

BOGOLYUBOV, B.P., prof., doktor tekhn.nauk [deceased]; ASTAF'YEV, Yu.P., kand.
tekhn.nauk

Utilization of underground workings in strip mines. Gor.zhur. no.3: -
14-19 Mr '65. (MIRA 18:5)

ASTAF'YEV, Yu.P., kand. tekhn. nauk

Review and bibliography. Gor. zhur. no.6:79 Je '65. (MIRA 18:7)

1. Krivorozhskiy gornorudnyy institut.

C.A.,
ASTAF'YEVA, A.K.

14

Disinfection of air by pulverization and evaporation of lactic acid. V. I. Vashkov, A. K. Astaf'eva, and R. M. Ginzburg (Ministry of Health, Moscow). *Gigiena i Sanit.* 1950, No. 9, 40-4.—Introduction of vapor or spray of 10 mg./cu.m. lactic acid is sufficient for atm. disinfection at any relative humidity. A 15-20-min. exposure is sufficient (test with *Staphylococcus*) and was well borne by white mice.
G. M. Kosolapoff

ASTAFYEVA, A. K.

ASTAFYEVA, A. K. and VASHKOFF, V. I.

Central Res. Inst. for Disinfection, Min. of Hlth, USSR.* Viricidal and bactericidal properties of some chemical compounds (Russian text) GIGIENA 1953, 7 (48-49)

Lactic acid, resorcinol, hexyl-resorcinol, pyrogallol, glycerol, DDT and pine oil were examined for their action against influenza virus A and M. myogenes albus. Aerosols were made of these mixtures and white mice were exposed for different times to these aerosols in a 2 cu.m.-chamber, to study the action against influenza virus A. Experiments with M. myogenes albus gave the following results: in a concentration of 10 mg./cu.m. lactic acid killed after 10 min. 99.2% of the micro-organisms, resorcinol (8 mg./cu.m.) 99.3%, hexylresorcinol (5 mg./cu.m.) 99.4%, pyrogallol (8 mg./cu.m.) 99%, DDT and pine oil (150 mg./cu.m.) only 93 and 97%. The toxicity of these compounds to white mice was also investigated.

Jettmar - Graz

SO: EXCERPTA MEDICA, Section IV, Vol. 7, No. 11

ASTAF'YEVA, A.K.

The virucidal and bactericidal action of some organic acids. V. I. Vashkev and A. K. Astaf'eva. *Trudy Tsentr. Nauch. Issledovatel. Dzhizh. Tlist*: 1954, No. 8, 27-30; *Referat Zhur. Khim., Biol. Khim.*, 1955, No. 4004. Vapors of pyruvic, levulinic, glyceric, $\text{CHCl}_2\text{CO}_2\text{H}$, $\text{CH}_2\text{ClCO}_2\text{H}$, and $\text{CCl}_3\text{CO}_2\text{H}$ acids have strong potentialities as virucidal and bactericidal agents, as shown by tests with air-dispersed staphylococci and influenza virus. Twenty ml. of the vaporized acids sterilized 1 cu. m. air in 10 min. Less effective were acetic, citric, isovaleric, butyric, formic, and caproic acids.

B. S. Levine

MD

①

ASTAF'YEVA, A. V., Candidate Med Sci (diss) -- "The problem of the functional state of the nervous system in rheumatism of children". Saratov, 1959. 15 pp (Min Health RSFSR, Saratov State Med Inst), 200 copies (KL, No 25, 1959, 139)

ASTAF'YEVA, A. V. Cand. Tech. Sci.

Dissertation: "Methods of Processing Gold-Selenium Ores." Moscow Inst of Nonferrous Metals and Gold imeni M. I. Kalinin, 3 Mar 47.

SO: Vechernyaya Moskva, Mar, 1947 (Project #17836)

18.2000

7718
SOV/149-60-1-7/27

AUTHORS: Astaf'yeva, A. V., Ivanovskiy, M. D., Shabarin, S. K.

TITLE: Beneficiation of Poor Copper-Cobalt Ore by Hydrometallurgical Processes

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Tsvetnaya metallurgiya 1960, Nr 1, pp 50-56 (USSR)

ABSTRACT: Cobalt ores of the Soviet Union are characterized by low Co content. Considerable difficulties encountered in dressing are due to very fine dispersion of Co minerals. This article deals with a laboratory test of dressing ore of this type from one of the deposits in the Krasnoyarsk region (not named). The size of Co mineral inclusions ranged from 0.001 to 0.1 mm minus mesh with a total content of 0.036% Co in the ore. The other components were: (%) 65.0 SiO₂, 13.7 Al₂O₃, 3.4 Fe, 3.6 CaO, 1.8 MgO, 0.05 Mn, 1.5 S, 0.12 Sb, 1.63 As, 0.88 Cu, 0.23 Ni, and 37.4 g/ton Ag. About 20% cobalt content

Card 1/7

Beneficiation of Poor Copper-Cobalt Ore
by Hydrometallurgical Processes

77718
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consisted of oxidized minerals and 80% arsenides and sulfoarsenides. The mineralogical analysis was made by A. I. Vitushkina and it disclosed the presence of safflorite, smaltite, glaucodote, aeritrite, tetrahedrite, tennantite, chalcopyrite, covellite, malachite, rammelsbergite, chloantite, annabergit, and silver. The dressing tests comprised the following stages. The first determined the advantages of collective vs selective flotation, each having its own set of reagents. Collective flotation was given preference while selective flotation produced concentrate richer in Co (1.22 vs 1.01%), Co losses in tailings were much higher (16.7% Co content in ore vs 10.6%). After deciding in favor of collective flotation, two variations were tried: (a) with one-stage crushing, three reruns, and selective flotation of the copper-cobalt concentrate; (b) with two-stage crushing, three flotations, selective flotation of the first concentrate, and three reruns of the cobalt concentrate. Alternative (b) proved to be best and resulted in a 10%

Card 2/7

Beneficiation of Poor Copper-Cobalt Ore
by Hydrometallurgical Processes

77718

SOV/149-60-1-7/27

higher rate of Co extraction. Following details of this method are given: The first crushing reduces 45% ore to minus mesh 0.074 mm; in the second crushing this figure is raised to 80%. Crushing is done with soda addition (250 g/ton). During the first flotation 100 g/ton butyl xanthogenate and 30 g/ton pine oil are added; during the second and third flotation, 50 g/ton sodium sulfide, 100 g/ton amyl xanthogenate, and 70 g/ton foaming agent D (not specified). Total flotation time is 40 min. During recleaning operations water glass (500 g/ton) and amyl xanthogenate were added. To eliminate excessive flotation reagents carbon (100 g/ton) was introduced into selective flotation as well as lime (8 kg/ton) as a depressant for cobalt minerals and pyrite. Cobalt extraction according to this schedule reached 70.68%, and the concentrate contained 1.17% Co. Selective flotation methods as suggested by S. I. Krokhin and B. D. Nekrasov and finishing by gravitation as used at the Silence plant, Canada, has failed to produce satisfactory results. Subsequently, hydrometallic

Card 3/7

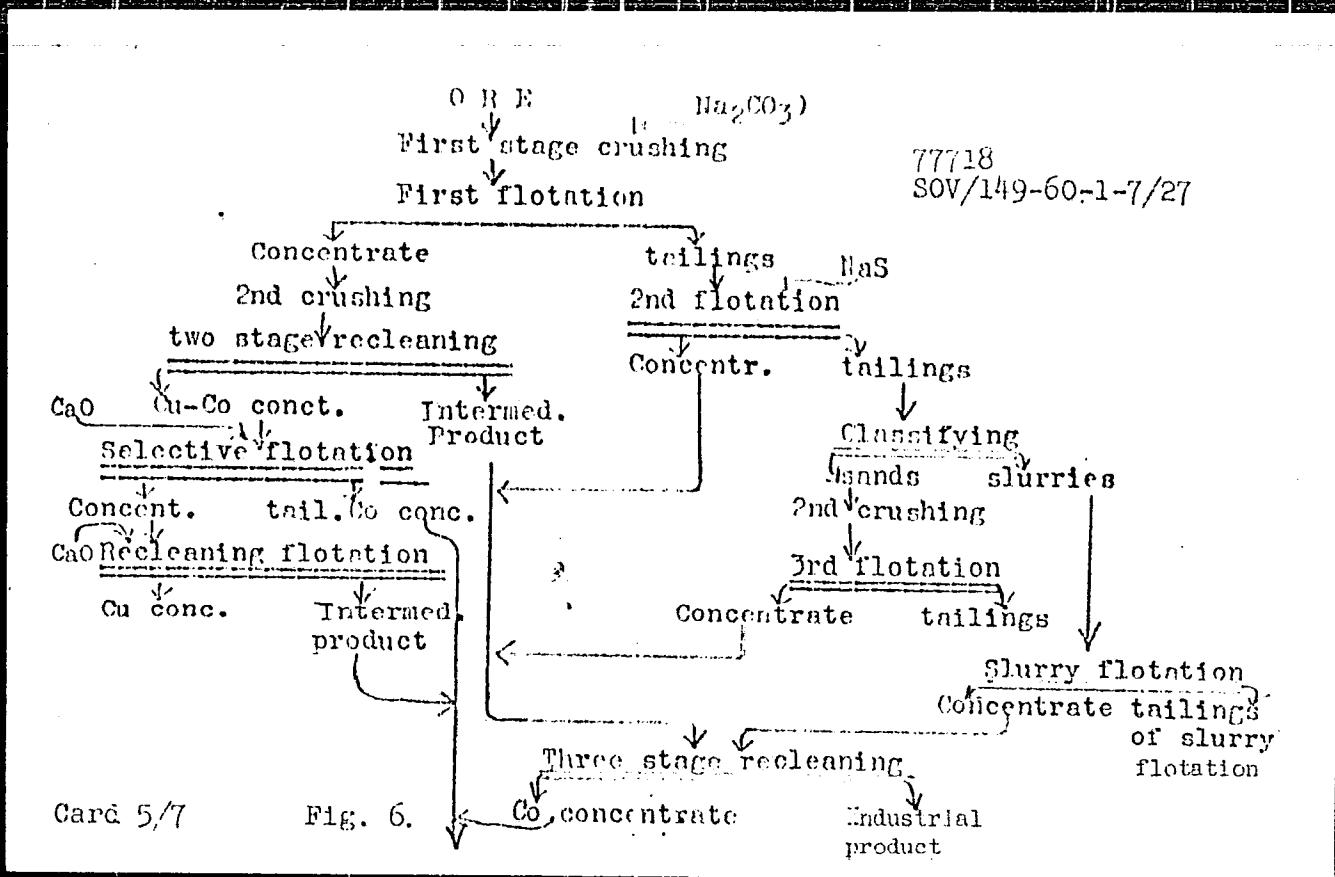
Beneficiation of Poor Copper-Cobalt Ore
by Hydrometallurgical Processes

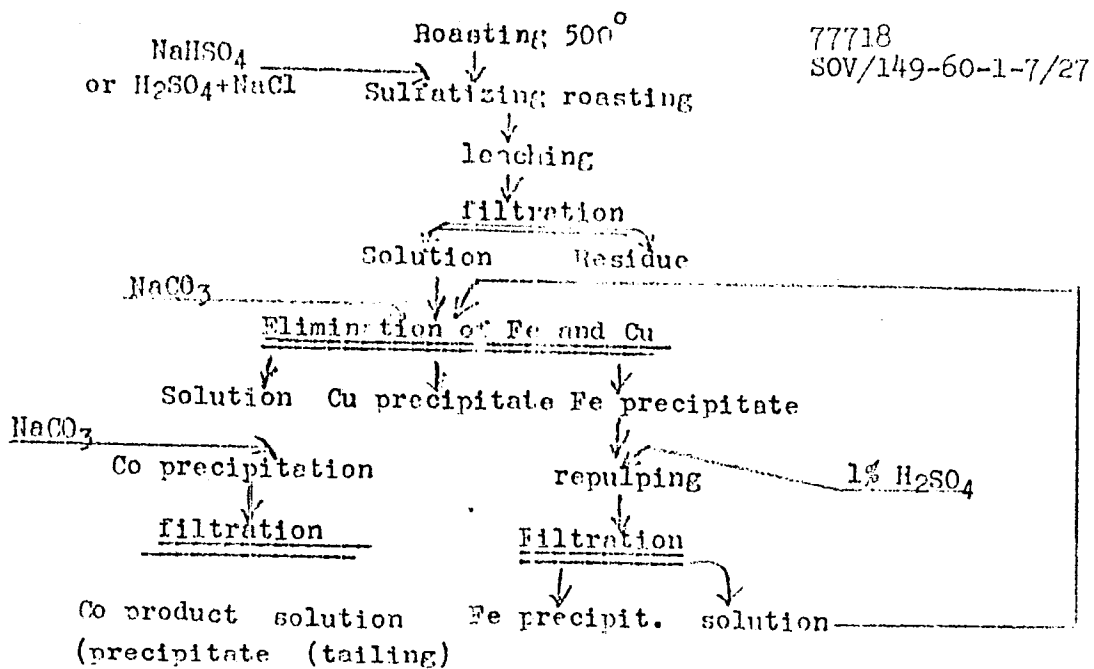
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methods were adopted as shown in the process flow chart below (Fig. 6). Cobalt concentrates as obtained from flotation were processed in following stages: oxidizing roasting at 500^o, sulfatizing roasting with sodium bisulfate at 700^o for 2 hrs, leaching by water, and weak sulfuric acid solution. Under these conditions 90 to 95% available Co passes into the solution. The latter is separated from iron and copper by soda: Fe is precipitated at pH=4.2, Cu at pH=5.2. Cobalt is precipitated by soda (70 mg/liter) or sodium sulfide. The final product contains 12-14% Co at a 84-85% rate of extraction from the concentrate. These processes are incorporated in the flow chart (see Fig. 6). The Co extraction rate from ore amounts to 61.0%, that of Cu is 78.4%. The conclusions contain a short recapitulation of the above data. There are 4 tables; 6 figures; 5 references, 3 Soviet, 1 Canadian, 1 U.K. The Canadian and U.K. references are D. C. McLaren, Can. Mining J., Vol.66, March 1945; H. L. Talbat, Eng. Mining J., August 1953.

Card 4/7





Card 6/7

Fig. 6. Alternative (b) (continued)

Beneficiation of Poor Copper-Cobalt Ore
by Hydrometallurgical Processes

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SOV/149-60-1-7/27

ASSOCIATION: Krasnoyarsk Institute of Non-ferrous Metals. Chair of
Metallurgy of Noble Metals (Krasnoyarskiy institut
tsvetnykh metallo. Kafedra metallurgiyi blagorodnykh
metallo)

SUBMITTED: May 26, 1959

Card 7/7

S/149,60/000/005,003/015
A006, A001

AUTHORS: Astaf'yeva, A.V., Ivanovskiy, M.D. and Spatarin, S.K. 27 27

TITLE: Chemical-Metallurgical Methods of Processing Oxidized Lead-Zinc Ores

PERIODICAL: Izvestiya vysshikh uchebnykh zavseiniy, Tsvetnaya metallurgiya, 1960, No. 5, pp. 49-57

TEXT: The use of flotation, gravitation and other concentration methods for oxidized ores where lead and zinc minerals are closely associated to iron hydroxides and are represented by oxidized minerals, did not yield satisfactory results (Mineralogical analysis of ores was made by A.I. Vitushkina). The investigation of various chemico-metallurgical methods for the extraction of valuable metals from such ores proved the possibility of employing the following processes: 1) Chlorination roasting with sodium chloride to sublimate lead, gold and silver. This is the cheapest method. After crushing, the ore is roasted with sodium hydroxide in a furnace. The lead chlorides formed are sublimated and collected after cooling in the form of dust. Sodium hydroxide consumption is 10% from the ore weight during roasting for 2-3 hours. For ores where the basic
Card 1/6 ✓

S/149,60/000/005/003/015
A005/A001

Chemical-Metallurgical Methods of Processing Oxidized Lead-Zinc Ores

valuable component is lead (7.5%). 700°C is the optimum temperature of roasting. In this case lead extraction into the sublimate attains 95.4% and the lead content in the sublimate dust 65-75%. 2) Lixivation of gold, lead and silver with metal chloride solutions. Lead may be extracted into alkali metal solutions by direct leaching-out in the presence of hydrochloric acid and ferric chlorides: $PbO + 2NaCl + H_2O = PbCl_2 + 2NaOH$. The lead chloride dissolves in the excess of silver. Best results were obtained in leaching out with solutions of two compositions: 300 g/l NaCl + 50 g/l HCl and 300 g/l NaCl + 100 g/l $FeCl_3$ + 25 g/l HCl. Experiments have shown that lead extraction into NaCl solutions without addition of hydrochloric acid was 90% and in the presence of 40-50 g/l HCl increased to 97-98%. 3) Sulfatizing roasting with ammonium sulfate and leaching out of zinc by weak solutions of sulfuric acid. Experiments have shown that sulfatizing roasting should be conducted at 500°C for 2 hours. Leaching out of zinc may be performed with weak 3% sulfuric acid solutions at 60°C. Depending on the consumption of $(NH_4)_2SO_4$, 70 to 94.5% Zn passes into the solution. For ores

Card 2/6

S/149/60/000/005/003/015
A006/A001

Chemical-Metallurgical Methods of Processing Oxidized Lead-Zinc Ores

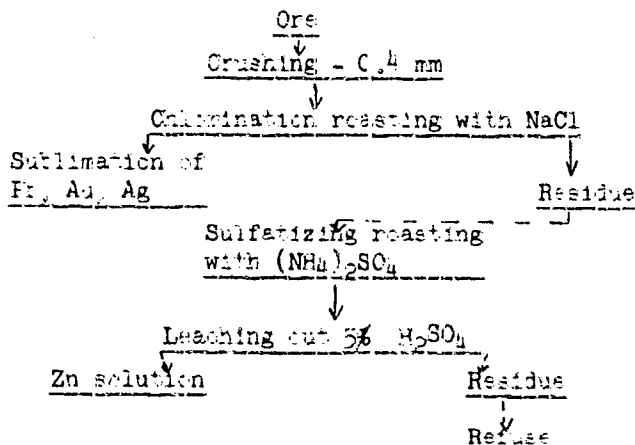


Figure 9. Schematic representation of chlorination roasting with NaCl

Card 4/6

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A006/A001

Chemical-Metallurgical Methods of Processing Oxidized Lead-Zinc Ores

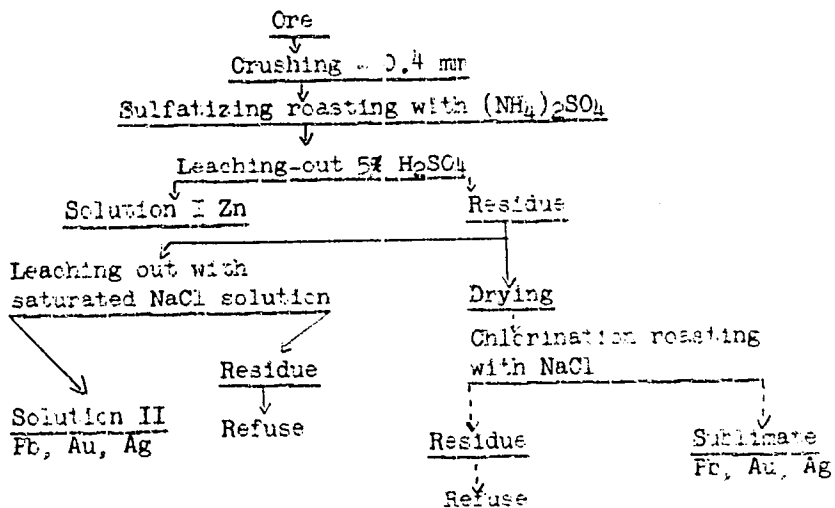


Figure 10. Schematic representation of sulfatizing roasting with (NH₄)₂SO₄
Card 5/6

PLAKSIN, I.N.; ASTAF'YEVA, A.V.; VOSKRESENSKAYA, M.M.; SHABARIN, S.K.

Chlorination as a method to extract platinum and palladium from oxidized copper-nickel ores. Izv. vys. ucheb. zav.; tsvet. met. 3 no. 6:95-103 '60. (MIRA 14:1)

1. Krasnoyarskiy institut tsvetnykh metallov. Kafedra metallurgii blagorodnykh metallov.
(Chlorination) (Nonferrous metals--Metallurgy)

PLAKSIN, I. N. (Moskva); BARYSHEVA, K. F. (Moskva);
ASTAF'YEVA, A. V. (Moskva)

Recovery of rare earth metals by the extraction method. Izv.
AN SSSR. Otd. tekhn. nauk. Ser. 1 topl. no. 6:185-191 N-D '62.
(MIRA 16:1)

(Rare earth metals) (Hydrometallurgy)

ASTAF'YEVA, A.V.

Fauna of the spawning grounds of pink salmon in the rivers of the eastern Mirmansk Coast. Trudy MMBI no.5:148-153 '64.

(MIRA 17-1)

1. Laboratoriya biologicheskikh osnov akklimatizatsii proryslovykh organizmov (zav. - L.I.Vasil'yev) Murmanskogo morskogo biologicheskogo instituta.

IZRAITEL', S.A., otv. red.; SKURAT, V.K., otv. red.; ZUBAREV, S.N., otv. red.; MOISEYEV, S.L., otv. red.; ASTAF'YEVA, A.V., kand. tekhn. nauk, red.; VAS'KOVSKIY, Ye.L., red.; VISHNEVSKIY, Ye.L., red.; KRIVTSOV, B.S., red.; KOROTKIN, I.N., red.; MITROFANOV, S.I., doktor tekhn. nauk, red.; NORKIN, V.V., kand. tekhn. nauk, red.; NIKITIN, A.A., red.; RUDNEV, A.P., red.; SLASTUNOV, V.G., red.; TKACHEV, F.A., red.; RAUKHVARGER, Ye.L., kand. tekhn. nauk, red.; FEOKTISTOV, A.T. [deceased], red.; ZAYTSEV, A.P., red.

[Safety regulations for the dressing and sintering of ferrous and nonferrous metal ores] Pravila bezopasnosti pri obogashchenii i aglomeratsii rud tsvetnykh i chernykh metallov. Moskva, Nedra, 1964. 106 p. (MIRA 18:4)

1. Russia (1917- R.S.F.S.R.) Gosudarstvennyy komitet po nadzoru za bezopasnym vedeniyem v promyshlennosti i gornomu nadzoru.

TSEYEB, R.Ya.; ASTAF'YEVA, A.V.

Comparative characteristics of the selectivity of food of
cod and haddock. Report No.1. Trudy MMBI no.7:79-84 '65.

(MIRA 18:8)

1. Murmanskij morskoy biologicheskiy institut Kol'skogo filiala
AN SSSR, Laboratoriya ikhtiologii.

L 02312-67 EWT(m)/T WW/JW/WIE

ACC NR: AR6016568 SOURCE CODE: UR/0196/65/000/012/T014/T014

AUTHOR: Rozhdestvenskiy, V. P.; Astaf'yeva, E. A.; Orlov, N. A. 69
B

TITLE: Using chromatographic analysis for determining the properties of liquified gas

SOURCE: Ref. zh. Elektrotehnika i energetika, Abs. 12T58

REF SOURCE: Sb. Ispol'zn. gaza v nar. kh-ve. Vyp. 3. Saratov, 1965, 276-280

TOPIC TAGS: chromatographic analysis, gas liquefaction, gas composition analyzer, gas chromatography, vapor pressure, heat of combustion

ABSTRACT: The authors study the possibilities and some characteristics of chromatographic analysis of liquified gases in connection with specification of individual cases by GGST 10196-62, and also in connection with testing of new gas-jet units. The work was done on a Kh-4K chromatograph. One of the fractionating columns of the instrument was filled with tripoli treated in mineral oil and soda. It is shown that chromatographic analysis may be used for determining the composition of liquified gas as well as such important parameters as vapor pressure, heat of combustion and specific weight. 2 illustrations, 1 table, bibliography of 8 titles. ["Gipronigaz" Institute]. V. Speyshe. [Translation of abstract]

SUB CODE: 07, 20

Card 1/1 *ld*

UDC: 662.767:543.544

ASTAF'YEVA, E.V.

LITVINOV, L.S.; ASTAF'YEVA, E.V.

Immobilization of potassium in soil [with summary in English].
Mikrobiologii 26 no.2:167-171 Mr-Apr '57. (MIRA 10:10)

1. Lvovskiy gosudarstvennyy universitet.
(POTASSIUM
immobilization in soil (Rus))
(SOIL
potassium immobilization in soil (Rus))

ASTAF'YEVA, G.V.

KLYUCHIKOV, V.N.; ASTAF'YEVA, G.V.

Clinical characteristics of Kulkova-Rülf's intention spasm [with
summary in French]. Zhur.nevr. i psikh. 57 no.5:624-627 '57.

(MLRA 10:8)

1. Klinika nervnykh bolezney (dir. - prof. G.G.Sokolyanskiy)
Yaroslavskogo meditsinskogo instituta
(SPASM, case reports,
intentional of Rülf (Rus))

ASTAF'YEVA, I., tsekhovoy vrach

From a workshop physician's point of view. Sov. profsoiuzy
19 no.8:22-23 Ap '63. (MIRA 16:6)

1. Otdelochnaya fabrika Melanzhevogo kombinata, Ivanovo.
(Health resorts, Watering places, etc.)

ASTAF'YEVA, K. A.

ASTAF'YEVA, K. A.: "Apsheron cardiides of Turkmenia". Moscow, 1955. Acad Sci USSR, Paleontological Institute. (Dissertation for the Degree of Candidate of Biological Sciences)

SO: Knizhnaya Letopis' No. 40, 1 Oct 55

Астап'ева, К.А.

ASTAP'YEVA, K.A.

New Cardidae genus. *Biul.MOIP. Otd.geol.30 no.3:94 My-Je'55.*
(Lamellibranchiata, Fossil) (MIRA 8:10)

MOSKVIN, M.M.; MASLAKOVA, N.I.; DOBROV, S.A.; PAVLOVA, M.M.; NAYDIN, D.P.;
SHIMANSKIY, V.N.; ASTAP'YEVA, K.A.; POSLAVSKAYA, N.A.. Primal
uchastiye CHEKHOVICH, M.V.. SHOROKHOVA, L.I., vedushchiy red.;
MUKHINA, E.A., tekhn.red.

[Atlas of upper Cretaceous fauna of the Northern Caucasus and the
Crimea] Atlas verkhnemelovoi fauny Severnogo Kavkaza i Kryma.
Pod red. M.M.Moskvina. Moskva, Gos.nauchno-tekhn.izd-vo neft. i
gorno-toplivnoi lit-ry, 1959. 499 p. (MIRA 13:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut prirodnykh gazov.
2. Sotrudniki kafedry istoricheskoy geologii i paleontologii Geologi-
cheskogo fakul'teta Moskovskogo gosudarstvennogo universiteta (for
all except Shorokhova, Mukhina).
(Caucasus, Northern--Paleontology, Stratigraphic)
(Crimea--Paleontology, Stratigraphic)

ASTAF'YEVA, K.A.

Systematics of Apsheron Cardiidae. Izv.vys.ucheb.zav.;
geol.i razv. no.3:42-49 My '60. (MIRA 13:7)

1. Moskovskiy gosudarstvennyy universitet im. M.V.
Lomonosova.
(Caspian Sea region--Eulamellibranchiata, Fossil)

MIKHAYLOVA, I.G.; ASTAF'YEVA, L.A.

Experimentally induced inflammation in the placenta of white rats
Vest. IiU 15 no.21:113-118 '60. (MIRA14:4)
(Placenta) (Inflammation) (Phagocytosis)

SOKOLOV, V.A.; ASTAF'YEVA, L.A.

Destruction of gastric tissues in the starfish *Asterias rubens* L.
as a response to changes in the environmental conditions. Trudy
MMBI no.3:55-60 '61. (MIRA 15:3)

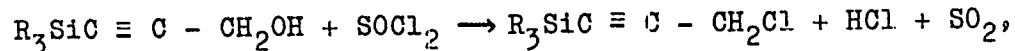
1. Laboratoriya sravnitel'noy fiziologii (zav. --E.Sh.Ayrapet'yants)
Murmanskogo morskogo biologicheskogo instituta.
(Starfishes)(Temperature--Physiological effect)
(Digestive organs--Echinodermata)

ASTAF'YEVA, L.F.

Structural features of the Miocene cover and their expression in
the relief of the Karabaur spur (central Ust-Urt). Trudy SGPK
no.2:60-72 '61. (MIRA 14:11)
(Ust-Urt--Geology, Structural)

5.370024421
S/079/61/031/007/003/008
D229/D305AUTHORS: Komarov, N.V., Shostakovskiy, M.P., and Astaf'yeva,
L.N.TITLE: Interaction of γ -silicon acetylenic alcohols with
thionyl chloridePERIODICAL: Zhurnal obshchey khimii, v. 31, no. 7, 1961,
2100 - 2102

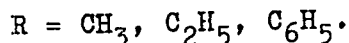
TEXT: This is a report on the syntheses and properties of new silico-organic compounds. The present work is a continuation of an earlier investigation concerning the syntheses and substitution reactions of numerous acetylenic alcohols containing inorganic elements. It was found in this work that γ -silicon acetylenic alcohols reacted with thionyl chloride to form corresponding chlorides:



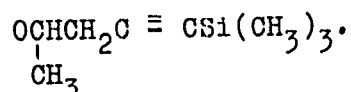
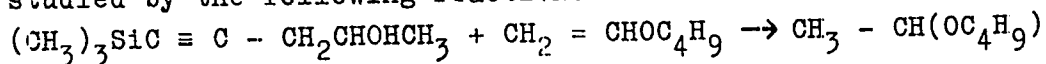
Card 1/4

Interaction of γ -silicon ...

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S/079/61/031/007/003/008
D229/D305



Thus, new compounds were synthesized: 3-chloropropyne-1-trimethylsilane, 3-chloropropyne-1-triethylsilane and 3-chloropropyne-1-dimethylphenylsilane. The reactivity of the above chlorides was studied by the following reaction:



named (4-trimethylsilyl-1-methyl-butyn-3) - butylacetal. The synthesis of $(\text{CH}_3)_3\text{SiC} \equiv \text{C}-\text{CH}_2\text{Cl}$, designated 3-chloropropyne-1-trimethylsilane is then described. Characteristics of the product are: b.p. $50^\circ/17 \text{ mm}$, n_D^{20} 1.4546, d_4^{20} 0.9295, MR_D 42.87; calc. 42.77 [Abstractor's note: MR_D not defined]. Found percent: Si 18.84, $\text{C}_6\text{H}_{11}\text{SiCl}$. Calculated percent: Si 19.14. The synthesis of $(\text{C}_2\text{H}_5)_3\text{SiC} \equiv \text{C}-$

Card 2/4

24421

S/079/61/031/007/003/008
D229/D305Interaction of γ -silicon ...

CH_2Cl , named 3-chloropropyne-1-triethylsilane, was analogous to that of 3-chloropropyne-1-trimethylsilane. Quantities used: 8.92 gr. of thionyl chloride, 1 gr. of pyridine, 9.51 gr. of 3-triethylsilylpropyne-2-ol-1 (b.p. $109-110^\circ/6$ mm, n_D^{20} 1.4670, d_4^{20} 0.8932). The yield was 8.95 gr. (95 %). Characteristics of products b.p. $72^\circ/6$ mm, n_D^{20} 1.4698, d_4^{20} 0.9262, MR_D 57.03; calculated 56.66. Found percent: Si 15.16. C_9H_{17} SiCl. Calculated percent Si 14.84. Synthesis of $(\text{CH}_3)_2 - \text{SiC} \equiv \text{C} - \text{CH}_2\text{Cl}$ named 3-chloropropyne-1-dimethylphenylsila-

C_6H_5
ne was analogous to that of 3-chloropropyne-1-trimethylsilane. Characteristics of product: b.p. $118^\circ/6$ mm, n_D^{20} 1.5345, MR_C 62.39; calculated 62.44. Found percent: Si 13.54. $\text{C}_{11}\text{H}_{13}$ SiCl. Calculated percent: Si 13.42. The authors then describe the synthesis of 5-tri-

Card 3/4

Interaction of γ -silicon ...

S/079/61/031/007/003/008
D229/D305

methyilsilylpentyne-4-ol². The yield was 3.5 gr. (16.4 %). The characteristics of the product: b.p. 95-97^o/2 mm, n_D^{20} 1.4748, d_4^{20} 0.9101. Found MR_D 48.46; calculated 48.74. Found percent: Si 17.90 $C_8H_{16}OSi$. Calculated percent Si 17.9. Finally the synthesis of 4-trimethylsilyl-1-methylbutyne-3/butylacetyl is examined. The yield was 4.68 gr. (97.5 %). Characteristics of the product: b.p. 153^o/3 mm, n_D^{20} 1.4655, d_4^{20} 0.8925, MR_D^2 79.12; calculated 78.51. Found percent: Si 11.52. $C_{14}H_{26}O_2Si$. Calculated percent: Si 11.00. There are 2 Soviet-bloc references.

ASSOCIATION: Irkutskiy institut organicheskoy khimii Sibirskogo ot-deleniya akademii nauk SSSR (Irkutsk Institute of Organic Chemistry, Siberian Division, Academy of Sciences USSR)

SUBMITTED: July 27, 1960

Card 4/4

KOMAROV, N. V.; MAROSHIN, Yu. V.; LEBEDEVA, A. D.; ASTAF'YEVA, L. N.

Oxygen-containing organosilicon compounds. Report No. 7:
Acetylene and vinylacetylene silanols and their transforma-
tions. Izv. AN SSSR, Otd. khim. nauk no.1:97-105 '67.
(MIRA 16:1)

1. Irkutskiy institut organicheskoy khimii AN SSSR,

(Silanol) (Unsaturated compounds)

L 5309-66 EWT(m)/EPF(c)/EWP(j) RM

ACC NR: AP5025676

SOURCE CODE: UR/0286/65/000/018/0025/0025

AUTHORS: Komarov, N. V.; Astaf'yeva, L. N.

ORG: none

TITLE: A method for obtaining silicon-bearing β -chloracroleins. Class 12, No. 174623

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 18, 1965, 25

TOPIC TAGS: silicon, beta chloracrolein, siliconacetilene aldehyde, hydrogen chloride, acetic acid

ABSTRACT: This Author Certificate presents a method for obtaining silicon-containing β -chloracroleins. In this method siliconacetilene aldehydes are reacted with hydrogen chloride in acetic acid.

SUB CODE: OC, GC SUBM DATE: 10Aug64/ ORIG REF: 000/ OTH REF: 000

Card 1/1

L 45896-66 EWT(m)/EWP(i) WN/RM

ACC NR: AP6026428 (A)

SOURCE CODE: UR/0079/66/036/005/0907/0909

AUTHOR: Komarov, N. V.; Yarosh, O. G.; Astaf'yeva, L. N.

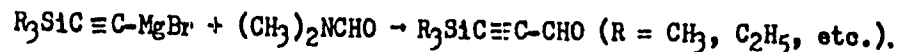
ORG: Irkutsk Institute of Organic Chemistry, Siberian Branch, Academy of Sciences, SSSR (Irkutskiy institut organicheskoy khimii Sibirskogo otdeleniya Akademii nauk SSSR)

TITLE: Synthesis and some conversions of α -silicoacetylene aldehydes

SOURCE: Zhurnal obshchey khimii, v. 36, no. 5, 1966, 907-909

TOPIC TAGS: aldehyde, organosilicon compound, organomagnesium compound

ABSTRACT: A study of the reaction of magnesium derivatives of trialkylethynylsilanes with dimethylformamide showed that trialkylsilylethynylmagnesium bromides readily react with this amide to form previously unknown 1-silicoacetylene aldehydes (in 70% yield):



The structure of the aldehydes was confirmed by ultimate analysis, physicochemical studies, and some chemical conversions. Thus, the reaction of 2,4-dinitrophenylhydrazine and 3,5-dinitrobenzoylhydrazide produced the corresponding hydrazones. The reaction of α -silicoacetylene aldehydes with the organomagnesium compounds produced

Card 1/2

UDC: 547.245+547.382.1

L 45896-66

ACC NR: AP6026428

secondary silicoacetylenic alcohols, and the reaction of these aldehydes with magnesium bromovinylacetylene yielded secondary organosilicon endiynes alcohols. The presence of alcohol groups in the latter was demonstrated by their reaction with vinyl butyl ether and the formation of the corresponding acetals.

SUB CODE: 07/ SUBM DATE: 08May65/ ORIG REF: 006

Card 2/2 mjs

ASTAF'YEVA, M. A.

✓ 40% Appendix for power
for special report in...
and A. E. Guryachenko...

117
any

EXPERIMENTS ON WATER SOFTENING WITH HUMUS COALS

АСТАЛ'ЯВНА, М. Е.

14

EXPERIMENTS ON WATER SOFTENING WITH HUMUS COALS
 V. P. Astal'ev and M. E. Astal'evna (Moskovskii Inst. Mineral'nogo Syr'ya). *Za Ekonomiya* (Leningrad), No. 1, 32-4 (1940). --Humus coals suitable for water softening are found in the Moscow region (I), Bogosloy deposit (II) (north of Sverdlovsk), in Bashkiria (III), and other deposits. The exchange capacity of I of grain size 0.3-3 mm. is 400-800 and of size 0.3-1 mm. is 600-1200 tons per degree per cu.m. The exchange capacity of II is 1200-2000 tons per degree per cu.m. and III is similar to I. Expts. are reported on using I, repeatedly regenerated, for softening feed water. The effectiveness of I in this respect was 2-4 times greater than that of klanonite. M. Hasko

GENERAL LITERATURE CLASSIFICATION

EXPERIMENTS ON WATER SOFTENING WITH HUMUS COALS

YESORKIN, A.V.; AGHAF'YEVA, M.I.; ABRAMSON, R.L.

Subsurface structure of southwestern Uzbekistan based on the
data of regional seismic studies. Sov. geol. 8 no.6:149.
1966. (MIRA 18:8)

ASTAF'YEVA, M.N.; VETRENKO, Ye.A.; MIKULINSKIY, A.S.; FRISHBERG, I.V.

Rosman-Yarwood's formula for calculating the coefficient
of condensation. Zhur. fiz. khim. 38 no.2:523-525 F 6.

(MIRA 17:8)

1. Institut metallurgii Ural'skogo filiala AN SSSR.

ASTAF'YEVA, M.S.; KLIMUSHIN, I.M.; KHISANOV, R.B.

Using the specific resistance of rocks in the testing of methods
for determining the permeability of terrigenous layers. Geol.
nefti i gaza 5 no. 5:42-44 My '61. (MIRA 14:4)

1. Tatarskiy nauchno-issledovatel'skiy neftyanoy institut.
(Rocks--Permeability)

S/169/63/000/002/120/127
D263/D307

AUTHORS: Sultanov, S. A., Astaf'yeva, M. S., Kilimushin, I. M.
and Khisamov, R. B.

TITLE: Use of industrial geophysical methods of determining
rock properties of terrigenous ores at Romashkinskoye
deposit.

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 2, 1963, 35-36,
abstract 21211 (Tr. Tatarsk. neft. n.-i. in-t, 1961,
no. 3, 49-59)

TEXT: At Romashkinskoye deposit different methods of determining
the porosity of ores (K_p) from natural potential (NP) diagrams,
the permeability (K_{pr}) from the data of the resistance method, and
N. V. Vilkov's methods were checked. A comparative analysis of me-
thods of determining K_p from NP was made for strata having K_p lar-
ger than 16% in boreholes of the central part of the deposit, cha-
racterized by three and more cores. The research group method of

Card 1/3

Use of industrial ...

S/169/63/000/002/120/127
D263/D307

'Tatneftegeofizika' trust, and methods of A. I. Krinari and L. P. Dolina were checked. The minimum mean relative error in determining K_{pr} was obtained using the research group method, and the maximum error using Dolina's method. Maximum relative error in all methods is observed for strata less than 3 m thick. Methods of determining K_{pr} from the resistivity ρ_p of L. P. Dolina, S. A. Sultanov, V. M. Dobrynin and 'Tatneftegeofizika' trust were checked. G. S. Morozov's method was not checked as it gives high errors. Best results were obtained by L. P. Dolina's method, worst by the trust's method. All methods give small errors for strata with ρ_p 100 ohm.m, all methods give a low value of K_{pr} . The error in determining K_{pr} by all methods increases in strata less than 2 m thick. N. V. Vilkov's method of determining K_{pr} from NP is unsatisfactory, as it takes no account of the lack of connection between the NP amplitude, A_{NP} , and the permeability for K_{pr} 100 millidarcies, and of the very weak connection between A_{NP} and K_{pr} for

Card 2/3

Use of industrial ...

S/169/63/000/002/120/127
D263/D307

K_{pr} 100 millidarcies; no corrections are made in the values of A_{NP} for the effect of thickness and resistivity of the stratum. The general character of the connection between A_{NP} and K_{pr} indicated by Vilkov differs from the actual one. [Abstracter's note: Complete translation.]

Card 3/3

BORZOVA, L.D.; TORINA, I.V.; ASTAF'YEVA, N.G.; GALLYAMOV, V.M.; SOBOLEVA, L.A.

Determination of vanadium in mazut. Energotekh. ispol'. topl.
no.2:192-198 '62. (MIRA 16:5)
(Mazut--Analysis) (Vanadium--Analysis)

ASTAF'YEVA, T. M.

BA 13/49T75

USSR/Medicine - Public Health,
Training
Medicine - Public Health,
Administration

Jul/Aug 48

"Selection and Preparation of Directing Regional
(Municipal) Public Health Departments," T. M.
Astaf'yeva, Deputy Minister of Pub Health RSFSR, 5 pp

"Sov Zdravookhran" No 4

Discusses misallocation of duties in the past and how
such mistakes may best be avoided in the future.

13/49T75 .

АСТАФ'ЕВА, Т. Н.

ASTAF'EVA, T. N.

Certain problems of reorganization of public health in cities.
Sovet. zdravokhr. No. 3, May-June 50. p. 22-30

1. Moscow

GLML 19, 5, Nov., 1950

ASTAF'YEVA, T.M.; DERYABINA, V.L.

Unification of hospitals and polyclinics and dispensary services for the population. Sovet. zdavookhr. 11 no.1:15-25 Jan-Feb 52. (CIML 21:4)

1. Of the Institute of Public Health Organization and History of Medicine of the Academy of Medical Sciences USSR.

АНАЛИЗ, V. 1.

37646. Akeivnyye metody lechenya nepravil'no sroschikhsya ognestrel'nykh perelomov bedra, oslozhennykh osteomieliton. Trudy Tomskogo med. In-ta im. Molotova, T. XV, 1949, S. 157-69

SO: Letopis' Zhurnal'nykh Statey, Vol. 37, 1949

ASTAF'YEVA, V.V.

Polarographic determination of copper, nickel, and cobalt
in rocks. Zav.lab. 31 no.10:1184-1185 '65.

(MIRA 19:1)

1. Kol'skiy filial AN SSSR.

ASTAF'YEVA, Ye.G.

Automatic switch-off of heat exchanger pumps. Elek. i tepl.tiaga
6 no.8:25 Ag '62. (MIRA 17:3)

1. Starshiy inzh. Demskogo uchastka energosnabsheniya Kuybyshevskoy
dorogi.

SOV/137-58-11-23456

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 231 (USSR)

AUTHORS: Kidin, I. N., Astaf'yeva, Ye. V.

TITLE: A Radiographic Investigation of Nonuniformity of Martensite Produced During Hardening of Steel With Induction Heating (Issledovaniye neodnorodnosti martensita, poluchennogo pri zakaлке stali s induktsionnym nagrevom, metodom radiografii)

PERIODICAL: V sb.: Prom. primeneniye tokov vysokoy chastoty. Riga, 1957, pp 194-205

ABSTRACT: Autoradiography methods were employed in an investigation of the distribution of C in the structure of induction-hardened steel St 20. The C¹⁴ isotope was introduced into the specimens by means of annealing them in vacuum, at a temperature of 1100°C for a period of four hours, together with BaCO₃ enriched with C¹⁴. After annealing, the average size of a pearlitic region amounted to approximately 65μ and that of a ferritic field to 115μ. Heating rates (HR) of 30, 130, and 230 degrees/second were employed in the region of phase transformations. At all HR the quenching was performed at temperatures ranging from 800 to 1300°. Photometric evaluation of the radiograms

Card 1/2

SOV/137-58-11-23456

A Radiographic Investigation of Nonuniformity of Martensite Produced During (cont.)

revealed that the nonuniformity of C distribution at all quenching temperatures increases with increasing HR. A fully hardened structure may be obtained only at a temperature of 1100° or above. During quenching from a temperature of 900° the concentration of C in the central portions of the formerly pearlitic regions amounts to 0.57% at an HR of 30°/sec and 0.75% at an HR of 130°/sec. Almost complete equalization of the C concentration was attained only after quenching from a temperature of 1300° at a minimal HR of 30°/sec; at an HR of 230°/sec, the C concentration in the central portions of the formerly pearlitic regions amounted to 0.58% and in the ferritic interstices to 0.07% only. Regardless of the HR the intensity of diffusion processes is greater at 800-1100° than it is at 1100-1300° owing to a reduction in the gradient of C concentration at temperatures ranging from 1100 to 1300°.

L.F.

Card 2/2

ASTAF'YEVA, Ye.V., Cand Tech Sci--(dis) "Study of heterogeneity of
the structure of steel ^{after} ~~of~~ high-frequency tempering. Mos, 1958. 15 pp incl
cover (Min of Higher Education USSR. Mos Order of Labor Red Banner
Institute of Steel in I.V.Stalin), 120 copies (17,49-6, 12)

- 4 -

AUTHORS: Kidin, I.N., Astaf'yeva, Ye. V. SOV/163-58-1-49/53

TITLE: Radiographic Investigation on the Steel Structure After High Frequency Hardening (Issledovaniye struktury stali posle vysokochastotnoy zakalki metodom radiografii)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 1, pp 260 - 265 (USSR)

ABSTRACT: The qualitative and quantitative phase distribution of carbon in the induction expansion of non-eutectoid steels was demonstrated by means of the radiographic method. In all steel samples investigated the heating rate promoted the formation of irregularities in the structures. On the addition of 0,5 % chromium to the steel sample a change in the distribution of carbon as compared to steel sample No.20 does not occur. With an increase in the chromium content up to 2 % a considerable hampering of the diffusion of carbon in steel occurs. A noticeable retardation of the diffusion process occurs in steel samples with 0,5 % tungsten. On the increase of the tungsten content in the steel samples a hampering of the displacement of the diffusion of the carbon atoms from the primary perlite zone occurs.

Card 1/2

Radiographic Investigation on the Steel Structure
After High Frequency Hardening

SOV/163-58-1-49/53

At $V_{Hf} = 230^{\circ}/\text{sec}$ for the production of carbon concentrations of 0,05 % in the medium ferrite ranges of steel with a content of 2 % tungsten a heating to 1300°C is necessary.

Molybdenum occurs in the steel samples almost entirely as solid solution and already small additions of molybdenum considerably influence the diffusion of carbon.

In comparing the results with tungsten steels it became evident that in the case of equal amounts of elements to be alloyed and an equal concentration of carbon in the medium ferrite zone the diffusion in molybdenum steels occurs at much higher temperatures than in tungsten steels.

With 1 % molybdenum the steel still has the structure of free ferrite, even when tempered at 1200°C and at $V_{Hf} = 230^{\circ}/\text{sec}$.

There are 4 figures, 1 table, and 6 references, 5 of which are Soviet.

Card 2/2

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: October 1, 1957

SOV/129-58-9-1/16

AUTHORS: Kidin, I. N., Doctor of Technical Science, Professor;
Astaf'yeva, Ye. V. and Marshalkin, A. M., Engineers

TITLE: Features of the Process of Tempering After High
Frequency Hardening (Osobennosti protsessa otpuska posle
vysokochastotnoy zakalki)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, Nr 9,
pp 2-12 + 1 plate (USSR)

ABSTRACT: "Self tempering", the duration of which is a few seconds,
is in many cases convenient and economical (Refs 1 and 2).
However, this type of heat treatment has not been used
adequately due to non-availability of the necessary
automatic control and metering apparatus. Of great
interest are the results relating to combination of
electric tempering with electric hardening (Refs 3-5).
An important condition of electric tempering is that
uniform heating should be achieved, to the desired depth,
without overheating of the surface. In earlier work of
the authors (Refs 6-10) it was found that
if the speed of heating for hardening is high, the
state of the austenite is characterised by a considerable
non-uniformity in the carbon content as compared to

Card 1/8

SOV/129-58-9-1/16
Features of the Process of Tempering After High Frequency Hardening

austenite formed during ordinary slow heating. As a result of this non-uniformity, the austenite to martensite transformation during the cooling will take place within a wider temperature range; the micro-volumes of the austenite which are most saturated with carbon become transformed into martensite at lower temperatures and later than the micro-volumes which are poor in carbon and for which the martensitic point is located at a more elevated temperature. The micro-volumes of the martensite forming at a higher temperature may decompose during the further cooling of the hardening process forming martensite of a lower tetragonality and a finely dispersed carbide phase. A similar phenomenon for tempering after ordinary hardening was investigated in detail by Kurdyumov, G. V. and Oslon, N. (Ref 10) by X-ray methods. In this paper the authors investigate the changes in the structural state and the mechanical properties of a number of engineering and carbon tool steels during ordinary tempering in conjunction with regimes of high frequency hardening and the features of the obtained structure. In the case of rapid induction heating

Card 2/8

NOV/129-58-9-1/16
Features of the Process of Tempering After High Frequency Hardening of steel prior to hardening, a concentration non-uniformity can be created in the micro-volumes. Study of this non-uniformity by radiography methods has enabled establishing the fact that the distribution of the carbon at the end of the induction heating may differ, depending on the heating regime and the character of the initial structure. Micro-structures and micro-radiograms of Steel 20 hardened from 1100°C with various heating speed are reproduced in Fig.1 (plate). The structure is relatively uniform in the case of slow heating, whilst with increasing heating speeds the non-uniformity in the carbon distribution becomes much more pronounced. This was also confirmed by X-ray studies. The features of decomposition during tempering of the non-uniform martensite were also studied; the graph Fig.3 indicates the curves of the changes of the (110) lines after tempering of specimens of the Steel U7 and, by comparing the appropriate curves, it can be seen that an increase in the heating speed for heating to the same temperature, e.g. 960°C, results in an increase in the width of the line and consequently also in an increase in the non-uniformity. In Fig.4 the changes are graphed

Card 3/8

SOV/129-52-9-1/16

Features of the Process of Tempering After High Frequency Hardening of the maximum carbon concentration during tempering of Steel 40 which prior to hardening was heated with a speed of 130° C/sec from 920 and 960° C respectively. The influence of low temperature tempering on the mechanical properties after high frequency hardening was investigated by the continuous-successive method on the Steels 40 and 35 Kh; for the impact tests, specimens of 11.28 mm dia. were chosen in accordance with the suggestion of I. V. Kudryavtsev (Ref 13). 100 mm long specimens were hardened using as a current source a tube oscillator, the heating speeds in the regions of phase transformations were 50, 100, 200 and 400° C/sec for the temperatures 900, 1000 and 1100° C. The tempering was effected at 120, 150, 180 and 200° C for heating durations of 15, 30 and 60 minutes. From the tempered specimens the centre part of a length of 55 mm was cut out by the anodic-mechanical method and in this a 0.5 mm notch with a recess angle of 60° was made. Specimens which have been hardened right through have been tested on an impact machine using an impact of 10 kgm. The influence of the high frequency hardening on the impact strength after tempering

Card 4/8

SOV/129-53-9-1/16

Features of the Process of Tempering After High Frequency Hardening

is quite considerable as can be seen from the graphs, Fig.5; in the case of Steel 40 a heating speed of 50°C/sec will ensure an impact strength equal to the impact strength obtained after ordinary hardening and tempering only if the tempering is effected at 900°C. Increase of the hardening temperature to 1000 and 1100°C leads to a considerable decrease of the impact strength. However, an increase in the heating speed prior to hardening to 200°C, and particularly to 400°C, followed by tempering will ensure a considerable improvement of the combination of the toughness and hardness. The highest impact strength was obtained in the case of tempering at 200°C for one hour after hardening from a temperature of 1000°C using a heating speed of 400°C/sec. By using this regime an impact strength is obtained which is almost double that obtained after ordinary hardening followed by equal tempering. In Fig.6 the change of the impact strength after hardening followed by low temperature tempering is graphed for the Steel 40 hardened from 920°C after heating at a rate of 130°C/sec. The breaking strength was measured of standard notched specimens of

Card 5/8

SOV/129-52-9-1/16

Features of the Process of Tempering After High Frequency Hardening

40KhN steel which were heated prior to hardening with a current of 2.5 kc/sec, a heating speed of 20°C/sec to 970°C and, after hardening, they were tempered for one hour at 120, 150 and 180°C respectively. For comparison the breaking strength was also measured of specimens after ordinary hardening and low temperature tempering. It can be seen from Fig.7 that the breaking strength for induction hardening as well as ordinary hardening increases with increasing temperature of the low temperature tempering. Specimens hardened from 970°C after heating at a rate of 20°C/sec showed an increase in the breaking strength from 8 to 9.8 tons after tempering at 120°C and to 11.3 tons after tempering at 180°C. The changes in the mechanical properties were also investigated for medium and high temperature tempering for the Steels 40KhN and 40 KhG. Hardening from 1000°C followed by tempering ensures for the steel 40KhN the same properties as ordinary hardening followed by tempering. However, hardening from 900°C with the same speed of heating and subsequent tempering produces an optimum combination of the properties, namely, a higher

Card 6/8

SOV/129-58-9-1/16

Features of the Process of Tempering After High Frequency Hardening

impact strength and hardness than after ordinary hardening and tempering. In the case of heating prior to hardening with a speed of $400^{\circ}\text{C}/\text{sec}$ advantages compared to ordinary hardening are observed in the case of hardening from 1000 and 1100°C ; the impact strength will be lower in the case of hardening from 1200°C . The heating speed of $100^{\circ}\text{C}/\text{sec}$ is inadvisable since for the chosen temperatures of hardening and subsequent tempering the impact strength will be lower than for ordinary hardening. For tempering temperatures exceeding 350°C the increase in hardness due to high frequency hardening does not remain conserved for the Steels 40KhN and 40KhG. At higher tempering temperatures (up to 600°C) the hardness of high frequency hardened steel may in some cases be lower than of the same steel after conventional hardening which is obviously due to a difference in the kinetics of the processes of coagulation in steel hardened after induction heating. High frequency hardening does not suppress type I and type II temper brittleness. These are observed at the same tempering temperatures as for conventionally hardened steel.

Card 7/8

SOV/129-58-9-1/16

Features of the Process of Tempering After High Frequency Hardening

However, the impact strength at the temper brittleness temperatures is considerably higher for steels which were high frequency hardened under optimum heating regimes than for steels which were hardened by standard methods of heating. The here given experimental data indicate that there is a relation between the regime of high frequency hardening and the subsequent tempering, i.e. between the character of the distribution of carbon and the alloying elements after hardening and their redistribution after tempering, which has a considerable influence on the changes of the mechanical properties of hardened and tempered steel.

There are 7 figures and 16 references, 15 of which are Soviet, 1 English.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

1. Steel--Heat treatment
2. Tool steel--Heat treatment
3. Steel--Properties
4. Steel--Transformations
5. High frequency heating--Applications

Card 8/8

26501

S/129/61/000/008/014/015

E073/E535

1.1700

AUTHORS: Astaf'yeva, Ye. V., Candidate of Technical Sciences,
Bernshteyn, M.L., Candidate of Technical Sciences,
Kidin, I.N., Doctor of Technical Sciences,
Katok, A.M., Engineer and Tsypina, Ye. D., Engineer

TITLE: Strengthening of alloyed constructional steel by thermomechanical treatment

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1961, No.8, pp.54-56 + 2 plates

TEXT: The authors have tried out the effect of thermomechanical and thermo-mechanical-magnetic treatment of the steels 40X1H8A (40Kh1NVA) (0.39% C, 1.43% Cr, 1.59% Ni, 0.8% W) and 37XN3A (37KhN3A) (0.40% C, 1.3% Cr, 3.9% Ni). From annealed steel, flat specimens of various thicknesses were produced, all of which were then deformed to a final thickness of 3 mm. The specimens were heated at 930-950°C for 20 min and, following that, they were hot rolled on a two-high mill or, alternatively, prior to rolling they were placed into a furnace where the temperature was maintained at 540 to 560°C (steel 40Kh1NVA) or 470 to 480°C for the steel
Card 1/4

X

Strengthening of alloyed ...

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E073/E535

X

37KhN3A and held at these temperatures for 3 min. After rolling, the specimens were oil quenched. However, the specimens which were subjected to intermediate isothermal soaking were air quenched. Some of the specimens were quenched in a magnetic field produced by a solenoid and so spaced that all the specimens were under equal magnetic conditions. The field strength was low, about 1300 Oe, and therefore the influence of the thermomagnetic treatment was not fully apparent. The quenched specimens were subjected to low temperature tempering at 100 and 200°C with a holding time of 2 hours, followed by cooling in air. Prior to the experiments, the specimens were straightened and also ground along the contour and along the surface. Further experiments were carried out on specimens which prior to heating were ground and then quenched whilst inside punches. As a result of this the mechanical properties improved. Fig.3 shows the mechanical properties (HRC, σ_b , kg/mm², ψ , δ , % vs. degree of deformation, %) of the steel 37KhN3A after thermomechanical treatment in accordance with the following regimes: 1 - heating to 930°C, deformation (80% reduction), immediate quenching, tempering at 100°C; 2 - same as (1) except that tempering

Card 2/4

Strengthening of alloyed ...

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S/129/61/000/008/014/015
E073/E535

was at 200°C; 3 - heating to 930°C followed by cooling down to 470°C, deformation and tempering at 100°C; 4 - same as (3), tempering at 300°C. For comparison the appropriate values obtained by ordinary heat treatment are shown by a horizontal line with a shaded area (at the left-hand side of the plot). The following conclusions are arrived at:

1. After thermomechanical treatment both steels showed stable UTS values of 245-255 kg/mm² with relative contractions of 25-30%.
 2. The high mechanical properties after thermomechanical treatment are attributed to the high degree of dispersion and also to the fact that some structural elements are oriented.
 3. From the technological point of view, the thermomechanical treatment with forming at temperatures above Ac₃ are favourable; such treatment yields an optimum combination of strength and ductility.
 4. Application of a magnetic field during austenite-martensite transformation leads to more uniform mechanical properties and a slight increase in strength.
- There are 3 figures and 2 Soviet references.

Card 3/4

L 18320-65 ENT(m)/EWA(d)/T/EWP(t)/EWP(b) ASD(m)-3 MJW/JD

ACCESSION NR: AR.1047534

S/0277/64/000/008/0009/0009

SOURCE: Ref. zh. Mashinostr. mat., konstr. i raschet detal. mash. Ctd. vy*p., Abs. 3.48.58 B

AUTHOR: Astaf'yeva, Ye. V.; Sy*soyeva, V. S.; Tsy*pkina, Ye. D.; Chumak, G. A.

TITLE: The problem of the use of high strength steels 4

CITED SOURCE: Sb. Legirovaniye staley. Kiyev, Gostekhizdat USSR, 1963, 14-20

TOPIC TAGS: high strength steel, heat treatment⁸, work hardening/
steel 45KhNMFA, steel 40KhNVA, steel 37KhNZA

TRANSLATION: Methods for increasing the static and cyclical strength of high strength steels by heat treatment and work hardening are surveyed. An investigation of the effect of thermomechanical treatment austenitizing at 930-950°C, partial cooling to 720-600°C, deformation of 25-50%, hardening, tempering at 1200°C on the strength of 45KhNMFA, 40KhNVA, and 37KhNZA steels showed that strength was

Card 1/2

L 18320-65
ACCESSION NR: ARI4047534

increased by 25-30 kg/mm² compared to conventional heat treatment.

SUB CODE: MM

ENCL: 00

Card 2/2

ASTAF'YEVA, Ye.Ya.

Degree of ionicity of the chemical bond of halides and
internuclear distances. Uch. zap. Mord. gos. un. no.27:
19-21. '63. (MIFA 19:1)

ASTAF'YEVA-URBAYTIS, K.A.

Stratigraphic importance of Apsheron Cardiidae in Turkmenia.
Vest.Mosk.un.Ser.4: Geol. 17 no.6:64-70 N-D 62. (MIRA 16:1)

1. Mizey zemlevedeniya Moskovskogo gosudarstvennogo universiteta.
(Turkmenistan--Cardiidae, Fossil)

ASTAF'YEVA-URBAYTIS, K.A.

Genus *Allorisma* from the Lower Carboniferous of the Moscow Basin. Paleont. zhur. no. 1:45-55 '64. (MIRA 17:7)

1. Muзей zemlevedeniya Moskovskogo gosudarstvennogo universiteta imeni M.V.Lomonosova.

ASTAKHIN, V.V.

Reaction of organochlorosilanes with isocyanates.
 Synthesis of organosilicon urethans. V. V. Astakhin,
 I. P. Loshakov and S. A. Mikhalev (V. I. Lenin Institute
 of Organic Chemistry, Moscow, U.S.S.R.)
 Zh. Obshch. Khim. 1967, 37, 1011-1012; English transl. in
 Russ. Chem. Revs. 1967, 36, 1011-1012.

4.6 g Mg was added to 100 ml of a 10% solution of SiCl₄ in
 hexane, refluxing 215° for 1 hr. The solution was cooled to 140°, 0.3985 g
 (0.0025 mole) of 2,4-dichlorobenzonitrile (I) and 1 drop of
 phenolphthalein was added at 5° with 8% NaOH until a
 pink color formed; the org. layer and H₂O ext. of the aq.
 layer were distilled into 60 g. Et₂SiOH, b.p. 190°, n_D²⁰
 1.4390, d₄ 0.9998. The solvent, m.p. 104-105°, n_D²⁰
 1.4352. Similarly PrEt₂SiOH (b.p. 160°, n_D²⁰ 1.4352) gave
 PrEt₂SiOH, b.p. 171-2°, n_D²⁰ 1.4265, d₄ 0.8598. Heating
 43.5 g. 2,4-(OCN)₂C₆H₃Me (I) with 192 g. Et₂SiOH 1 hr.
 at 80-85°, keeping overnight, filtering, and washing the re-
 sulting solid, gave colorless powdery 2,4-(Et₂SiO)₂CNH-
 C₆H₃Me, m. 152-3° (from MePh). Similarly 43.5 g. I
 and 73 g. PrEt₂SiOH gave 2,4-(EtPrSiO)₂CNH-C₆H₃Me,
 m. 140-1° (from MeOH). BuEt₂SiOH gave similarly
 2,4-(EtBuSiO)₂CNH-C₆H₃Me, m. 104-6° (from MePh).
 All the urethans were readily hydrolyzable. G. M. K.

ASTAKHIN, V.V., Cand Chem Sci -- (diss) "Synthesis and study of ~~the~~ reactions of organomonohydroxysilans^e and organodihydroxysilans^e with isocyanates." Mos, 1958, 15 pp (Mos Order of Lenin Chem Tech Inst im D.I. Mendeleev) 150 copies (PL, 23-58, 10?)

5 (2,3)
AUTHORS:

Astakhin, V. V., Losev, I. P.,
Andrianov, K. A.

SOV/79-29-3-32/61

TITLE:

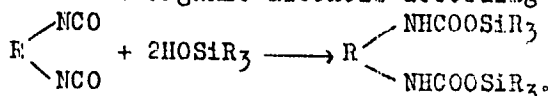
On the Reaction of the Organomonohydroxysilanes With
Isocyanates (Synthesis of the Organosilicon Urethans)
[O reaktsii organomonogidroksisilanov s izotsianatami
(Sintez kremneorganicheskikh uretanov)]

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 3, pp 904-907 (USSR)

ABSTRACT:

It is known from publications that the reaction of the organic alcohols with isocyanates proceeds without separation of by-products. A. Würtz (Ref 1) was the first scientist who proved that the reaction is accompanied by a migration of the hydrogen atom of the hydroxyl group to the nitrogen atom of the isocyanogen group. The authors found (Ref 2), that the trialkyl hydroxysilanes react in the same way with the diisocyanates as with the organic alcohols according to the scheme:

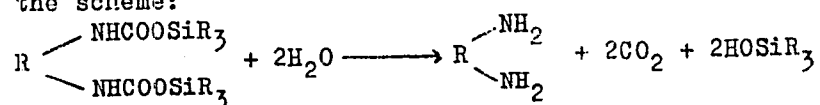


Card 1/2

The compounds obtained were called "organosilicon urethans".

On the Reaction of the Organomonohydroxysilanes With SOV/79-29-3-32/61
 Isocyanates (Synthesis of the Organosilicon Urethans)

They are white, crystalline products soluble in benzene, toluene and ether. The initial organomonohydroxysilanes must not contain water because otherwise polyureas would form (Scheme 2). The organosilicon urethans readily undergo hydrolysis, already with water and without catalysts. In order to prove the structure of the urethans their hydrolytic cleavage reaction was investigated more thoroughly. On the basis of the investigation of the hydrolysis products the cleavage reaction of the organosilicon urethans was found to proceed according to the scheme:



Thus three organosilicon urethans hitherto not described were synthesized and their structure was determined. There are 3 references, 1 of which is Soviet.

ASSOCIATION: Vsesoyuznyy elektrotekhnicheskiy institut imeni V. I. Lenina
 (All-Union Electrotechnical Institute imeni V. I. Lenin)

SUBMITTED: January 24, 1958
 Card 2/2

SOV/79-29-8-56/81

5(3)

AUTHORS:

Andrianov, K. A., Astakhin, V. V.

TITLE:

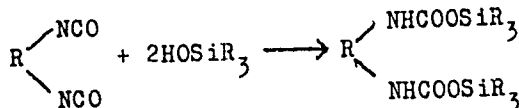
On the Reaction of Organosilico Urethanes and Monohydroxysilanes With Alcohols

PERIODICAL:

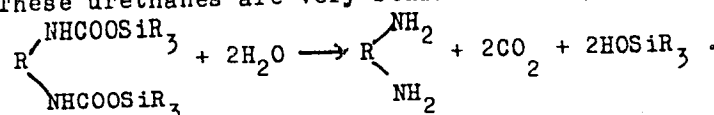
Zhurnal obshchey khimii, 1959, Vol 29, Nr 8, pp 2698 - 2701 (USSR)

ABSTRACT:

As the authors have already shown (Ref 1) the reaction of the trialkylhydroxysilanes with diisocyanates takes place without any by-products. In this process the hydrogen atom of the hydroxyl group of trialkylhydroxysilane migrates to the nitrogen atom of the isocyanate group while organosilico urethanes are formed:



These urethanes are very sensitive to hydrolysis with water:



Card 1/3

On the Reaction of Organosilico Urethanes and Mono-
hydroxysilanes With Alcohols

SOV/79-29-8-56/81

The present paper shows that these urethanes do not only react with water but also with alcohols while forming a diamine, a trialkyl-substituted ester of orthosilicic acid and of carbon dioxide. The formation of these products may take place as follows: organosilico urethane reacts with very small quantities of water in the alcohol and forms dicarbamic acid and trialkyl hydroxysilane. The unstable dicarbamic acid decomposes into CO_2 and diamine while silane reacts with alcohol and forms the trialkyl-substituted ester of orthosilicic acid (Scheme 3). In order to prove this mechanism it has to be found out whether the trialkylhydroxysilanes can react with alcohols (without catalysts as well). The experiments showed that these silanes react with alcohols in the presence of diamine, but also without diamine, according to the scheme

$\text{R}_3\text{SiOH} + \text{HOR}'' \longrightarrow \text{R}_3\text{SiOR}'' + \text{H}_2\text{O}$. The reaction was carried out with methyl-, propyl-, butyl-, and isoamyl alcohol. The properties of the new compounds are given in the table. Ex-

Card 2/3

On the Reaction of Organosilico Urethanes and Mono-
hydroxysilanes With Alcohols

SOV/79-29-8-56/81

perimental data prove the above-mentioned reaction mechanism
of urethanes with alcohols. There are 1 table and 1 Soviet
reference.

ASSOCIATION: Vsesoyuznyy elektrotekhnicheskiy institut imeni V. I. Lenina
(All-Union Institute of Electrical Engineering imeni V. I. Lenin)

SUBMITTED: May 27, 1958

Card 3/3

5(3)

AUTHORS: Andrianov, K. A., Corresponding Member AS USSR, Astakhin, V. V. SOV/20-127-5-22/58

TITLE: Synthesis of Some Triethyl Siloxy Alkoxy Titanes

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 5,
pp 1014 - 1015 (USSR)

ABSTRACT: The compounds mentioned in the title have hitherto remained uninvestigated. The trialkyl (aryl) siloxy groups have considerable hydrolytic stability in the tetrakis-[trialkyl(aryl)siloxy]titanes which is much higher than that of the alkoxy groups bound to titanium. It is therefore of interest to investigate the properties of compounds containing simultaneously trialkyl siloxy- and alkoxy groups. Since the method described by the first author (Ref 1) is difficultly accessible the authors investigated the possibility of the synthesis mentioned in the title by a direct interaction of triethyl silanol with butyl orthotitanate or propyl orthotitanates. In contrast to the data from publications (Ref 3) according to which the reaction between butyl orthotitanate and triphenyl silanol is said to lead to a complete substitution of all butoxy groups by triphenyl siloxy groups the authors proved that in the case of the here applied substances,

Card 1/2

Synthesis of Some Triethyl Siloxy Alkoxy Titanes

SOV/20-127-5-22/58

in the presence of metallic sodium as catalyst, the reaction does not only proceed in the direction of the formation of tetrakis (triethyl-siloxy) titanium. Also products of different degrees of substitution are formed in this connection. This depends on the ratio of the reacting components. In the course of the investigation of the mentioned reaction (see Scheme) tri-(triethyl-siloxy)-butoxy-titanium (46% of the theoretically computed value), di(triethyl-siloxy)-dibutoxy titanium (34%), di(triethyl-siloxy)-dipropoxy-titanium (21%) were isolated. Table 1 shows their physical constants, yields, and analysis results. Their hydrolytic stability is being investigated. There are 1 table, and 4 references, 2 of which are Soviet.

SUBMITTED: April 16, 1959

Card 2/2

S/191/60/000/008/010/014
B004/B056

AUTHORS: Sokolov, N. N., Astakhin, V. V., Andrianov, K. A.
TITLE: Industrial Use of Benzoyl Peroxide }
PERIODICAL: Plasticheskiye massy, 1960, No. 8, pp. 48-49

TEXT: The technical regulations ТУМХП1897-49 (ТУ МКХП 1897-49) require that, because of the explosiveness of benzoyl peroxide, the proximity of fire and high temperatures as well as such dangers as might be caused by percussions or impact be avoided. For the production of СКТ(SKT) rubber, the production of МПБ(MPB) paste by mixing benzoyl peroxide dried to 2 - 4% moisture with diethylsiloxane liquid No. 2 in a ball mill was suggested in a previous paper (Ref. 6). At the zavod "Elektroprovod" (Plant "Elektroprovod") РКГМ(RKGM) wires insulated with SKT rubber were produced by means of MPB paste. In view of the fact that chemical factories pointed out the danger of working with dried benzoyl peroxide, the authors produced a paste directly from commercial benzoyl peroxide containing 35% of water. The organosilicon liquid displaces the water, so

Card 1/2

Industrial Use of Benzoyl Peroxide

S/191/60/000/008/010/014
B004/B056

that the latter may easily be removed. The new paste MPB-1 contains 45.7 - 48.7% benzoyl peroxide and 2.1 - 3.5% water. A comparison between the hardening of KГMC-1 (KGMS-1) sealing compound with that of benzoyl peroxide and MPB-1 led to almost the same results. Also vulcanization of SKT rubber with MPB and MPB-1 gave rubber having the same properties. Positive results were obtained from MPB-1 also in the hardening of MBK-1 (MBK-1) and MBK-3 (MBK-3). Mention is made of the use of benzoyl peroxide for hardening sealing compounds of the types KГMC-2 (KGMS-2), K-30 (K-30), K-31 (K-31), and K-33 (K-33) containing styrene or butylmethacrylate. There are 6 references: 5 Soviet and 1 British. ✓

Card 2/2

57436

S/191/60/000/010/014/017
E004/B060

53700

AUTHORS: ~~Astakhin, V. V.~~ Ganina, T. N., Gribanova, O. I., Skolov,
N. N., Karustaleva, Ye. N.

TITLE: Methods of Producing n-Tetrabutoxy Titanium

PERIODICAL: Plasticheskiye massy, 1960, No. 10, pp. 62-63

TEXT: The authors wanted to work out a technical procedure of producing n-tetrabutoxy titanium which is needed for electric insulating varnish. After a survey of data contained in literature a report is made of the authors' own experiments. The initial substances were pure $TiCl_4$ (ТУ 2553-51 (TU 2553-51)) and n-butyl alcohol, boiling point 114-116°C. $TiCl_4$ was dropped in under exclusion of air and under water cooling into the alcohol. Neutralization was performed with anhydrous ammonia. The yield amounted to 84.0%, even when the temperature amounted to 23-27°C in the reaction vessel. The authors conclude that a more intense cooling to lower temperatures is technically not necessary. The raw product contained low-molecular butoxy titanoxane, some chlorine, and traces of iron.

Card 1/2

Methods of Producing n-Tetrabutoxy Titanium

87438

S/191/60/000/010/014/017
B004/B060

A purification, however, proved to be superfluous, since this product was equivalent to the pure product as a varnish addition. Finally, experiments made in a 60-l enamel vessel are described. The tubes of the apparatus were made of lead, the cocks of faolite. The yields amounted to 57.5-72.5%. These low results are explained by an insufficient filling of the large vessel. There are 1 figure, 3 tables, and 18 references: 6 Soviet, 2 US, 1 Belgian, 6 British, 1 Dutch, 1 French, and 3 German.

Card 2/2

80486

S/079/61/031/001/020/025
B001/H066

S-3700

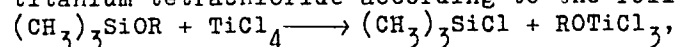
AUTHORS: Andrianov, K. A., Astakhin, V. V., and Sukhanova, I. V.

TITLE: Synthesis of Halogen Esters of Orthotitanic Acid

PERIODICAL: Zhurnal obshchey khimii, 1961, Vol. 31, No. 1, pp. 232 - 233

TEXT: In view of data indicating the possibility of a cleavage of the SiOSi bond by $TiCl_4$, the authors intended to synthesize alkoxy titanium

chlorides, proceeding from trialkyl-alkoxy silanes and titanium tetrachloride. Trimethyl-alkoxy silanes were found to react vigorously with titanium tetrachloride according to the following equations:



$2(CH_3)_3SiOR + TiCl_4 \longrightarrow 2(CH_3)_3SiCl + (RO)_2TiCl_2$. The authors were not able to substitute the alkoxy group for more than two chlorine atoms in $TiCl_4$, at a molar ratio of $TiCl_4 : (CH_3)_3SiOR = 1 : 3$, irrespective of a prolonged heating of the reaction mass. The constants of the resultant alkoxy titanium chlorides are tabulated. The method described is of

Card 1/2

Synthesis of Halogen Esters of
Orthotitanic Acid

841,86

S/079/61/031/001/020/025
BC01/B066

preparative importance. The experiments were carried out under exclusion of atmospheric moisture and with carefully dried reagents. The following compounds were synthesized: ethoxy titanium trichloride, diethoxy titanium dichloride, butoxy titanium trichloride, and isopropoxy titanium trichloride. There are 1 table and 7 references: 7 Soviet, 3 British, 1 US, and 1 Indian. X

ASSOCIATION: Vsesoyuznyy elektrotekhnicheskiy institut imeni V. I. Lenina
(All-Union Electrotechnical Institute imeni V. I. Lenin)

SUBMITTED: February 15, 1960

Card 2/2

53700

27909

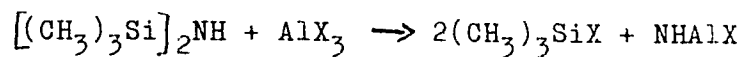
S/079/61/031/010/009/010
D228/D302

AUTHORS: Andrianov, K.A., Astakhin, V.V., Kochkin, D.A., and Sukhanova, I.V.

TITLE: Reaction of hexamethyldisilazane with the halides of aluminum and titanium

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 10, 1961, 3410-3411

TEXT: Previous work has shown the possibility of obtaining chlorosilane from aminosilane and HCl, so the authors studied and devised a method of synthesizing trimethylchloro-, trimethylbromo- and trimethyliodosilane in accordance with the scheme:



Card 1/2

Reaction of hexamethyldisilazane...

27909
S/079/61/031/010/009/010
D228/D302

Trimethylchlorosilane was prepared by distilling hexamethyldisilazane with $TiCl_4$ (yield 88%) or $AlCl_3$ (yield 75.7%). Substituting $AlBr_3$ for $AlCl_3$ the same procedure was also used to obtain trimethylbromosilane (yield 76.1%). In the case of trimethyliodosilane (yield 70%) hexamethyldisilazane was similarly reacted with powdered Al, benzene and crystalline I_2 . In conclusion it is stated that this technique is suitable for the general preparation of compounds of the type R_3SiX . There are 2 non-Soviet-bloc references.

ASSOCIATION: Vsesoyuznyy elektrotekhnicheskiy institut im. V.I. Lenina (All-Union Electrotechnical Institute im. V.I. Lenin)

SUBMITTED: October 31, 1960

Card 2/2

LOSEV, V.B.; ASTAKHIN, V.V.

Obtaining semifinished material for the K-58 varnish. Biul.tekh.-ekon.-
inform.Gos.nauch.-issl.inst.nauch. i tekh.inform. no.7:22-23 '62.
(Polymers) (Varnish and varnishing) (MIRA 15:7)

S/062/62/000/008/012/016
B117/B180

AUTHORS: Andrianov, K. A., Astakhin, V. V., and Sukhanova, I. V.

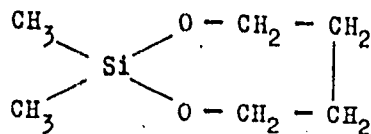
TITLE: Reaction of alkyl-phenyl-amino silanes with boric acid, phosphoric acid and glycols

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 8, 1962, 1478-1479

TEXT: Trialkyl-phenyl-amino silanes were found to react easily with boric and ortho-phosphoric acid, giving organo-silicon esters. With ortho-phosphoric acid and boric acid respectively the following were obtained: tris-(triethyl-silyl) phosphate, b.p. 180°C (4 mm. Hg); n_D^{20} 1.4400; d_4^{20} 0.9700; 70% yield; tris-borate, b.p. 157-160°C (5 mm. Hg); n_D^{20} 1.4372; d_4^{20} 0.8946; 95% yield. It was also found that dialkyl-diphenyl-amino silanes give cyclic dialkyl silane diole esters with glycols. 2,2-dimethyl-1,3-dioxa-2-sila cycloheptane: ✓

Card 1/2

Reaction of alkyl-phenyl-amino ...

S/062/62/000/008/012/016
B117/B180

b.p. 140°C (760 mm Hg); n_D^{20} 1.4252; d_4^{20} 0.9652; was synthesized from dimethyl-diphenyl-amino silane and 1,4-butanediene in 54% yield. ✓

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental Organic Compounds of the Academy of Sciences USSR). Vsesoyuznyy elektrotekhnicheskii institut im. V. I. Lenina (All-Union Electrotechnical Institute imeni V. I. Lenin)

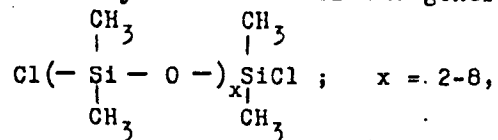
SUBMITTED: February 14, 1962

Card 2/2

S/062/62/000/012/006/007
B117/B101

AUTHORS: Andrianov, K. A., Astakhin, V. V., and Pyzhov, V. K.
TITLE: Synthesis and properties of α,ω -dihydroxy-dimethyl siloxane
PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 12, 1962, 2243-2245

TEXT: α,ω -dichloro-dimethyl siloxanes of the general formula



was hydrolyzed in an alkaline medium to produce α,ω -dihydroxy-dimethyl siloxanes with a different number of dimethyl siloxane groups. At temperatures between -4 and -5°C , high yields of α,ω -dihydroxy-dimethyl siloxane were obtained in all cases. The resulting compounds were of comparatively high thermal resistivity and could be distilled in vacuo several times without noticeable formation of polymers. The following

Card 1/3

Synthesis and properties of...

S/062/62/000/012/006/007
B117/B101 α,ω -dihydroxy-dimethyl siloxanes were synthesized:

| Compound | b.p., °C (p mm Hg) | d_4^{20} | n_D^{20} | MR | yield % |
|---|-----------------------|------------|------------|--------|---------|
| HO [Si(CH ₃) ₂ O] ₃ H | 79-82 (2) | 0.9999 | 1.4089 | 59.42 | 79.2 |
| HO [Si(CH ₃) ₂ O] ₄ H | 97-100 (2) | 0.9886 | 1.4054 | 78.38 | 77 |
| HO [Si(CH ₃) ₂ O] ₅ H | 104-106 (1.5) | 0.9914 | 1.4089 | 96.90 | 80.5 |
| HO [Si(CH ₃) ₂ O] ₆ H | 119-120 (2) | 0.9916 | 0.4099 | 115.1 | 82.2 |
| HO [Si(CH ₃) ₂ O] ₇ H | 130-135 (1) | 0.9891 | 1.4067 | 133.52 | 80.5 |
| HO [Si(CH ₃) ₂ O] ₈ H | 143-145 (2) | 0.9912 | 1.4090 | 152.4 | 79.5 |
| HO [Si(CH ₃) ₂ O] ₉ H | 158-161 (2) | 0.9921 | 1.4088 | 170.66 | 83 |

ASSOCIATION: Elektrotekhnicheskiy institut im. V. I. Lenina (Electro-technical Institute imeni V. I. Lenin); Institut elemento-organicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental Organic Compounds of the Academy of Sciences USSR); Institut khimii Sovnarkhoza Arm.SSSR (Institute of Chemistry of the Sovnarkhoz of ArSSR)

Card 2/3