts at various sintering temperatures

SOURCE: Poroshkovaya metallurgiya, no. 6, 1963, 11-17

TOPIC TAGS: niobium carbide, sintered niobium carbide, niobium carbide powder, niobium carbide sintering, niobium carbide density, sintering, powder metallurgy, density

ABSTRACT: Niobium carbide sinters poorly due to its high melting point (3750 K), leading to lower microhardness. The present authors therefore studied the relationship between particle size, sintering temperature, density and heat resistance of NbC and attempted to find methods for producing niobium carbide powder with a relative density not lower than 90% of the theoretical value at low sintering temperatures. This is very important for creating heat resistant structures. Pulverization in vibro-mills was used to obtain fine particles of niobium carbide, thus increasing the surface energy prior to cold pressing. Fig. 1 in the Enclosure shows the effect of the sintering temperature on the specific gravity of niobium carbide

ACCESSION NR: AP4005835

with varying initial specific surface area. This test was performed on the Deryagin device. As seen from the graph in Fig. 2 of the Enclosure, greater dispersion of the powder leads to higher density at lower temperatures. Two formulas are proposed by the authors for relating the sintering temperature and fineness of the carbide powder. Experimental data and the theoretical values obtained from these formulas differed by not over 1-1.5%. Tests performed by the authors also corroborated the phenomenologic theory mentioned in articles by M. S. Koval'chenko, G. V. Samsonov and V. V. Skorokhod. It was found that a relative density of niobium carbide powder of up to 97% can only be obtained with very fine powder and sintering temperatures $\leq$ 0.6 m.p. On the basis of experimental data, the lattice destruction energy for NbC is calculated to be approximately 410 k-J/mol. Orig. art. has: 7 figures, 4 tables and 9 equations.

ASSOCIATION: Leningradskiy Tekhnologcheskiy institut im. Lensoveta (Leningrad Technological Institute)

SUBMITTED: 19Nov62 DATE ACQ: 20Jan64 ENCL: 02

SUB CODE: MM NO REF SOV: 009 OTHER: 000

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ACCESSION NR: AP4005835

ENCLOSURE: 01

Fig. 1. Density of NbC in relation to the sintering temperature: 1 - 1.56; 2 - 4.1; 3 - 6.2; 4 - 12.5

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ACCESSION NR: AP4005835

ENCLOSURE: 02

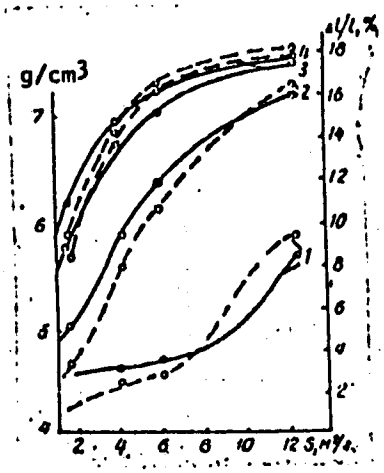

Fig. 2. Density (solid line) and contraction (dash line) of NbC in relation to the specific surface area of the sintered powder. Sintering temperature: 1 - 2240±20K; 2 - 2020±20K; 3 - 1820±20K; 4 - 1590±15K

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L 20498-65 EPF(c)/EPF(n)-2/EPR/EWG(j)/EPA(c)-2/EPA(w)-2/EWT(m)/EWG(v)/EP

Pr-4/Pe-4/Pt-10/Pu-4/Pab-10 ASD(m)-3/AS(mp)-2/IJP(c)

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L 20498-65

AP5001303

L 08404-67 EWT(m)/EWP(e)/EWP(t)/ETI IJP(c) JD/WW/JG/GD/AT/WH/JH
ACC NR: AT6027154 (A) SOURCE CODE: UR/0000/65/000/000/0257/0264

AUTHOR: Avgustinik, A. I.; Vigdergauz, V. S.; Gandel'sman, I. L.; Gorfunkel', L. V.; Gropyanov, V. M.; Drozdetskaya, O. V.

ORG: none

TITLE: Use of a cermet made of tungsten and aluminum oxide in the preparation of cathodic heaters of electron tubes

SOURCE: AN SSSR. Otdeleniye obshchey i tekhnicheskoy khimii. Issledovaniya v oblasti khimii silikatov i okislov (Studies in the field of chemistry of silicates and oxides). Moscow, Izd-vo Nauka, 1965, 257-264

TOPIC TAGS: high temperature cermet material, tungsten, aluminum oxide

ABSTRACT: The aims of the study included (1) the selection of $W-Al_2O_3$ cermet compositions suitable for the preparation of cathodic heaters, (2) a study of their physical properties (resistivity as a function of temperature, emissivity, strength, porosity, etc.) as functions of the composition and processing. The influence of the regularity of distribution of the metal (tungsten) and oxide ($\alpha-Al_2O_3$) particles and degree of dispersion of the starting materials on the properties of the sintered cermets was determined. The sintering was found to worsen with rising tungsten content: the shrinkage and relative density decrease, and the porosity increases. The mechanical and elastic properties are determined by the porosity. The optimum combination of

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L 08404-67

ACC NR: AT6027154

proportion corresponds to a cermet composition containing 50-75% W and 50-30% Al_2O_3, and this composition is recommended for applications in industry after final improvements in the process of its preparation are made. Orig. art. has: 5 figures, 5 tables and 1 formula.

SUB CODE: 11/ SUBM DATE: 08Feb65/ ORIG REF: 005/ OTH REF: 002

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L 08447-67 EWP(e)/EWT(m)/EWP(t)/ETI IJP(c) JD/JG/GD/AT/JAJ/WH

ACC NR: AT6027153 (A) SOURCE CODE: UR/0000/65/000/000/0250/0256

AUTHOR: Avgustinik, A. I.; Gropyanov, V. M.; Drozdotskaya, G. V.; Vigdergauz, V. S.

ORG: none

35
B+1

TITLE: Kinetics of formation and decomposition of solid solutions in refractory carbide systems

SOURCE: AN SSSR. Otdeleniye obshchey i tekhnicheskoy khimii. Issledovaniya v oblasti khimii silikatov i okislov (Studies in the field of chemistry of silicates and oxides). Moscow, Izd-vo Nauka, 1965, 250-256

TOPIC TAGS: solid solution, ~~decomposition~~, zirconium carbide, niobium compound, zirconium compound

ABSTRACT: The formation of solid solutions in ZrC-NbC and TiC-NbC systems was studied as a function of temperature and duration of the synthesis process. The products were analyzed by x-ray, metallographic and chemical methods. In both systems, the matrix of the solid solution is NbC, whose lattice can increase in volume without breaking its chemical bonds. As the holding time increases, a gradual decomposition of the solid solutions takes place. Concentration-time curves for solid solutions at various synthesis temperatures showed that the formation of solid solutions is faster and their decomposition slower the higher has been the synthesis temperature. The data obtained permit one to calculate the time required for the maximum solubility of TiC

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ACC NR: AT6027153

and ZrC in NbC to be reached. The observed decomposition of the solid solutions in the ZrC-NbC systems leads to the conclusion that a two-phase region exists in their phase diagrams at below-solidus temperatures. Orig. art. has: 5 figures and 3 tables.

SUB CODE: 07/ SUBM DATE: 04Jul64/ ORIG REF: 013/ OTH REF: 001

Card 2/2

DROZDETSKIY, F.N., inzh.

Using a terminal switch with remote control in the construction of industrial smoke stacks. Mont. i spets. rab. v stroi. 23 no.9: 23-25 S '61. (MIRA 14:9)

1. Chelyabinskoye stroitel'no-montazhnoye upravleniye tresta Soyuzteplostroy.
(Chimneys) (Remote control) (Hoisting machinery)

[illegible], F.N., inzh.

Using the "4030" model hydraulic crane in building bridges. [illegible] 1 [illegible]. [illegible] 21 no.4:22-25 Ap '[illegible]. (MIRA [illegible])

1. [illegible] stroitel'no-montazhnogo upravleniya [illegible] Stroitsya.
([illegible] Cranes, derricks, etc.)

DROZDETSKIY, Vasiliy Vasil'yevich; METT, Yu.F., redaktor; INOZEMTSEVA, A.I., redaktor izdatel'stva; KOZ'MIN, G.M., tekhnicheskiy redaktor

[Handbook in mathematics for schools of topography] Posobie po matematike dlia topograficheskikh tekhnikumov. Moskva, Izd-vo geodezicheskoi lit-ry, 1956. 362 p.
(Mathematics) (Surveying) (MLRA 10:2)