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Card 1/2 of 10

ANDRIANOV, K.A.; KUZNETSOVA, I.K.

Reactions of formation of dimethylphosphonyltitanoxane oligomers.
Izv. AN SSSR. Ser. khim. no.6:945-949 '65.

(MIRA 18:6)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

"APPROVED FOR RELEASE: 06/19/2000

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CIA-RDP86-00513R000928220006-2"

were prepared by condensation of dimethylphosphinic acid with n-tetraethyl

ACC NR: AP7011367

SOURCE CODE: UR/0363/66/002/011/1913/1920

AUTHOR: Andrianov, K. A.; Kuznetsova, I. K.; Bebchuk, T. S.; Kolchina, A.; Shaipova, I.

ORG: Institute of Organoelemental Compounds, Academy of Sciences USSR
(Institut elementoorganicheskikh soyedineniy AN SSSR)

TITLE: Poly(diorganophosphonyl)titanoxane oligomers

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 11, 1966, 1913-1920

TOPIC TAGS: oligomer, organic chemical synthesis, titanium oxide, polymer stability

SUB CODE: 07

ABSTRACT: This report examines the synthesis and properties of compounds with the molecular chains Ti-O-Ti framed by different alkyl (aryl) phosphonyl groups. The basis of the synthesis of oligomers with titanoxane chains were reactions of hydrolytic polycondensation of bis(diorganophosphonyl)dibutyltitanates and reactions of replacement of butoxy-groups in polybutyltitanate with the residues of alkyl(aryl)phosphinic acids. The synthesis of the original titanophosphororganic compounds was accomplished through heating of ortho-butyltitanate with alkyl(aryl)phosphinic and

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ACC NR: AP7011367

phosphoric acids, taken in 1:2 molar ratio at a temperature of 130-140°C. The titanophosphorganic compounds obtained are solid or resinlike products readily soluble in most organic solvents. Investigation of the stability of poly(diorganophosphonyl)titanoxane oligomers to the action of high temperatures in the presence of air oxygen established that thermooxidative destruction up to 450°C occurs chiefly in the direction of the oxidation of organic groups near the phosphorus atom framed by the titanoxane chain. No destruction at the Ti-O-P bond, and also at the Ti-O-Ti bond at this temperature is observed. Destruction of the Ti-O-Ti bond, that is the main chain of the molecule of poly(diorganophosphonyl)titanoxane upon heating oligomers to 800°C was not observed. Orig. art. has: 7 figures, 3 formulas and 6 tables. [JPRS: 40,351]

Card 2/2

SOBOLEV, N.V.; KUZNETSOVA, I.K.

New data on the mineralogy of eclogite from the kimberlite pipes of Yakutia. Dokl. AN SSSR 163 no.2:471-474 J1 '65. (MIRA 18:7)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR. Submitted February 10, 1965.

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Kern, L. G. (1956) Optical Polarization Method for Stress Analysis: Transactions of the Conference of February 13-24, 1956, (London) Int. J. of Engineering Sci. 4: 1-10
Kern, L. G. (1956) Optical Polarization Method for Stress Analysis: Transactions of the Conference of February 13-24, 1956, (London) Int. J. of Engineering Sci. 4: 1-10

problems and new methods of investigation and describe apparatus and methods used in the optical method. Solutions of specific: two-dimensional and three-dimensional problems occurring in shipbuilding, aircraft design, engine construction, in various branches of heavy and precision machine design, in mining, metallurgy, hydraulic structures, railroad transport, in structural mechanics, geodesy, etc., are given. Solution of the three-dimensional problem by means of the method of plane-stress is introduced and the use of this method for the solution of problems associated with plasticity, creep, expansion, rupture, etc., is demonstrated. Reports previously published elsewhere are printed here in abbreviated form. No precedents are mentioned. References are found at the end of the report.

- Optical Polarization Method (cont.) 807/0042
 - 33. Roshchinsky, M. Z., and L. A. Sokolov. On the Use of Silver Chloride as a Medium for the Polarization Treatment of Beams of the Optical Polarization Method. 265
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- 37. Gennady, M. V., A. I. Gendin, and I. A. Duzhikova. Use of the Optical Polarization Method in Investigation of Heterogeneous Processes. 290
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AUTHORS: Liberman, A. L., Kuznetsova, I. M., 20-118-5-26/59
Tyun'kina, N. I., Kazanskiy, B. A.,
Member of the Academy.

TITLE: Stereoisomeric 1-Methyl-2-Alkylcyclohexanes (Stereoizomernyye
1-metil-2-alkiltsiklogeksany)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 118, Nr 5,
pp. 942-945 (USSR)

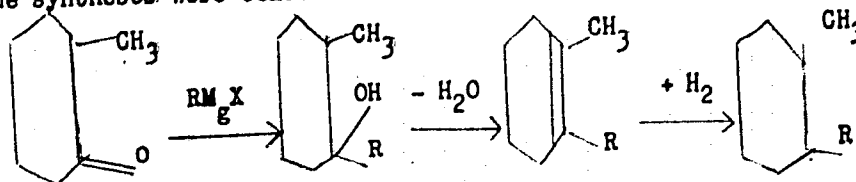
ABSTRACT: Data on dialkylcyclohexanes of this kind are rarely found in
publications (references 1 - 6). For this reason their in-
vestigation is interesting in spite of great experimental diffi-
culties. Certain surprising facts are found: the cis-isomer of
1,4,-di-isopropylcyclohexane boils at a lower temperature than
the trans-isomer (reference 5) though according to the rule of
Auvers Skit the contrary would have been expected. The reason
of this peculiar inversion of the boiling points remains unex-
plained and still waits for investigation. In order to find out
whether such exceptions are found in the series of other dial-
kylcyclohexane hydrocarbons, for example among the 1,2-dialkylcyclo-

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Stereoisomeric 1-Methyl-2-Alkylcyclohexanes

20-118-5-26/59

hexanes, the authors synthesized some 1-methyl-2-n-alkylcyclohexanes, and separated them according to the stereoisomers. The syntheses were conducted according to a uniform procedure:



with R representing n-propyl, n-hexane, and n-heptyl. According to the results of the fractional distillation all stereoisomers were obtained in a highly pure form. It was proved that the constants of all hydrocarbons thus produced agree with the Auvers-Skit rule. 1-methyl-2-n-hexylcyclohexane and 1-methyl-2-n-heptylcyclohexane have as yet not been mentioned in publications, whereas 1-methyl-2-n-propylcyclohexane was obtained previously as a mixture of stereoisomers (reference 7) only, and not separated further by the mentioned authors. In the experimental part 7 compounds of the respective group are specified, among them one chloride and two bromides, as well as the usual data, are given. There are 2 figures, 3 tables, and 11 references, 4 of which are Soviet.

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Stereoisomeric 1-Methyl-2-Alkylcyclohexanes

20-118-5-26/59

SUBMITTED: October 18, 1957.

Card 3/3

5(3)

AUTHORS:

Kazanskiy, B. A., Academician, SOV/20-122-6-19/49
Liberman, A. L., Tyun'kina, N. I., Kuznetsova, I. M.

TITLE:

On the Limited Applicability of the Auwers-Skita Rule in
Stereoisomeric Dialkyl Cyclanes (Ob ogranichennoy primenimosti
pravila Auversa-Skita k stereocizomernym dialkiltsiklanam)

PERIODICAL:

Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 6,
pp 1025-1028 (USSR)

ABSTRACT:

In recent years it was repeatedly noticed that the rule mentioned in the title cannot be applied to 1,3-dialkyl cyclopentanes and 1,3-dialkyl cyclohexanes. In these latter series the interrelation of the properties of cis-and trans-isomers is reversed. By the example of the stereoisomeric 1,3-dimethyl cyclopentanes and 1,3-dimethyl cyclohexanes this statement was confirmed by thermodynamic data as well as by synthesis. Recently the authors have observed such a case in which a peculiar deviation from the same rule took place (Ref 1) in the 1,4-dialkyl cyclohexane series. In this series the applicability of the rule under consideration was denied by nobody. It became evident that in the case of the

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On the Limited Applicability of the Auwers-Skita
Rule in Stereoisomeric Dialkyl Cyclanes

SOV/20-122-6-19/49

stereoisomeric 1,4-diisopropyl cyclohexanes the specific weight and the refractive index are higher, the molecular refraction, however, and the melting temperature of the isomer boiling at a lower temperature are lower; the spectroscopic data have shown that the latter isomer is a cis-form. So in this case not the trans- but the cis-form has a lower boiling-point - contrary to the rule mentioned. The observations so far collected make it possible to approach the problem of the relations between the configuration and the physical constants by a new method; the applicability of the rule mentioned is not only restricted by the arrangement of the side chains in the dialkyl-cyclane molecule, but also by the atomic number of carbon in the latter. The authors believe that the deviation described above is a regular phenomenon. The reflections mentioned make it possible to conclude that stereoisomeric 1,4-dialkyl cyclohexanes with 12 or a few more carbon atoms in the molecule must, similar to 1,4-diisopropyl cyclohexane, deviate from the rule under consideration. Thus the Auwers-Skita rule is only applicable

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On the Limited Applicability of the Auwers-Skita
Rule in Stereoisomeric Dialkyl Cyclanes

SOV/20-122-6-19/49

to the first members of the series of the 1,4-dialkyl cyclohexanes. By studying own data and those mentioned in publications on boiling temperatures of the stereoisomeric dialkyl cyclanes it can be concluded that the linear character of the dependence between the differences in boiling temperature of the stereoisomers and the atomic number of carbon in the molecule is not confined to the 1,4-dimethyl cyclohexane series, but applies also for the 1,2-dialkyl cyclopentanes (Table 2 and line A of Fig 1). In the stereoisomeric 1,2-dialkyl cyclanes discussed here the boiling temperatures of the trans-form increase more rapidly with increasing molecular weight than in the cis-forms. In these cases, however, the Auwers-Skita rule must have a somewhat wider range of applicability than for 1,4-dialkyl cyclohexanes. There are 1 figure, 3 tables, and 10 references, 5 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy, of the Academy of Sciences, USSR)

Card 3/4

KUZNETSOVA, I. M.

21(0), 21(0)

PHASE I BOOK EXPLORATORY

SOV. 35 7

Akademiya Nauk SSSR. Pfitchevskiy Institut
Issledovaniya po eksperimental'noy i teoreticheskoym fizike: [abornik]
(Studies on Experimental and Theoretical Physics: Collection of
Articles) Moscow: Izd-vo AN SSSR, 1959. 304 p. Errata slip
inserted. 2,300 copies printed.

Ed.: I. L. Fabelinskiy, Doctor of Physical and Mathematical Sci-
ences; Eds. of Publishing House: A. L. Chervyak and V. G. Berezant,
Tech. Ed.: Yu. V. Rylin; Commission for Publishing: S. M. Kuznetsov,
in Memory of Grigoriya Smolovich Landberg, Academician,
(Chairman), Academician; M. A. Leontovich, Academician;
P. A. Bazhulin, Doctor of Physical and Mathematical Sciences;
S. L. Mandel'shtam, Doctor of Physical and Mathematical Sciences;
I. L. Fabelinskiy, Doctor of Physical and Mathematical Sciences;
F. S. Landberg-Shal'nikov, Candidate of Physical and Math-
ematical Sciences; and G. P. Mokuzevich (Secretary), Candidate of
Physical and Mathematical Sciences.

PURPOSE: This book is intended for physicists and researchers
engaged in the study of electromagnetic radiations and their role
in investigating the structure and composition of materials.

CONTENTS: The collection contains 30 articles which review
investigations in spectroscopy, optics, molecular optics, seal-
conductor physics, nuclear physics, and other branches of
physics. The introductory chapter gives a brief historical profile
of G. S. Landberg, Professor and Head of the Department of
Optics of the Division of Physical and Mathematical Sciences,
variety, and reviews his work in Rayleigh scattering, combat
gases, spectral analysis of metals, etc. No personalities are
mentioned. References accompany each article.

Bazhulin, P. A., V. I. Kaluzhnyy, and M. N. Subbotnikiy, The
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5 (3)

AUTHORS:

Kazanskiy, B. A., Liberman, A. L.,
Loza, G. V., ~~Kuznetsova, I. M.~~,
Aleksanyan, V. T., Sterin, Kh. Ye.

SOV/62-59-6-19/36

TITLE:

Catalytic Cyclization of n-Octane With Formation of the Homologs of the Cyclopentane (Kataliticheskaya tsiklizatsiya n. oktana s obrazovaniyem gomologov tsiklopentana)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 6, pp 1071 - 1078 (USSR)

ABSTRACT:

By the action of a platinum catalyst n-octane forms the cyclic compounds: 1-methyl-2-ethylcyclopentane and n-propylcyclopentane. The present investigation dealt with the cyclization process and the spatial structure of the compounds produced by cyclization. For the purpose of this cyclization n-octane was for five hours passed through platinated coal with a passage rate of 0.2/hour at 310°. Two samples of the catalyst were used in parallel. In contrast to ramificated isomers cyclization of n-octane is fairly difficult. The yield on both catalysts was only 2.2 and 4.5%, respectively. The cyclic product could be enriched by distilling the catalysate. An investigation by means of the Raman spectrum showed that there was trans-1-methyl-2-

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Catalytic Cyclization of n-Octane With Formation of the Homologs of the Cyclopentane SOV/62-59-6-19/36

ethylcyclopentene in the lower boiling fraction, and n-propylcyclopentene in the residue. The cis-form of the first mentioned compound could not be discovered. Apart from the compounds mentioned, there were still small quantities of 4-methylheptane to be observed. Furthermore, a line (762 cm^{-1}) was discovered, which was assigned to the pentalane bicyclo-[0,3,3]-octane. This could, however, not yet be proved owing to the difficulties that arise in the production of the pentalane. Since the Raman spectra of the two cyclic compounds obtained are yet hardly known, the single compounds were synthesized in pure form and plotted separately. The synthesis was carried out according to a method which was worked out in the institute mentioned in the Association, with the only difference that instead of aluminum oxide, silica gel was used for isomerisation. In the experimental part the production of the different substances is described in detail. The properties of and the yield in catalysates, obtained from n-octane, are compiled in table 1. Table 2 gives the data concerning the substances produced by distillation. When analyzing the catalysates, distillates,

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Catalytic Cyclization of n-Octane With Formation of SOV/62-59-6-19/36
the Homologs of the Cyclopentane

and residues from n-octane it is shown that about the same portions are obtained for both compounds. There are 2 tables and 12 references, 10 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR i Komissiya po spektroskopii Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences, USSR, and Committee for Spectroscopy of the Academy of Sciences, USSR)

SUBMITTED: August 15, 1957

Card 3/3

KAZANSKIY, B.A., akademik; LIBERMAN, A.L.; KUZNETSOVA, I.M.;
ALEKSANYAN, V.T.; STERIN, Kh.Ye.; LOZA, G.V.

C₅-Dehydrocyclization of alkyl cyclopentanes into bicyclic hydrocarbons. Dokl.AN SSSR 133 no.2:364-366 J1 '60.
(MIRA 13:7)

1. Institut organicheskoy khimii im. M.D.Zelinskogo Akademii nauk SSSR i Komissiya po spektroskopii Akademii nauk SSSR.
(Cyclopentane) (Cyclization)

KAZANSKIY, B.A.; DOROGUCHINSKIY, A.Z.; ROZENKART, M.I.; TYUN'KINA, N.I.;
KUZNETSOVA, I.M.; LYUTER, A.V.; MITROFANOV, M.T.

Aromatization of mixtures of n. hexane with 2-methylpentane,
with 3-methylpentane or methylcyclopentane. Izv.AN SSSR.Otd.
khim.nauk no.7:1308-1309 JI '62. (MIRA 15:7)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Aromatization) (Paraffins)

S/048/62/026/010/009/019
B117/B186

AUTHORS: Zhizhin, G. N., Barinova, Z. B., Liberman, A. L.,
Kuznetsova, I. M., and Tyun'kina, N. I.

TITLE: Infrared absorption spectra of cis- and trans-isomers of
1-methyl-2-N-alkyl cyclohexanes

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya,
v. 26, no. 10, 1962, 1263-1266.

TEXT: Infrared absorption spectra of five pairs of cis- and trans-isomers
of the 1-methyl-2-alkyl cyclohexane series having alkyl radicals
(CH₃, C₂H₅, C₃H₇, C₆H₁₃, and C₇H₁₅) were examined and compared with the
corresponding Raman spectra (V. T. Aleksanyan, Kh. Ye. Sterin,
A. L. Liberman, I. M. Kuznetsov, N. I. Tyun'kina, B. A. Kazanskiy,
Sb.: Issledovaniya po eksperimental'noy i teoreticheskoy fizike.
Pamyati akademika G. S. Landsberga (Investigations in the field of
experimental and theoretical physics. In memory of Academician G. S.
Landsberg), p. 43, Izd. AN SSSR, M., 1959). The cis- and trans-isomers
had been synthesized previously (P. A. Bazhulin, S. A. Ukholin,

Infrared absorption spectra ...

S/048/62/026/010/009/013
B117/B186

ranges 965-968 and 1159-1163 cm^{-1} , respectively. Despite the identity of most of the frequencies, the characteristics of Raman and infrared absorption spectra very rarely coincide, so the two spectra complement one another. There are 1 figure and 1 table.

ASSOCIATION: Komissiya po spektroskopii Akademii nauk SSSR (Commission on Spectroscopy of the Academy of Sciences USSR).
Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences USSR)

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A003/A001

17.1151

Translation from: Referativnyy zhurnal. Khimiya, 1960, Vol. 33, No. 11, p. 357,

43533

AUTHOR: Kuznetsova, I.N.

TITLE: On the Nature of the Adhesion of Glass to Metal

PERIODICAL: Tr. Leningr. tekhnol. in-ta im. Lensoveta, 1959, No. 57, pp. 109-119

TEXT: The interaction of molten glass with metal is a complex physico-chemical process on the interface of the solid and the liquid phases. In this case mainly a chemical interaction of the metal alloy with the components of the glass takes place. With an increase in the degree of roughness of the metal surface the strength of adhesion of glass to the metal increases. At an equal degree of surface roughness, different metals (W, Mo) have a different strength of adhesion to glass which is explained by the different degree of chemical interaction of the oxides of these metals (in W and its oxides the chemical affinity with glass manifests itself in a higher degree than in Mo). Soldered joints of glass with Kovar alloy have a strength which is the higher, the higher

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A003/A001

On the Nature of the Adhesion of Glass to Metal

the Co concentration on the alloy surface. In the investigation of the structure of the joint by the roentgen-structural analysis the presence of a transitional layer in the joint of the glass with the metal was established and the composition of the transitional layer was approximately deciphered. ✓

From the author's summary

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

KUZNETSOVA, I. N., Cand Tech Sci -- "Study of ~~the~~ cohesion
in ~~glass~~ ^{crystals} ~~with~~ with tungsten, molybdenum, and FERNICO,"
[Len], 1961. (State Order of Lenin Opt Inst im S. I.
Vavilov) (KL, 8-61, 245)

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MATEKOVA, Ye.A.; ALAGOVA, Z.S.; KUZNETSOVA, I.N.

Electrode behavior of cation-exchange membranes in solutions of
certain electrolytes with two- and three- charge cations. Vest.
IGU 19 no.16:100-103 '64. (MIRA 17:11)

PENDIN, A.A.; ZAKHAR'YEVSKIY, M.S. [deceased]; KUZNETSOVA, I.H.

Conductance of solutions of a mixture of the two 1,1-electrolytes
with the identical ion. Vest, LGU 20 no, 22:115-121 '65.
(MIRA 18:12)

ABARBANEL', Ye.Ye.; KUZNETSOVA, I.P.

Dynamics of functional pulmonary changes following pneumonectomy
with various modes of anesthesia; roentgenological investigations.
Vop.onk. 5 no.10:416-425 '59. (MIRA 13:12)
(LUNGS--SURGERY)

NOVIKOV, A.N., prof.; KUZNETSOVA, I.P., nauchnyy sotrudnik

Advantages of the combined method of anesthesia in surgery
for pulmonary and mediastinal tumors. Vest.khir. 82 no.4:
95-98 Ap '59. (MIRA 12:6)

1. Iz Gosudarstvennogo nauchno-issledovatel'skogo onkologicheskogo instituta im. P.A.Gertsena (dir. - prof.A.N.Novikov)
Adres avtorov: Moskva, 21-y Votkinskiy proyezd, d.3, Gosudarstvennyy nauchno-issledovatel'skiy onkologicheskiy institut im. P.A.Gertsena.

(ANESTHESIA) (CHEST--SURGERY)

KUZNETSOVA, I. P.

Cand Med Sci - (diss) "Intra-tracheal ether-oxygen potentialized
/potentsirovanny/ narcosis in operations dealing with tumors of
the lung and mediastinum." Moscow, 1961. 18 pp; (Second Moscow
State Medical Inst imeni N. I. Pirogov); 250 copies; free; (KL,
5-61 sup, 203)

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 5,
p 123 (USSR) 15-57-5-6567

AUTHORS: Kosyreva, Z. S., Kuznetsova, I. P.

TITLE: Non-Alite Cement (Bezalitovyy tsement)

PERIODICAL: Sb. nauch. rabot po khimii i tekhnol. silikatov,
Moscow, Promstroyizdat, 1956, pp 70-76.

ABSTRACT: The possibility has been studied of obtaining a new kind of bonding non-alite cement by the method of P. P. Budnikov. The initial material for producing this cement is bauxite, with a high content of silica or disthene, and also gypsum and chalk. The gypsum was placed in the raw mixture as a mineralizer. The chemical composition of the bauxite and the disthene is given in the accompanying table (in percent). Experiments showed that non-alite cement may be produced from low-grade bauxite (containing about 24 percent Al_2O_3 and disthene by roasting a mixture of bauxite, chalk, and gypsum or a mixture of disthene, chalk, and gypsum

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15-57-5-6567

Non-Alite Cement (Cont.)

at temperatures lower than that used for roasting portland cement. The optimum proportion of gypsum is 20 percent of the weight of the dry mix. The optimum temperature for roasting is 1100° to 1200°. The non-alite cement thus produced has satisfactory strength and is sufficiently resistant during year-long contact with active solutions.

Material	SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	CaO	MgO	MnO	SO ₃	Others	Total
Disthene	49.76	40.42	4.18	0.60	tr	none	tr	2.94	99.64
Bauxite	24.14	33.00	23.35	2.79	2.00	0.01	tr	4.79	100.08

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S. P. Sh.

KUZNETSOVA, I. P.

USSR/Chemical Technology - Chemical Products and Their Application. Silicates.
Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 62362

Author: Budnikov, P. P., Kosyreva, Z. S., Kuznetsova, I. P.

Institution: None

Title: Production of Alite-Free Cement and Study of Its Properties

Original

Periodical: Tr. Mosk. khim.-tekhmol. in-ta, 1956, No 21, 155-161

Abstract: Investigated was the possibility of producing good quality cement from low grade bauxites characterized by increased content of silica and Fe oxide. The experiments showed that alite-free cement can be produced from low grade bauxites by calcining the mixture of raw materials, consisting of chalk, bauxite and gypsum, at temperatures lower than those that are required in the case of Portland cement. Optimal calcination temperatures of alite-free cement containing added gypsum is 1,200°. It is advantageous to add as mineralizer 30% gypsum and 1% coal. The possibility has been demonstrated of

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USSR/Chemical Technology - Chemical Products and Their Application. Silicates.
Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 52362

Abstract: obtaining hydraulic cement consisting essentially of dicalcium silicate, monocalcium aluminate and tetracalcium aluminoferrite, having satisfactory binding properties.

Card 2/2

5(1, 2)
AUTHORS:Budnikov, P. P.; Kuznetsova, I. P.

SOV/153-58-5-11/28

TITLE:

Multipurpose Utilization of Aluminum Silicate Containing Raw Materials (Kompleksnoya ispol'zovaniye alyumosilikatnogo syr'ya)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 5, pp 65-69 (USSR)

ABSTRACT:

The problem mentioned in the title is of national-economic interest. A process of this type was devised and introduced at the Volkhovskiy alyuminiyevyy zavod (Volkhov Aluminum Works) (Ref 1). Nepheline raw material is processed into alumina, soda products and portland cement. In the Polish People's Republic a works department for the production of alite cement from alumina and marl with an increased Al_2O_3 content was built at Groszowice on the basis of the investigations carried out by Gzhimek (Ref 2). The authors of this paper wanted to devise a process for the simultaneous production of rapidly hardening cement and alumina on the basis of loam. They succeeded by a double burning. Loam with chalk served as raw material. The mixture was burned until $5CaO \cdot 3Al_2O_3$ and $2CaO \cdot SiO_2$ were formed.

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The latter compound was to promote the decomposition of the

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Multipurpose Utilization of Aluminum Silicate Containing Raw Materials

burned product (Ref 3) on its cooling and transformation into a γ modification. The fine powder produced in this way was leached out by a soda solution and was filtered. The best burning conditions were temperatures at about 1400° , remaining at a temperature for 30 minutes, slow cooling for 10 minutes down to 1200° . The best leaching out conditions were at temperatures of 70° , a ratio between the solid and the liquid phase in the solution of 1 : 5, and a violent stirring for 60 minutes. Aluminum hydroxide was precipitated out from the filtrate containing sodium aluminates by means of CO_2 . After the removal of sodium aluminate the precipitate (mainly consisting of potassium orthosilicate and calcium carbonate) was burned to produce cement with increased alite content therefrom. The clinker produced under those conditions has a fine crystalline structure; it contains 65-75% alite, 15-20% belite, and 8-12% tricalcium aluminate. Figure 4 shows the chemical analysis of this clinker in per cent. The temperature effect upon the tolerable amount of free limestone in the clinker (which is between 1450 and 1500°) as well as the

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Multipurpose Utilization of Aluminum Silicate Containing Raw Materials

physico-mechanical properties of the cements produced therefrom are given in table 5. It was petrographically proved that the sintering process of the clinker is completed already at 1450°. The best strength indices during the beginning hardening are displayed by a cement from clinker burned at 1450° (Table 7). Figure 1 shows a microphotograph (400 times enlarged) of that cement. Figure 2 gives the curves of the dehydration of the alite cement, hydrated for 28 days. There are 2 figures, 7 tables, and 6 Soviet references.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskii institut imeni D. I. Mendeleeva (Moscow Chemo-Technological Institute imeni D. I. Mendeleev)

SUBMITTED: October 25, 1957

Card 3/3

BUDNIKOV, P.P.; KUZNETSOVA, I.P.

Production of quick-setting cement and alumina from kyanite and clays.
Trudy MKHTI no. 27:266-271 '59. (MIRA 15:6)
(Cement) (Alumina)

BUDNIKOV, P.P., akademik; KUZNETSOVA, I.P., inzh.

Effect of calcium sulfate on the process of mineral formation
in portland cement clinker. Nauch. soob. NIISementa no.12:1-7
'61. (MIRA 15:7)

1. Moskovskiy Ordena Lenina khimiko-tehnologicheskii institut
im. Mendeleeva. 2. AN USSR (for Budnikov).
(Cement clinkers) (Calcium sulfate)

BUDNIKOV, P.P.; KUZNETSOVA, I.P.

Role of calcium sulfate in obtaining quick-hardening belite-
alumina cement based on unconditioned bauxite. Trudy MKHTI
no.36:129-134 '61. (MIRA 15:7)
(Cement—Testing) (Calcium sulfate)
(Bauxite)

BUDNIKOV, P.P.; KUZNETSOVA, I.P.

Effect of gypsum on mineral formation in a cement clinker,
Zhur.prikl.khim. 35 no.5:939-943 My '62. (MIRA 15:5)
(Gypsum) (Minerals) (Cement)

S/137/61/000/011/080/123
A060/A101

AUTHORS: Mikhalev, M.S., Kuznetsova, I.R.

TITLE: Quantitative dependence of the influence of the pearlite component upon the yield strength of low-carbon steel

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 11, 1961, 46-47, abstract 11Zh276 ("Byul. nauchno-tekhn. inform. Ural'skiy n.-1. in-t chern. metallov", 1960, No 8, 68-73)

TEXT: An investigation was carried out upon the increase in strength under the influence of the pearlite component in low-carbon steel from a single heat, containing various C contents (0.043, 0.085, 0.16, and 0.24%). The steel was smelted in an induction furnace. The different C contents are obtained by subsequent carbonization of the molten steel in the furnace. 16-kg ingots were subjected to diffusion annealing at 1100°C for 20 hours and were forged into 25 x 25 mm bars, which were normalized from the temperature 950°C. In order to obtain various amounts of pearlite, shapes of 12 x 12 x 70 mm were cut out of the rods, heated up to 920 - 940°C and cooled down at various rates

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Quantitative dependence.....

S/137/61/000/011/080/123
A060/A101

in quiet air environment, in an air stream, in oil, and with precooling in water with subsequent cooling in oil. The physical yield-strength was determined by stretching Gagarin-type specimens. It was found that in low-carbon steel the effect produced upon the σ_s by increasing the pearlite component, obtained both on account of increasing the C content in the steel and on account of raising the cooling rate of the steel, does not depend upon the degree of the strengthened state of the ferrite base. This conclusion can be apparently extended also to the variation of σ_s under the influence of pearlitic component in alloying low-carbon steel. As the quantity of the pearlite in the structure increases by 1%, the value of the σ_s of the steel under investigation is raised by 0.24 kg/mm². There are 10 references.

L. Gordiyenko

[Abstracter's note: Complete translation]

Card 2/2

S/133/62/000/007/013/014
A054/A127

AUTHORS: Mikhalev, M.S.; Kuznetsova, I.R.

TITLE: At the Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov
(Ural Scientific Research Institute of Ferrous Metals)

PERIODICAL: Stal', no. 7, 1962, 639

TEXT: Two new steel grades were developed for use in building structures, the 15Г2СФ (15G2SF) grade with a pearlitic, and the 15ХГ2СФМ (15KhG2SFM) grade with a bainitic structure. The first grade contains 0.12 - 0.18% C, 1.5 - 1.8% Mn, 0.40 - 0.70% Si and 0.04 - 0.09% V; the second contains also 0.40 - 0.70% Cr and 0.20 - 0.40% Mo. The mechanical properties of the new steel grades are the following:

	σ_B kg/mm ²	σ_s kg/mm ²	σ_{10} %	a _k kgm/cm ² at +20°, at -40°	
15G2SF	55	40	16	6	3
15KhG2SFM	80	60	12	5	3

The values of the first grade refer to the hot-rolled condition, those of the sec-

Card 1/2

At the Ural'skiy.....

S/133/62/000/007/013/014
A054/A127

ond to the hot-rolled or normalized condition. Both grades have to pass the bending test at an angle of 180° . Substitution of the grades for the $(\tau, 3)$ (St.3) grade makes possible a 40 - 45% reduction of the weight of building structures.

Card 2/2

KUZNETSOVA, I.V.

Condition of vascular nerve elements of the tunica vaginalis of
the testis in hydrocele. Zdravookhranenie 4 no.5:49-52 S-0 '61.
(MIRA 14:11)

1. Iz kafedry normal'noy anatomii (zav. ~~prof~~ B.Z.Perlin)
Kishinevskogo meditsinskogo instituta.
(HYDROCELE) (TESTICLE)

KUZNETSOVA, I.V.

State of the vascular and nerve apparatus of the tunica
albuginea testis in varicocele. Zdravookhranenie 6 no.3:
33-37 My-Je'63 (MIRA 16:11)

1. Iz kafedry normal'noy anatomii (zav. - dotsent B.Z. Perlin)
Kishinevskogo Meditsinskogo Instituta.

*

KUZNETSOVA, I. V., Cand Biol Sci -- (diss) "Significance of microdepressions in the formation of soil cover in the northern part of the Yergeny and the utilization of artificial micro-relief in the battle against drought." Moscow, 1960. 19 pp; (Moscow Order of Lenin and Order of Labor Red Banner State Univ im M. V. Lomonosov, Biology-Soils Faculty); 120 copies; price not given; (KL, 22-60, 134)

CA

KUZNETSOVA, K. A.

16

Oxidizing reactions of wines. A. V. Kuznetsov and K. A. Kuznetsova. *Vinodelie i Vinogradarstvo S.S.S.R.* 11, No. 9:10-12(1961).—A discussion of work carried out over the past 15 years on the importance of oxidizing reactions on the maturing of wines. The oxidation-reduction potential and the content of dissolved O_2 are the important factors to be studied. The authors describe their methods for characterizing wine as an oxidizing-reducing system. To obtain

the general oxidizability of wine, the wine is treated with a weak soln. of iodine at pH 3.8. Details are given for this analysis, which measures the amt. of easily oxidizable substances, like polyphenols, sulphurous acid, ascorbic acid, and essential oils. The maximal oxidizability of wines is estd. by treating the wine with permanganate, which gives an estimate of the more difficultly oxidizable substances, like sugars, alc., and various acids. Methods are also described for detg. the general reducibility of wines (photometric detn. using indigocarmin dye), for the detn. of "tannins" (including polyphenols) oxidizable by gaseous O_2 , and for a general balance of oxidation-reduction effects.

S. Gottlieb

1957

PETROCHENKO, P.; KUZNETSOVA, K.

Vital problems of scientific labor organization. Sots. trud.8 no. 6:
52-60 Je '63. (MIRA 16:9)
(Labor and laboring classes)

KUZNETSOVA, K.A.; PUZYREV, P.F.

Experiment in using radioactive preventive control in boring
directed boreholes. Podzem.gaz.ugl. no.3:58-60 '59.
(MIRA 12:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy i proyektnyy
institut podzemnoy gasifikatsii ugley.
(Boring) (Coal gasification, Underground)
(Gamma rays--Industrial applications)

KUZNETSOVA, K. A.

PHASE I BOOK EXPLOITATION SOV/5592

Vsesoyuznoye soveshchaniye po vnedreniyu radioaktivnykh izotopov i yadernykh izlucheniya v narodnom khozyaystve SSSR. Riga, 1960.

Radioaktivnyye izotopy i yadernyye izlucheniya v narodnom khozyaystve SSSR; trudy Vsesoyuznogo soveshchaniya 12 - 16 aprelya 1960 g. G. Riga, v 4 tomakh. t. 4: Poiski, razvedka i razrabotka poleznykh iskopyemykh (Radioactive Isotopes and Nuclear Radiation in the National Economy of the USSR; Transactions on the Symposium Held in Riga, April 12 - 16, 1960, in 4 volumes. v. 4: Prospecting, Surveying, and Mining of Mineral Deposits) Moscow, Gostoptekhizdat, 1961. 284 p. 3,640 copies printed.

Sponsoring Agency: Gosudarstvennyy nauchno-tekhnicheskiy komitet Soveta Ministrov SSSR. Gosudarstvennyy komitet Soveta Ministrov SSSR po ispol'zovaniyu atomnoy energii

Eds. (Title page): N. A. Petrov, L. I. Petrenko, and P. S. Savitskiy;
ed. of this volume: M. A. Speranskiy; Scientific ed.: M. A. Speranskiy; Executive Eds.: N. N. Kuz'mina and A. G. Ionel';

Card 1/11

Radioactive Isotopes and Nuclear (Cont.)

107
SOV/5592

Tech. Ed.: A. S. Polosina.

PURPOSE : The book is intended for engineers and technicians dealing with the problems involved in the application of radioactive isotopes and nuclear radiation.

COVERAGE: This collection of 39 articles is Vol. 4 of the Transactions of the All-Union Conference of the Introduction of Radioactive Isotopes and Nuclear Reactions in the National Economy of the USSR. The Conference was called by the Gosudarstvennyy nauchno-tekhnicheskiy komitet Sovet Ministrov SSSR (State Scientific-Technical Committee of the Council of Ministers of the USSR), Academy of Sciences USSR, Gosplan SSSR (State Planning Committee of the Council of Ministers of the USSR), Gosudarstvennyy komitet Sveta Ministrov SSSR po avtomatizatsii i mashinostroyeniyu (State Committee of the Council of Ministers of the USSR for Automation and Machine Building), and the Council of Ministers of the Latvian SSR. The reports summarized in this publication deal with the advantages, prospects, and

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Radioactive Isotopes and Nuclear (Cont.)

SOV/5592

development of radioactive methods used in prospecting, surveying, and mining of ores. Individual reports present the results of the latest scientific research on the development and improvement of the theory, methodology, and technology of radiometric investigations. Application of radioactive methods in the field of engineering geology, hydrology, and the control of ore enrichment processes is analyzed. No personalities are mentioned. There are no references.

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Bilyanova, Ye. M., K. A. Kuznetsova, I. D. Myaskevskaya, P. F. Fuzyrev, and D. A. Sokolov. Preventive Control of the Drilling Tool Escape From a Coal Seam While Drilling Inclined Boreholes in Lean Seams		260
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Card 10/11

KUZNETSOVA, K.A.

Radioactivity ~~warning control~~ in the boring of directional boreholes
with the TB-3 turbodrill. Trudy VNIIPodzemgaza no.12:126-128 '64.
(MIRA 18:9)

1. Laboratoriya kontrolya i avtomatiki Vsesoyuznogo nauchno-issledo-
vatel'skogo instituta podzemnoy gazifikatsii ugley.

KUZNETSOVA, K.A., inzhener.

Modulus of elasticity of leather. Leg.prom. [16] no.11:04 N '56.
(MIRA 10:1)
(Leather industry--Standards)

~~KUZNETSOVA, K.A., insh.~~

"Consumption of molasses for sole leather filling." Leg. prom. 18
no.4:42 Ap '58. (MIRA 11:4)
(Molasses) (Leather industry--Equipment and supplies)

S/081/62/000/012/056/063
B158/B101

AUTHORS: Yevdokimov, F. K., Kavos, Kh. V., Kuznetsova, K. B.

TITLE: Paint and varnish coats for electric measuring instruments used in various climatic conditions

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 12, 1962, 607-608, abstract 12P239 (Lakokrasochn. materialy i ikh primeneniye, no. 6, 1960, 42-45)

TEXT: An investigation was made into the dependence of the wearability of various paint and varnish coats (PC) for electric measuring instruments on the effect on them of the atmosphere, preparation of the bare metal surface, the composition of the primer and the colour of the PC itself. The surface of the samples of steel, brass, Silumin and aluminum was cleaned by sandblasting before painting, and in addition to this the Silumin samples were treated with bakelite varnish and the aluminum samples were anodized. The samples were painted by spraying; the PC thickness was 50-55 μ . Tests on the PC were carried out in a hydrostat at 20-50 $^{\circ}$ C and at an atmospheric relative humidity of \sim 100%; in a solar
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Paint and varnish coats for electric ... S/081/62/000/012/056/063
B158/B101

radiation chamber at an ultraviolet intensity of 0.06-0.08 cal/cm²/min

and at 40-45°C; under natural conditions on stands in Leningrad and Batumi and under conditions simulating a tropical climate - in a tropical hothouse. The PC wearability was evaluated visually by the methods of GIPI-4 and VNIIEP. It was found that the best primers with different surface preparation and different topcoat enamels are AF-10c (AG-10s), followed by ФЛ-03К (FL-OZK) and ФЛ-03Ж (FL-OZZh) primers. Of the topcoat enamels, those developed and recommended for use are: for instruments used in enclosed heatable spaces at ≤ 35°C and a relative

humidity of ≤ 80% (at 30°C) - alkyd No.200 black and grey, 2086† (2086f), A-14† (A-14f), A-12† (A-12f), ЭКР-7 (EKR-7), ПФ-68 (PF-68), ПФ-64 (PF-64), 1512/1, 1512/2, melamine alkyd No.873, hammertones 5 grey and light grey, ФЛ-76 (FL-76), estoglaze Т-4ММ (T-4MM), ЭП-51 (EP-51), ХСЭ-25 (KhSE-25), ПХВ-715 (PKhV-715), Moire 250, No.25 and No.23; for instruments used in enclosed not heatable spaces at a temperature of -30°C to +40°C and a

relative humidity of ≤ 90% (at 30°C) - hammertones, PKhV-715, KhSE-25, Moire 250, grey tropical Moire, FL-76, 2086f, no.200, 1512/1, 1512/2, .

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Paint and varnish coats for electric ... S/081/62/000/012/056/063
B158/B101

AK-81 (AS-81) white, AK-71 (AK-71) white; for instruments used in the open at a temperature of -50°C to +60°C and a relative humidity of 95% (at 35°C) - PKhV-715, KhSE-25 and AS-81 white; for instruments used in enclosed spaces, under awnings, and in the open under tropical conditions at 0-45°C, a relative humidity of <95% (at 35°C) and subject to the periodic action of fungal mould - hammertones, PKhV-715, KhSE-25, Moire 250, 1512/1, 1512/2, and AS-81 white. [Abstracter's note: Complete translation.]

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Card 3/3

5.3400,5.1320

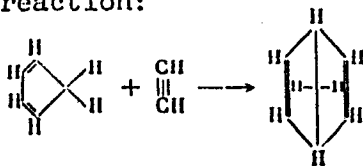
77659
SOV/80-33-2-34/52

AUTHORS: Belikova, N. A., Vol'fson, L. G., Kuznetsova, K. B.,
Mel'nikov, N. N., Person, A. I., Plate, A. F.,
Pryanishnikova, M. A.

TITLE: Concerning the Isolation of Aldrin and Dieldrin

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 2,
pp 454-463 (USSR)

ABSTRACT: The article describes the synthesis of aldrin
and dieldrin based on information gathered from
foreign patent literature and on the authors' studies
of the basic reaction of hexachlorocyclopentadiene with
bicyclo-(2,2,1)-heptadiene-2,5. The latter was
synthesized in a continuous flow installation, accord-
ing to the reaction:

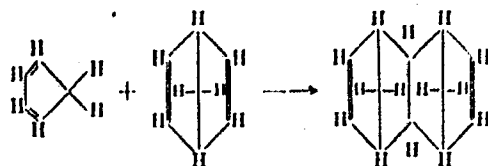


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Concerning the Isolation of
Aldrin and Dieldrin

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SOV/80-33-2-34/52

The optimum conditions for the above condensation of cyclopentadiene with acetylene were: molar ratio 1:1.1 to 1:2; temperature 345° C; pressure 20 atm. The yield of bicycloheptadiene under those conditions was about 48% and dropped sharply with rising temperature. The spent gas contained 95-97% acetylene and could be recycled. Investigation of the thermal stability showed that bicyclo-(2,2,1)-heptadiene-2,5 remained unchanged at 290° C, but under the conditions of the reaction it reacted with one cyclopentadiene molecule:



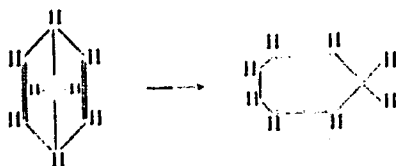
At 340° C and above, bicycloheptadiene was isomerized into cycloheptatriene; at 390° and 8 atm the extent of isomerization reached 20%, and a small amount of

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Concerning the Isolation of
Aldrin and Dieldrin

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SOV/80-33-2-34/52

toluene (1%) was also formed.

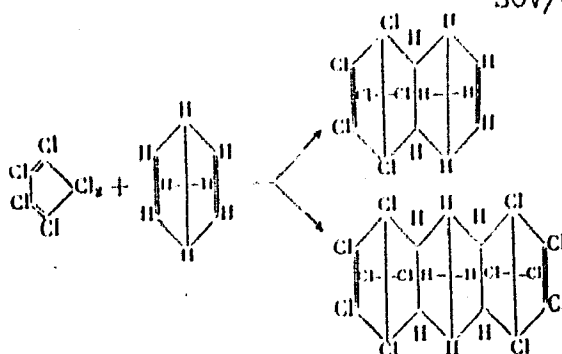


The conditions governing the direction of the reaction of bicycloheptadiene with hexachlorocyclopentadiene in the synthesis of aldrin were investigated.

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Concerning the Isolation of Aldrin and Dieldrin

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SOV/80-33-2-34/52



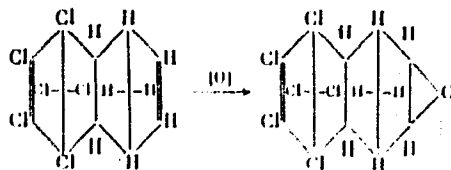
It was found that the optimum conditions were as follows: molar ratio of the above reactants 2.5:1; time of reaction 18 hr; temperature 90-110° C. The complete synthesis of aldrin consisted of the following operations: (1) condensation of acetylene with cyclopentadiene; (2) distillation of the reaction products and separation of bicycloheptadiene; (3)

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Concerning the Isolation of
Aldrin and Dieldrin

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SOV/80-33-2-34/52

condensation of bicycloheptadiene with hexachloro-
cyclopentadiene; (4) steam distillation of the
excess bicycloheptadiene; (5) separation of aldrin from
water; (6) separation of bicycloheptadiene from water
and returning it to the condensation stage (1).
The steam-distilled bicycloheptadiene was 95% re-
covered and could be used again without any further
purification. Dieldrin was obtained on oxidation
of aldrin by means of 3-fold excess of 27% hydrogen
peroxide in 80% acetic acid at 100° C. Dieldrin
thus obtained had mp 100-130° C. The content of
dieldrin in the technical product was about 80%



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Concerning the Isolation of
Aldrin and Dieldrin

77659
SOV/80-33-2-34/52

Some experimental work was done by G. A. Tarasova at the Institute of Organic Chemistry, Academy of Sciences, USSR. Determination of combustion temperatures was made by M. P. Kozina and S. M. Shtekher at the Luginin Laboratory of Thermochemistry of Lomonosov Moscow State University. Cyclopentatriene analysis was made by M. Ye. Vol'pin at the Institute of Element-Organic Compounds, Academy of Sciences, USSR. There are 4 figures; 1 table; and 23 references, 9 U.S., 2 U.K., 1 Canadian, 1 Indian, 2 Swiss, 1 East German, 7 Soviet. The 5 most recent U.S. and U.K. references are: Handbook of Aldrin, Dieldrin, and Endrin Formulations, Shell Chemical Corp. (1954); J. Hine, J. A. Brown, L. H. Zalkow, W. E. Gardner, M. Hine, J. Am. Chem. Soc., 77, 3, 594 (1955); R. E. Lidov, U. S. Pat. 2635977, 21.IV.1953; B. Soloway, U.S. Pat. 2676131, 2.V.1954; R. E. Lidov, S. B. Soloway, Brit. Pat. 692547 (1954).

SUBMITTED:
Card 6/6

June 25, 1959

S/276/63/000/0G2/029/052
A052/A126

AUTHORS: Okhrimenko, I.S., Yakovlev, A.D., and Kuznetsova, K.B.

TITLE: Paint compositions and coatings on chlorosulfurized polyethylene base

PERIODICAL: Referativnyy zhurnal, Tekhnologiya mashinostroyeniya, no. 2, 1963, 107, abstract 2B574 (Lakokrasoch. materialy i ikh primeneniye, no. 4, 1962, 25-30)

TEXT: The results of investigations of paint compositions and coatings on chlorosulfurized polyethylene base (containing 26.5-27.6% Cl and 1.7-2.5% S) are reported. It is shown that on chlorosulfurized polyethylene base paint compositions of solution and organodispersion types can be produced. It is advisable to use chlorosulfurized polyethylene in paint compositions in combination with other resins, whereby glycerin ester of colophony (it can be added to up to 50% of film-former weight) has a good modifying effect. In view of the acidity of chlorosulfurized polyethylene it is recommended to add to compositions based on it inert pigments (titanium dioxide and others); as structural additions it is advisable to use diphe-

Card 1/2

Paint compositions and coatings...

S/276/63/000/002/029/052

A052/A126

nylguanidine and some metal oxides in the presence of which the film-former passes into an insoluble state without heating. It is pointed out that coatings on chlorosulfurized polyethylene base have a low steam permeability, corrosion resistance in water, acids (nitric, sulfuric) and other chemical substances, as well as when used in the atmosphere and under conditions of natural and artificial ageing. On account of their properties these coatings can be recommended for protecting the equipment of chemical and other industries.

(Abstracter's note: Complete translation.)

Card 2/2

DANILOVA, L.I.; inzh.; OSIPOVA, V.P.; kand.khim.nauk; POKHLEBALOVA, L.P.;
-KUZNETSOVA, K.D.

Clarification of liquid perfumes with the aid of the SGL separator.
Masl.-zhir.prom. 27 no.3:37-39 Mr '61. (MIRA 14:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskikh i natural'nykh dushistykh veshchestv (for Danilova,Osipova).
2. Fabrika "Novaya Zarya" (for Pokhlebalova). 3. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskogo mashinostroyeniya (for Kuznetsova).
(Perfumes) (Separators (Machines))

S/137/62/000/002/036/14
A006/A101

AUTHORS: Koval'skiy, A. Ye., Pivovarov, L. Kh., Kuznetsova, K. F.

TITLE: The effect of technological factors of manufacturing sintered carbides on changes in tungsten carbide radiographs

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 2, 1962, 28, abstract 20224 ("Sb. tr. Vses. n.-i. in-t tverdykh splavov", 1960, no. 2, 105-108)

TEXT: On the surface of WC-Co sintered carbide specimens the authors revealed abrupt changes in the relative intensity of a series of X-ray diffraction lines of WC; a particularly high increase is observed in the intensity ratio of line pairs (0002)/(110) and (001)/(101). The effect of changes is sensitive to heterogeneity of specimens in the same grade of carbide and under the same sintering conditions. It is practically constant at changes in the Co-content from 6 to 15%; a further increase of the Co content causes a sharp rise of the effect. The effect is a function on the sintering temperature [for BK 6 (VK6) and BK 15 (VK15), it increases with temperature, and drops for BK 20 (VK20)]. This effect depends also on the duration of grinding the initial mixtures, the temperature of reduction and carburizing, and does not depend on

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The effect of technological factors ...

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A006/A101

additional annealing which entails decomposition of Co of the solid solution. It is stressed that these changes in the relative intensity become rather noticeable only on the specimen surface; it is 0.5 for VK6 and 1.7 for VK20. After removal of the surface layer to 0.1 mm depth or etching off the Co phase, the (002)/(110) ratio drops to a magnitude which corresponds to pure WC.

I. Brokhin

[Abstracter's note: Complete translation]

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KUZNETSOVA, K.F.

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S/126/60/010/02/005/020

E111/E352

18.1230 18.8100

AUTHORS: Funke, V.F., Spurshakov, A.N., Yudkovskiy, S.I.,
Kuznetsova, K.F., Shulepov, V.I. and Yurkevich, Yu.N.TITLE: Electrical Resistance¹ and Structure of WC-Co Alloys¹PERIODICAL: Fizika metallov i metallovedeniye, 1960. Vol. 10,
No. 2, pp 207 - 215

TEXT: Two-phase WC-Co alloys consist of hard, brittle tungsten-carbide grains and a cobalt-base plastic phase. Some workers consider that a continuous carbide "skeleton" exists (Ref. 1) and others (Ref. 2) that there is a continuous film of cobalt in alloys with over 2% weight Co. In the present work measurements of electrical conductivity were made to settle this point. Two-phase alloys with 0-100% were prepared by powder-metallurgy methods. Specimens were heated at 1 200 °C for 1.5 hours in hydrogen. Some were then cooled at 80 °C/hour to room temperature; others were quenched in oil at 20 °C. Fig. 1 shows specific conductivity as a function of cobalt concentration for quenched (Curve 1) and annealed (Curve 2) specimens. Plots of resistivity against temperature are shown in Fig. 2. X-ray examination was carried out (with type RKD and Card 1/3

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E111/E352

Electrical Resistance and Structure of WC-Co Alloys

URS-50 cameras) with cobalt radiation to find the alloy structure and the cobalt lattice dimension (the latter is shown as a function of WC weight % in Fig. 3). Another series of alloys with the same cobalt content (6% by weight) but different tungsten-carbide grain size (about 0.8 - 2.2 μ) was prepared and tested. Fig. 4 shows resistivity for annealed alloys as functions of coercive force (Curve 1) and of grain size (Curve 2): the relations obtained confirmed the conclusions from the other work, that there is a continuous layer of cobalt in alloys of this composition. The work showed that 0.5% Co is sufficient to break continuity of contact between carbide grains. No solubility of cobalt in carbide up to the eutectic melting point; eutectic transformation occurred at 1250 °C; solubility of carbide in cobalt was 12-13 weight % at 1200 °C. The reported (Ref. 11) loss in plasticity of the cobalt layer the authors attribute to lattice distortion at the cobalt/tungsten-carbide boundary surface.

There are 4 figures, 2 tables and 11 references: 6 Soviet, 4 English and 1 German.
Card 2/3

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E111/E352

Electrical Resistance and Structure of WC-Co Alloys

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut
tverdykh splavov
(All-Union Cermets Scientific-Research Institute)

SUBMITTED: January 6, 1960

X

Card 3/3

FUNKE, V.F.; YUDKOVSKIY, S.I.; Prinimali uchastiye: KUZNETSOVA, K.F.; CHERENKOVA,
V.A.

High temperature oxidation of alloys formed by titanium boride with iron
group metals. Zhur.fiz.khim. 37 no.7:1557-1562 J1 '63. (MIRA 17:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh splavov.

ACCESSION NR: AP4029208

S/0226/64/000/002/0057/0060

AUTHOR: Tumanov, V. I.; Funke, V. F.; Trukhanova, Z. S.; Novikova, T. A.;
Kuznetsova, K. F.

TITLE: Heat treatment of tungsten carbide-cobalt alloys

SOURCE: Poroshkovaya metallurgiya, no. 2, 1964, 57-60

TOPIC TAGS: tungsten carbide, cobalt, heat treatment, carbon, tungsten, tungsten
carbide based alloy, cobalt containing alloy, binding phase

ABSTRACT: In this paper the authors present the results of studies of the effect of
the cooling rate on the composition of the binding phase and the bending strength of
tungsten carbide-cobalt alloys. The effect of the cobalt content is plotted in
graphs. The authors draw the following conclusions: 1) the composition of the
binding phase does not, in practice, depend on the cooling rate within the investi-
gated temperature range, and 2) in the examination of the dependence of the bending
strength on the composition of tungsten carbide-cobalt alloys, it is also necessary
to consider the change of thermal stresses. Orig. art. has: 3 figures.

ASSOCIATION: Vsesoyuznyy nauchno-issleovatel'skiy institut tverdykh spalvov
(All-Union Scientific Research Institute of Solid Alloys)

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Sub: 13 JAN 63

KUZNETSOVA, K. F.

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L 44225-65 EWP(e)/EWT(m)/EWP(w)/EPF(e)/EPF(n)-2/EWA(d)/T/EWP(t)/EWP(x)/
EWP(z)/EWP(h) PI-4/Eu-4 JJP(c) JD/JQ/HR

ACCESSION NR: AP3010402

UR/0226/65/000/004/0035/0043

44
42
B

AUTHOR: Kreymer, G. S.; Turanov, V. I.; Alekseyeva, M. A.; Pavlova, Z. I.;
Bashin, N. I.; Kuznetsova, K. F.

TITLE: Effect of the addition of tantalum carbide on the properties of hard
~~powdered-metal~~ WC-TiC-Co alloys 27 27

SOURCE: Poroshkovaya metallurgiya, no. 4, 1965, 35-43

TOPIC TAGS: hard alloy, tantalum carbide, cementing phase, titanium carbide,
tungsten carbide, cobalt, bending strength, carbide crystals, brittle fracture,
alloy sintering, scaling resistance

ABSTRACT: While the addition of some quantity of tantalum carbide to the hard
alloys WC-TiC-Co is a widespread practice, its effect on the properties of these
alloys is disputed by different investigators. To clarify this question, the
authors carried out a series of tests with specimens of these alloys containing
different proportions of TaC. On the basis of metallographic analysis of the
melts, investigations of bending strength of specimens as a function of the major

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content of TaC in the solid-solution phase of (Ti, Ta, W)C, hardness tests, impact toughness tests, and other tests, the positive value of the addition of tantalum carbide to WC-TiC-Co alloys is definitely established. Such an addition increases the bending strength (at moderate temperatures), hardness (at high temperatures), heat resistance, and scaling resistance of these alloys. It is shown that in the region of brittle fracture of WC-TiC-TaC-Co alloys the relation of bending strength to the volumetric content of cobalt is satisfactorily described by the equation $\sigma^2 = AZC$, where σ is the breaking point, Z is the elastic modulus, C is the cobalt content, and A is a constant. Observations under the microscope confirm that the fracturing crack spreads through the cementing phase (and phase boundaries), bypassing the carbide grains. Further, it is shown that the introduction of tantalum carbide into WC-TiC-Co alloys markedly alters the composition of the cementing phase, which in itself may be a factor in the increase in its strength and the strength of the alloys. The latter may also be enhanced by the improvement in the wettability of carbide crystals by the molten cementing phase during the sintering process. Orig. art. has: 8 figures, 7 tables.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh splavov
 (All-Union Scientific Research Institute of Hard Alloys)

Card 2/2

... synthesis of phosphoric acid ... the

KREYMER, G.S.; TUMANOV, V.I.; ALEKSEYEVA, N.A.; PAVLOVA, Z.I.; BASKIN, M.L.;
KUZNETSOVA, K.F.

Properties of ceramic metal hard alloys of WC-TiC-Co with additions
of tantalum carbide. Porosh. met. 5 no.4:35-43 '65.

(MIRA 18:5)

L. Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh
splavov.

USSR/Cultivated Plants - Commercial. Oil-bearing. Sugar-bearing. H.

Abn Jour : Ref Zhur - Biol., No 10, 1958, 44203

Author : Vasil'yev, A.A., ~~Guznetsov, K.G.~~ Shver, Ye.V.

Inst : -

Title : On the Effect of Preparation 2, 4-D on Cotton.

Orig Pub : S. Kh. Uzbekistana, 1957, No 4, 25-27.

Abstract : No abstract.

Card 1/1

- 108 -

KUZNETSOVA, K. I.

36623. BELOUSOV, V. V. i KUZNETSOVA, K. I. K Voprosu o Fizicheskikh Usloviyakh Obrazovaniya Tektonicheskikh Ruzryvov. Izvestiya Akad. Nauk SSSR, Seriya Geogr. i Geofiz., 1949, No. 6, s. 513-17.

SO: Letopis' Zhurnal'nykh Statey, Vol. 50, Moskva, 1949

SHUTSKAYA, Ye.K.; KUKHETSOVA, K.I.

Comparison of gray marls and variegated marls of Daghestan.
Biol.MOIP. Otd.geol. 28 no.6:75-78 '53. (MLRA 6:12)
(Daghestan--Marl) (Marl--Daghestan)

KUZNETSOVA, K.I.

The genus *Planularia* and its new species from the upper
Jurassic of the Russian Platform. Paleont. zhur. no.2:
17-34 '60. (MIRA 13:7)

1. Geologicheskii institut Akademii nauk SSSR.
(Russian Platform--Foraminifera, Fossil)

KUZNETSOVA, K.I.

Taxonomic significance of some morphological characters of Jurassic
Lenticulina species. Vop. mikropaleont. no.4:89-101 '60.
(MIRA 14:5)

1. Geologicheskii institut Akademii nauk SSSR, Moskva.
(Foraminifera, Fossil)

KUZNETSOVA, K.I.

Anomalous shells of lagenids from upper Jurassic deposits of the Volga Valley. Vop. mikropaleont. no.4:102-103 '60. (MIRA 14:5)

1. Geologicheskii institut Akadēmii nauk SSSR.
(Volga Valley-Foraminifera, Fossil)

KUZNETSOVA, K. I., CAND GEOL-MIN SCI, "SYSTEMATI^{CS}
OF CERTAIN TYPES OF JURASSIC LENTICULES AND THEIR STRA-
TIGRAPHIC SIGNIFICANCE." MOSCOW, 1961. (ACAD SCI USSR,
GEOL INST). (KL, 3-61, 207).

KUZNETSOVA, K.I.

Genetic relationships among species of the group *Lenticulina polonica* from Jurassic deposits of the Russian Platform. Vop. mikropaleont. no.5:83-111 '61. (MIRA 14:8)

1. Geologicheskii institut AN SSSR.
(Russian Platform-Foraminifera, Fossil)

KUZNETSOVA, K.I.

Wall structure in some Meso-Cenozoic lagenids. Vop. mikropaleont.
no.5:135-142, '61. (MIRA 14:8)

1. Geologicheskii institut AN SSSR.
(Foraminifera, Fossil)

KUZNETSOVA, K.I.

Genus *Saracenaria* and its representatives from the Upper
Jurassic of the Russian Platform. Vop. mikropaleont.
no.6:73-89 '62. (MIRA 15:11)

1. Geologicheskii institut AN SSSR.
(Russian Platform—Lagenidae, Fossil)