

79-28-4-53/60

AUTHORS: Koretskaya, N. I., Utkin, L. M.

TITLE: The Alkaloids in Peganum harmala L. (Alkaloidy Peganum harmala L.) II. On the Structure of Two New Alkaloids (II. O stroynii dvukh novykh alkaloidov)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 4, pp. 1067-1089 (USSR)

ABSTRACT: In a former article (Ref 1) the authors reported on the isolation of peganine (formula I), harmine and 2 new bases which were named alkaloid Nr 1 ($C_{11}H_{10}ON_2$) and alkaloid Nr 2 ($C_{11}H_{10}O_2N_2$) from the overground parts of the African rue (Peganum harmala L.). In the present article the investigation of the structure of the newly isolated compounds is continued. The authors found that in the reduction of alkaloid Nr 1 with lithium-aluminum-hydride dihydro-desoxy peganine ($C_{11}H_{14}N_2$) is formed (Refs 2, 3). The presence of a band at 16 cm^{-1} in the ultra-red absorption spectrum (which is the band of the carbonyl group in acid amides) indicates that with this compound an oxo compound of desoxy peganin is concerned (Refs 2, 4). According to its properties and composition alkaloid Nr 1 agreed with 2,3-trimethylene quinazolone

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The Alkaloids in *Peganum harmala* L. II. On the Structure of Two New Alkaloids

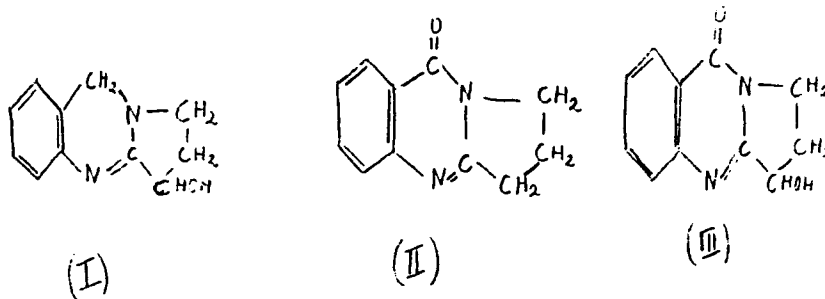
(4) formula II) described in technical publications (Ref 4). Their identity was proved by direct comparison of the two substances. The ultra-red absorption spectrum of alkaloid Nr 2 indicates that this compound contains a hydroxyl group besides an acid amide-like bound carbonyl group. This made possible the conclusion that alkaloid Nr 2 is an oxo-derivative of peganine, namely the 1,2,3-(α -hydroxy trimethylene)-quinazoline (4) (formula III). The racemate of this compound which forms during oxidation of d,1-peganine with hydrogen peroxide is described in technical publications. (Refs 4, 5). 1,2,3-(α -hydroxy trimethylene)-quinazoline (4) synthesized by the authors according to an analogous rule from 1-peganine proved to be identical with alkaloid Nr 2. By means of these investigations it was demonstrated that besides peganine the overground parts of the African rue contain compounds which are either decomposition products of peganine, or preliminary stages in the formation of this alkaloid in the plant. The part played by the mentioned compounds in the conversion processes of peganine may probably be explained by the investigation of the interactions of all three derivatives of 2,3-trimethylene

Card 2/4

79-28-4-53/60

The Alkaloids in *Peganum harmala* L. II. On the Structure of Two New Alkaloids

quinazoline in various stages of the growing of the plant.



It is interesting that in the reduction of 2,3-(α -hydroxy trimethylene)-quinazolinone (4) with zinc in diluted hydrochloric acid 2,3-trimethylene-quinazolinol (4) and desoxy peganine was obtained.

The reactions mentioned in this work are described in detail in an experimental part. There are 6 references, 1 of which is Soviet.

Card 3/4

79-28-4-53/60

The Alkaloids in *Peganum harmala* L. II. On the Structure of Two New Alkaloids

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S. Ordzhonikidze
(All-Union Chemical Pharmaceutical Scientific Research Institute imeni S. Ordzhonikidze)

SUBMITTED: April 13, 1957

Card 4/4

SOV/72-22-11-43/55

AUTHORS: Labenskiy, A. S., Gerasimenko, I. I., Utkin, L. M.

TITLE: On the Glucoalkaloid of the Plant Solanum Megacarpum Koidz, a Big-Fruit Nightshade (O glyukoalkaloide rasteniya Solanum megacarpum Koidz(paslen krupnoplodnyy))

PERIODICAL: Zhurnal obshchey khimii, 1950, Vol 28, Nr 11, pp 3120-3122 (USSR)

ABSTRACT: One of the modern natural sources of steroid compounds are the various types of nightshades that contain glucoalkaloids of steroid nature. The separation of the glucoalkaloids from the leaves and the upper shoots of this plant during the ripening of the fruit was carried out according to Kuhn (Kun, Ref 1) with the glucoalkaloid $C_{49}H_{81}O_2N$ (melting point $259-260^{\circ}$) being isolated. Its properties differ from those already known so that it was given the new term "megacarpine". It forms a sulfate that is difficult to dissolve in water. In the hydrolytic cleavage with hydrochloric acid in methanol a chloro hydrate of the aglucone $C_{27}H_{45}O_2N.HCl.5H_2O$ (melting point $298-299^{\circ}$) was obtained. Its empirical formula and its

Card 1/1₂

SOV/79-28-11-48/55

On the Glucoalkaloid of the Plant *Solanum Megacarpum* Koidz, a Big-Fruit
Nightshade

melting point correspond to those of "tomatidine" (Ref 2). The obvious decrease of the melting point of the mixture of these two compounds and the deviation of the specific optical rotation of the obtained aglucone from that of "tomatidine" is in contrast to the identity especially as in the former there is no double bond (Refs 3, 4). The nature of the sugar compounds formed in the hydrolysis of megacarpine was determined by paper chromatography. On this occasion glucose, galactose, and xylose were found, which corresponds to the composition of "tomatine" and "demissine" (Refs 2, 5). The megacarpine thus consists of 4 molecules of simple sugar types. The optical rotation of the sum of all sugar compounds obtained in the hydrolysis amounted to $+43.06^{\circ}$, which approximately corresponds to that obtained with the mixture of 2 molecules xylose, 1 molecule galactose and 1 molecule glucose. There are 8 references.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S. Ordzhonikidze (All Union Scientific Chemo-Pharmaceutical Research Institute imeni S. Ordzhonikidze)

Card 2/12

SHCHUKINA, M.N., prof.; MASHKOVSKIY, M.D., prof.; PERSHIN, G.N., prof., laureat Stalinskoy premii, otv.red.; SERGIYEVSKAYA, S.I., prof., red.; MAGIDSON, O.Yu., prof., laureat Stalinskoy premii, red.; UTKIN, L.M., prof., red.; GROZDEVA, Ye.I., red.; LYUDKOVSKAYA, N.I., tekhn.red.

[Chemistry and medicine] Khimiia i meditsina. Otv.red. G.N. Pershin. Moskva, Medgiz. No.9. [Aminazine] Aminazin. 1959. 241 p. (MIRA 12:6)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut. 2. Zaveduyushchaya laboratoriyey protivotuberkuleznykh soyedineniy Vsesoyuznogo nauchno-issledovatel'skogo khimiko-farmatsevticheskogo instituta imeni S.Ordzhonikidze (for Shchukina). 3. Zaveduyushchiy laboratoriyey otdela farmakologii Vsesoyuznogo nauchno-issledovatel'skogo khimiko-farmatsevticheskogo instituta imeni S.Ordzhonikidze (for Mashkovskiy).

(CHLORPROMAZINE)

CHETVERIKOVA, L.S.; KICHENKO, V.I.; UTKIN, L.M.

Investigation of plants native to the U.S.S.R. for their saponin
content. Trudy VILAR no. 11:202-228 '59. (MIRA 14:2)
(SAPONINS) (BOTANY, MEDICAL)

AUTHORS: Serova, N. A., Utkin, L. M.

SOV/79-29-1-71/74

TITLE: On Sapogenin in the Roots of the Patrinia Plant (O sapogenine korney patrinii)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 1, pp 336-338 (USSR)

ABSTRACT: On the search for plants with steroid compounds the authors were interested in the plant Patrinia intermedia Roem. et Schult. A. M. Sokol'skaya (Ref 1) found that its saponin content is rather high. The sapogenin obtained from the latter was therefore regarded to be steroid and a little substantiated structure formula was suggested. Since several data in the paper mentioned were doubtful this plant was once more investigated. Two root samples of the plant collected in different regions of the USSR delivered exactly the same results of investigation. Saponin was obtained by treatment of the roots with methanol and by precipitation from the methanol extract with ether. The yield corresponded to that found by Sokol'skaya. In the case of hydrolysis of saponin in heating with diluted sulfuric acid the result was sapogenin which formed a difficultly soluble sodium salt which refers to its acid character. Sapogenin which is separated from the sodium salt

Card 1/2

On Sapogenin in the Roots of the Patrinia Plant

SOV/79-29-1-71/74

has the composition $C_{30}H_{48}O_3$. Its properties as well as those of its derivatives correspond to those of oleanolic acid and its derivatives. The infrared absorption spectra of the crystalline sapogenin acetate and of the acetate of oleanolic acid are in complete agreement. The method applied by the authors to the plants was the same method as employed by Sokol'skaya. Also the yields in sapogenin agreed quite well although the purification was carried out by means of sodium salt. This is why the authors tend to assume that sapogenin as obtained Sokol'skaya was no sapogenin but oleanolic acid. This is also confirmed by the analyses data of the paper mentioned (Ref 1) which do better correspond to formula $C_{30}H_{48}O_3$ than to the formula given by the author: $C_{21}H_{32}O_2$. There are 4 references, 1 of which is Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S. Ordzhonikidze (All-Union Scientific Chemo-Pharmaceutical Research Institute imeni S. Ordzhonikidze)

SUBMITTED: November 25, 1957
Card 2/2

5 (3)
AUTHORS: Yakovleva, A. P., Proskurnina, N. F., Utkin, L. K. 307/79-29-3-61/61

TITLE: On the Alkaloids of Ammothamnus Songoricus (Ob alkaloidakh Ammothamnus songoricus)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 3, pp 1042-1044 (USSR)

ABSTRACT: The plant Ammothamnus songoricus which grows in Central Asia was discovered by Massagetov as an alkaloid carrier. The whole part of the plant growing above the ground was subjected to the extraction. All alkaloids in it (1%) were extracted with ether and chloroform. The ether fraction consisted almost completely of Sofokarpin. An alkaloid of the melting point 198-200° which crystallizes with one molecule water was precipitated from the chloroform fraction. The ultimate analysis corresponds to the empirical formula $C_{15}H_{24}O_2N_2 \cdot H_2O$. One methylimide group does not contain the alkaloid. Only the perchlorate of the melting point 219-220°, and the picrate of the melting point 215° (under decomposition) as well as the iodine methylate could be obtained in crystalline state of the salts. The authors' assumption that the separated alkaloid represents an

Card 1/3

SOV/79-29-3-61/61

On the Alkaloids of *Ammodramus Songoricus*

N-oxide of matrine was confirmed by the reduction of the base to matrine, by zinc dust in an acid medium. This oxide exists according to H. Kondo (Ref 1) and E. Ochiai (Ref 2) in two hydrate forms. On subjecting the chloroform fraction to chromatography over Al_2O_3 several fractions with different melting points, 153-207°, were separated. The base of the melting point 207° corresponds according to its properties to the N-oxide of the matrine described by Ochiai (Ref 2). After storage its melting point is reduced to 198-200°. The other fractions, with lower melting points, have all the same specific rotary power, contain a crystallization water and are transformed into matrine with a good yield during the reduction by zinc dust in an acid medium. The matrine was oxidized by the authors with hydrogen peroxide in order to compare the alkaloid obtained by them immediately with the N-oxide of matrine. The produced N-oxide of matrine was like the base separated from the plant obtained in various forms with melting points from 153 to 188°. The results obtained by the authors confirm thus the identity of the alkaloid separated by them with the N-oxide of matrine. There are 1 table and 3 references; 1 of which is

Card 2/3

SOV/79-29-3-61/61

On the Alkaloids of Ammothamnus Songoricus

Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S. Ordzhonikidze (All-Union Scientific Chemicopharmaceutical Research Institute imeni S. Ordzhonikidze)

SUBMITTED: February 6, 1958

USCOMM-IC-60,887

Card 3/3

5 (3)

AUTHORS:

Danilova, A. V., Utkin, L. M.,
Kozyreva, G. V., Syrneva, Yu. I.

SOV/79-29-7-72/83

TITLE:

A New Alkaloid Which Is an Isomer of Platyphyllin (Novyy
alkaloid, izomernyy platifillinu)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 7, pp 2432-2436 (USSR)

ABSTRACT:

Platyphyllin bitartrate is prepared from the broadleaved Senecio platyphyllus. As to its chemical structure the platyphyllin is a diester of platynecin and the senecinic acid (Ref 1). In the processing of the industrially manufactured alcoholic mother liquids a new base which had been called neoplatyphyllin was obtained on separation and recrystallization of platyphyllin bitartrate. As to composition and functional groups, this new base is identical with platyphyllin. Their basicity and infrared absorption spectra (Fig) show little difference, but as far as the physical properties are concerned, the neoplatyphyllin and its salts differ from platyphyllin and its salts. The bitartrate of neoplatyphyllin shows well pronounced cholinolytic and spasmolytic properties. As to activity and mode of action it is closely related with platyphyllin, but it is twice as toxic. Alkaline and acid hydrolysis of both compounds yield the same

Card 1/3

A New Alkaloid Which Is an Isomer of Platyphyllin

SOV/79-29-7-72/83

products. The authors assume that the difference between both bases is due to the steric configuration of the acid component of their molecules because, as is known, the "necinic" acids with double bonds show in addition to the optical isomerism also the geometrical one (Ref 2). The structure of the senecinic acid corresponds with the formula (I) (Ref 3). In order to investigate further the properties of both compounds the alkaloids were reduced with LiAlH_4 . The resultant trivalent alcohols had to possess structure (II), according to the structure of the senecinic acid. The chemical and spectroscopic results obtained confirm the assumption of the authors that the different spatial configuration of the esterifying acids is the cause of the difference between neoplatyphyllin and platyphyllin. The formation of a trivalent alcohol from the senecinic acid, by treating it with alkali liquor, which is qualitatively different from the alcohols obtained by direct reduction of the alkaloids, confirms the observation that the "necinic" acids separated by alkaline hydrolysis of the alkaloids of the species Senecio possess a configuration which differs from that in which they enter into the composition of the alkaloid molecules. There are 1 figure

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A New Alkaloid Which Is an Isomer of Platyphyllin

SOV/79-29-7-72/83

and 3 references, 2 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S. Ordzhonikidze (All-Union Scientific Chemicopharmaceutical Research Institute imeni S. Ordzhonikidze)

SUBMITTED: May 25, 1958

Card 3/3

RUBTSOV, M.V., prof., otv. red.; PERSHIN, G.N., prof., zam. otv. red.;
MAGIDSON, O.Yu., prof., red.; MASHKOVSKIY, M.D., prof., red.;
UTKIN, L.M., prof., red.; RUZHENTSEVA, A.K., prof., red.;
SHCHUKINA, M.N., prof., red.; BAYCHIKOV, A.G., kand. tekhn. nauk,
red.; MIKHALEV, V.A., kand. khim. nauk, red.; RYAZANTSEV, M.D.,
kand. tekhn. nauk, red.; SUVOROV, N.N., kand. khim. nauk, red.;
PIYASHKEVICH, A.M., st. nauchnyy sotr., red.

[Basic trends in the work of the S.Ordzhonikidze All-Union Chemico-pharmaceutical Scientific Research Institute; survey of its activity from 1920 to 1957] Osnovnye napravleniia rabot VNIKhFI; obzor deiatel'nosti za 1920-1957 gg. Moskva, 1959. 649 p. (MIRA 15:5)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut.

(CHEMISTRY, MEDICAL AND PHARMACEUTICAL)

5.3900

77415
307/78-30-1-76/78

AUTHORS: Danilova, A. V., Utkin, L. M.

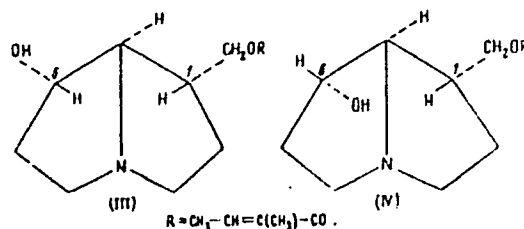
TITLE: Structure of the Alkaloid Macrophylline

PERIODICAL: Zhurnal obshchey khimii, 1960, Nr 1, pp 345-348
(USSR)

ABSTRACT: The authors have established that macrophylline (makrofillin), $C_{13}H_{21}O_3N$, isolated from *Senecio macrophyllus* [Danilova, A. V., Utkin, L. M., Massagetov, P. S., Zhur. obshchey khim., 25, 831 (1955)] belongs to the alkaloid of the "d-pseudoheliotridane" series and has one of two structures:

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Structure of the Alkaloid Macrophylline

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SOV/79-30-1-76/78

Macronecine (makronetsyn) (also prepared earlier [loc. cit.]), and aminoglycol ($\text{C}_8\text{H}_{15}\text{O}_2\text{N}$) formed by hydrolysis of macrophylline was found to be a diastereomer of platynecine and dihydroxyheliotridane, which have hydroxyl groups in positions 1 and 6 of the pyrrolizidine ring. The following derivatives were synthesized: desoxychlorohydromacrophylline

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Structure of the Alkaloid Macrophylline

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S 7/79-30-1-76/78

(a colorless liquid, $[\alpha]_D^{29} (-2.93^\circ)$, R_f 0.76 ascending system butanol- CH_3COOH -water) and its picrate (mp 155-156°) macrophylline picrolonate (mp 180-182°), macrophylline picrate mp 171-172°), and methiodide mp 292-294°). There are 9 references, 6 Soviet, 1 German, 1 U.K., 1 U.S. The U.S. and U.K. references are: Adams, Hamlin, J. Am. Chem. Soc., 64, 2597 (1942); L. Culvenor, L. W. Smith, Austral. J. Chem., 10, 464 (1957).

ASSOCIATION:

S. Ordzhonikidze All-Union Scientific-Research Chemical-Pharmaceutical Institute (Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S. Ordzhonikidze)

SUBMITTED:

December 23, 1958

Card 3/3

DANILOVA, A.V.; KORETSKAYA, N.I.; SHVETS, Z.I.; UTKIN, L.M.

New method for obtaining platyphylline from Senecio platyphyllus.
Med.prom. 14 no.4:28-30 Ap '60. (MIRA 13:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevti-
cheskiy institut imeni S. Ordshonikidse.
(PLATYPHYLLINE)

PROSKURNINA, N.F.; UTKIN, L.M.

dl-stachydrine in Lagochilus. Med. prom. 14 no.9:30-31 S '60.
(MIRA 13:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy
institut im. S. Ordzhonikidze. (LAGOCHILUS)
(STACHYDRINE)

GRABILINA, G.O.; UTKIN, L.M.

Acetone derivatives of *d*-gluconic acid and its γ -lactone. Zhur.
ob. khim. 30 no.9:3126-3128 S '60. (MIRA 13:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy
institut imeni S. Ordzhonikidze.
(Gluconic acid)

SEREBRYAKOVA, A.P.; FILITIS, L.N.; UTKIN, L.M.

Lignans from junipers (*Juniperus communis*) of the Soviet Union. Zhur.
ob.khim. 31 no.5:1731-1734 My '61. (MIPA 14:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy
institut imeni S.Ordzhonikidze.
(Lignans) (Juniper)

DANILOVA, A.V.; KORETSKAYA, N.I.; UTKIN, L.M.

Structure of "renardin" alkaloid (from Senecio renardi). Part 2.
Zhur. ob. khim. 31 no. 11:3815-3818 N '61. (MIRA 14:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy
institut imeni S. Ordzhonikidze.
(Alkaloids)

BRUTKO, L.I.; UTKIN, L.M.

New methods for the separation of alkaloids. Med. prom.
15 no.11:53-56 N '61. (MIRA 15:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsev-
tichoskiy institut imeni S. Ordzhonikidze.
(ALKALOIDS)

DANILOVA, A.V.; KORETSKAYA, N.I.; UTKIN, L.M.

New alkaloid from *Senecio othonnae* M.B. Zhur.ob.khim.

32 no.2:647-648 F '62.

(MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S.Ordzhonikidze.

(Alkaloids)

KORETSKAYA, N.I.; DANILOVA, A.V.; UTKIN, L.M.

Structure of jaconecic and jacolinecic acids. Zhur. ok. khim. 32
no. 4: 1339-1345 Ap '62. (MIRA 15:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy
institut imeni S. Ordzhonikidze.
(Jaconecic acid)

UTKIN, L.

Learn to operate under smoke conditions. Pozh.delo 8 no.7:24
Jl '62. (MIRA 15:8)

(Fire extinction)

TSYRUL'NIKOVA, L.G.; LABENSKIY, A.S.; UTKIN, L.M.

Alkaloids of the Lindelofia macrostyla plant. Zhur.ob.khim. 32
no.8:2705-2709 Ag '62. (MIRA 15:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy
institut imeni S. Ordzhonikidze.
(Alkaloids)

KORETSKAYA, N.I.; DANILOVA, A.V.; UTKIN, L.M.

Structure and interrelation between senecic and
epoxyjaconic acids. Zhur.ob.khim. 32 no.11:3823-3827
N '62. (MIRA 15:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-
farmatsevticheskiy institut imeni S. Ordzhonikidze.
(Senecic acid) (Jaconic acid)

KORETSKAYA, N.I.; UTKIN, L.M.

New alkaloid from the plants *Vinca oręata* RGL. et Schmalh. Zhur.-
ob.khim. 33 no.6:2065-2066 Je '63. (MIRA 16:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevti-
cheskiy institut imeni S.Ordzhonikidze.
(Alkaloids) (Vinca)

UTKIN, L.M.; SEREBRYAKOVA, A.P.

Flavone glycoside from *Stizolcophus balsamita* (Lam) A. Takht.
Zhur. ob. khim. 34 no.10:3496-3499 0 '64.

(MIRA 17:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy
institut imeni S. Ordzhonikidze.

KOREISHVILI, N.M.; NIKOLA, A.M.; UPKIN, L.M.

Structure of the Alkali Phosphate. Part 3: Structure of
Hydroxycyanosulfonamide. Khim. prirod. soed. 1:22-27 '55.

(MIRA 18:6)

I. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy
Institut Im. S.Ordanovicha.

UTKIN, L.M.; SEREBRYAKOVA, A.P.

Isoflavone-glycoside from Piptanthus nanus M.Pop. Khim.prirod.soed.
1:70-72 '65. (MIRA 18:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy
institut im. S.Ordzhonikidze.

~~UTKIN, M.~~

Do not forget customers. Prom.koop.no.11:18-19 N '56. (MLBA 9:12)

1. Zamestitel' zaveduyushchego sektsiyey khudozhestvennykh izdeliy univernmaga "Petrovskiy passazh."
(Art industries)

UTKIN, M., mayor

Special treatment in the battery. Voen. vest. 43 no.9:69-70
S '63. (MIRA 16:10)

(Decontamination (From gases, Chemicals, etc.)

UTKIN, N.

"One man output" index. Prom.koop no.8:14-16 Ag '55. (MIRA 9:1)

1. Nachal'nik planovo-ekonomicheskogo otdela promsoвета Estonskoy
SSR. (Labor productivity)

UTKIN, N.

Training and consultation center in Rostov-on-Don. Zhil.-kom.
khoz. ll no.2:23-24 F '61. (MIRA 14:5)

1. Zaveduyushchiy Rostovskim uchebno-konsul'tatsionnym punktom,
g. Rostov-na-Donu.
(Correspondence schools and courses)
(Rostov-on-Don--Technical education)

YELISEYEV, Anisim Vasil'yevich; PITERMAN, E.L., redaktor; UTKIN, N.A.,
redaktor; YERMAKOVA, Ye.A., tekhnicheskij redaktor.

[Tools for sharpening wood cutting instruments; guide for work
with the tools] Stanki dlia zatochki lesorubochnogo instrumenta;
rukovodstvo dlia raboty na stankakh. Moskva, Goslesbumizdat, 1954.
39 p. (MIRA 8:5)

(Saw filing)

ANDRIYEVSKIY, Aleksandr Illarionovich; UTKIN, N.A., redaktor; AGAPOV,
F.F., tekhnicheskii redaktor

[Sawing in lumbering] Pilopravnoe delo na lesozagotovkakh. Moskva,
Goslesbumizdat, 1954, 142 p. (MLRA 8:7)
(Saws)

UTKIN, N. I.

PANTSER, Aleksandr Val'terovich; SOBOLEV, Nikolay Grigor'yevich; ~~UTKIN~~
~~N.A.~~ redaktor; NIKOLAYEVA, I.I., redaktor izdatel'stva; BRATISHKO,
L.A., tekhnicheskij redaktor

[TL-4 winch apparatus] Agregatnye lebedki TL-4. Moskva, Goslesbum-
izdat, 1957. 95 p. (MLRA 10:8)
(Winches)

UTKIN, N. A. (ENGR)

UTKIN, N. A. (Engr) -- "Investigation of Portable Electric Power Stations in Forest Exploitation." Sub 3 Mar 52, Moscow Forestry Engineering Inst. (Dissertation for the Degree of Candidate in Technical Sciences.)

SO: VECHERNAYA MOSKVA, January-December 1952

UTKIN, N A.

AID P - 3221

Subject : USSR/Electricity
Card 1/1 Pub. 29 - 6/30
Author : Utkin, N. A., Eng.
Title : Alteration of combustion regulators of the hydraulic system of the plant "Teploavtomat"
Periodical : Energetik, 8, 7-9, Ag 1955
Abstract : The author describes details of the repairing and adjustment of automatic combustion control in two KO-3 type boilers in one of the steam electric power stations. One schematic drawing.
Institution : None
Submitted : No date

UTKIN, N.A., inzhener.

Modification of single-impulse charging regulators designed by
the Central Boiler and Turbine Institute for pulverizers. Ener-
getik 4 no.1:20-22 Ja '56. (MIRA 9:4)
(Automatic control) (Crushing machinery)

UTKIN, N.A., inzhener.

Automatic control of water heating in the chemical section of
thermopower plants. Energetik 4 no.11 24-25 N '56. (MIRA 9:12)
(Hot-water supply) (Automatic control)

UTKIN, N.A., inzhener.

Adjustment of three-impulse electronic feed-water regulators. Energetik 4 no.12:15-17 D '56. (MIRA 10:1)
(Feed-water regulation) (Electronic control)

AUTHOR: Utkin, N.A., Engineer

SOV-91-58-10-8/35

TITLE: The Adjustment of Automatic Electronic Regulators for Mill Loading (Naladka elektronnykh avtomaticheskikh regulyatorov zagruzki mel'nits)

PERIODICAL: Energetik, 1958, ^{vol. 6} Nr 10, pp 11 - 13 (USSR)

ABSTRACT: The author describes in detail the electronic regulators for mill loading which were installed in a recently assembled boiler unit, and says that despite the apparent perfection of this regulating system, it was found difficult to adjust the automatic mill-loader. This was due to the complicated dynamic characteristics of the object being regulated, namely the spherical tumbling barrel. The author describes how this leads to uneven loading of the mill, and says that he suggested an alteration in the regulating system: the introduction of a rigid feedback based on the position of the regulating organ. To this purpose, instead of the KDU-1 remote control column, a KDU-11 column was installed, which has a pickup of displacement in it. In such a case, the isodrome device in the regulator is not used. The author says that automatic regulators which are

Card 1/2

SOV-91-58-10-8/35

The Adjustment of Automatic Electronic Regulators for Mill Loading

adjusted in this manner have been in use for over a year. He then gives the following details of the quality of the work of this automatic device: the regulating organ remained for a long time within narrow limits (from 25 to 40% according to UP). The pressure drop in the mill varied between 120-130 mm for a prolonged period. The temperature of the dust-laden air rose from 136.5 to 141^oC, and later became stabilized at 139^oC for a lengthy period. There is one diagram and one graph.

1. Boilers--Equipment
2. Electronic equipment--Applications

Card 2/2

PIMENOV, Aleksandr Nikolayevich. Prinimal uchastiye UTKIN, N.A.,
dots.; GONIK, A.A., kand. tekhn. nauk, retsenzent;
FARBER, A.V., inzh., retsenzent; LEBEDEV, N.I., red.

[Machines and mechanisms for lumber floating] Mashiny i
mekhanizmy na lesosplave. Izd.2., ispr. i dop. Moskva,
Lesnaia promyshlennost', 1965. 388 p. (MIRA 19:1)

ACC NR: AR6031862 SOURCE CODE: UR/0058/66/000/006/V068/V068

AUTHOR: Suvorov, A. P.; Utkin, V. A.

TITLE: Passage of fission neutrons through iron plates

SOURCE: Ref. zh. Fizika, Abs. 6V559

REF SOURCE: Byul. Inform. tsentra po yadern. dannym, vyp. 2, 1965, 334-340

TOPIC TAGS: neutron beam, neutron angular distribution, fast neutron, neutron energy spectrum, collimated scintillation spectrometer, fission neutron

copy
ABSTRACT: The results of calculations by the method of "transmission matrix" in the $2P_7$ -approximation are compared with experimental data based on measurements of iron layers 5 and 15 cm thick of fast neutron angular energy spectra by means of a collimated scintillation spectrometer. The plates were irradiated by a plane monodirected beam of neutrons emerging from the reflector of a uranium-water reactor. Agreement between experimental and computational data in describing the angular distribution of neutrons is satisfactory. A certain divergence is explained by the use in the calculation of group constants adapted for the calculation of expanded media. Results are given of the calculation of angular distributions of

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ACC NR: AR6031862

neutrons reflected from the plates and for neutron angular distribution depending on the depth of penetration into the plate. [Translation of abstract]

SUB CODE: 20, 09/

Card 2/2

UTKIN, N. I.

"On the Question of the Manufacture of Lead-Zinc Sulfide Concentrates."
Cand Tech Sci, Moscow Inst of Nonferrous Metals and Gold Ineni M. I. Kalinin,
Min Higher Education USSR, Moscow, 1955. (JL, No 11, Mar 55)

So: Sum. No 670, 29 Sept 55 - Survey of Scientific and Technical Dissertations
Defended at USSR Higher Educational Institutions (15)

137-58-4-6575

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 37 (USSR)

AUTHORS: Vanyukov, A. V., Utkin, N. I.

TITLE: The Surface Tension of Slag Melts (O poverkhnostnom natya-zhenii shlakovykh rasplavov)

PERIODICAL: Sb. nauchn. tr. Mosk. in-t tsvetn. met. i zolota VNITO tsvetn. metallurgii, 1957, Nr 26, pp 41-53

ABSTRACT: The surface tension σ of synthetic melts of FeO-SiO₂-CaO(I) at 1200/1400°C and of multi-component slags [SiO₂, FeO, CaO, MgO, Al₂O₃ (9.5%)] (II) at 1350° was determined by the method of maximum bubble pressure. Iron crucibles and capillaries were used, and nitrogen was the working gas employed. In I, with a constant FeO:CaO ratio, σ diminishes as (SiO₂) rises from 460 (27% SiO₂) to 380 ergs/cm² (58% SiO₂). As the FeO:CaO ratio rises from 0.5 to 3.2 at constant (SiO₂), σ diminishes within the 460-410 interval (at 33% SiO₂) and 400-385 ergs/cm² (at 58% SiO₂). The $d\sigma/dT$ of slags differing in SiO₂ contents is positive at a FeO:CaO ratio of 1.5. At constant (SiO₂), a rise in (FeO) causes the $d\sigma/dT$ to move out of the negative and into the positive values. In II, a rise in (SiO₂) from 36 to 44% or of

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137-58-4-6575

The Surface Tension of Slag Melts

Al_2O_3 from 7.5 to 10.5% causes σ to decline, while as (CaO) rises from 18 to 24%, (FeO) from 16 to 22%, or MgO from 8 to 14%, σ will increase at a rate rising from CaO to MgO. The results are explained, in their qualitative aspect, by a change in interionic reaction. In particular, the rise in σ with increase in the basic acid contents and temperature is due to subdivision of the complex silicon oxide anions resulting in a strengthening of their bonds with the cations.

S. P.

1. Ores--Melting--Surface tension

Card 2/2

137-58-4-6576

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4 p 37 (USSR)

AUTHORS: Vanyukov, V.A., Vanyukov, A.V., Utkin, N.I.

TITLE: Surface Phenomena and the Losses of Metal in Slags (Poverkhnostnyye yavleniya i poteri metalla so shlakami)

PERIODICAL: Sb. nauchn. tr. Mosk. in-t tsvetn. met. i zolota i VNITO tsvetn. metallurgii, 1957, Nr 26, pp 54-62

ABSTRACT: Interphase tension (σ) at the slag-matte interface and the wetting (angle of contact φ) of slag by matte were measured. The dimensions of rapidly cooling drops of matte in the slag (17.95% FeO, 20.35% CaO, 39.7% SiO₂, 9.25% Al₂O₃, 10.25% MgO) were determined, and a graphic method (RzhMet, 1956, Nr 2, abstract 1006) was used to calculate σ thereon. As the S contents of the matte rose from 8.8 (16.4% Ni) to 31.7% (23.0% Ni), σ dropped from 240 to 99 dynes/cm. and the Ni content of the slag increased from 0.04 to 0.3%. As temperature rose from 1200 to 1350°C, σ rose from 193 to 234 dynes/cm. and the Ni content of the slag dropped simultaneously from 0.63 to 0.17%. The rise in σ with temperature is explained by the subdivision of the silicon oxide complexes. Holding of melts in

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137-58-4-6576

Surface Phenomena, and the Losses of Metal in Slags

an oxidizing atmosphere (5% O₂) was accompanied by a reduction in σ while when held in a reducing atmosphere, σ increased. In a neutral atmosphere, the introduction of magnetite induced a decline in σ . Wetting of the slag by the matte is impaired as the SiO₂ and CaO contents of the latter rise and also as FeO diminishes. η is 27-37% and drops by about 10° as the following various changes occur in the slag: SiO₂ from 38 to 44%, CaO from 20.5 to 24%, FeO from 22 to 16%. An increase in MgO contents from 10 to 12% caused η to rise from 31 to 50°. It is noted that σ and η rise with the concentration in the slag of cations that do not go into the matte (Ca²⁺ Mg²⁺). Simultaneously, a reduction in loss of metal with the slags was observed.

- 1. Slags--Surface tension--Measurement
 - Test results
 - 4. Metals--Losses
 - 2. Slags--Test methods
 - 3 Slags
- S.P.

Card 2/2

UTKIN, N.I.

137-58-5-9348

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 78 (USSR)

AUTHORS: Vanyukov, V.A., Utkin, N.I., Vanyukov, A.V.

TITLE: A Study of the Kinetics of Distillation of Zinc From Molten Slags
(K voprosu izucheniya kinetiki otgonki tsinka iz shlakovykh rasplavov)

PERIODICAL: Sb. nauchn. tr. Mosk. in-tsvetn. met. i zolota i VNITO
tsvetn. metallurgii, 1957, Nr 26, pp 63-73

ABSTRACT: A study of the kinetics of a process in which, under the action of solid C, Zn is distilled from molten slags of various composition. Ten samples of slags containing different amounts of SiO₂, FeO, and CaO, and having a constant ZnO content (10%) were investigated. Chemically pure substances were employed in preparing the slags. The rate of distillation of Zn from liquid slags is determined to a considerable degree by the temperature of the process and the composition of slag; it increases as the temperature and the content of FeO in the slag become greater. Acidic and ferrous slags react differently to the addition of CaO. An increase in the CaO content increases the rate of volatilization of Zn from ferrous slags and decreases it in the case of

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137-58-5-9348

A Study of the Kinetics of Distillation of Zinc From Molten Slags

acidic slags. The process of reduction of Zn from liquid slags falls into the category of diffusion processes; this is corroborated by the values of the rate constants, the magnitude of the apparent energy of activation, and the value of the temperature-rate coefficient. The results of the experimental smeltings justify the assumption that the distillation of Zn proceeds with the aid of metallic Fe, which is an active intermediate product of the reaction. This assumption is substantiated by the appearance of Fe beads in selected samples and in the final slag, by an increase in the rate of Zn distillation when the FeO concentration in the liquid slags is increased, and by the magnitude of the apparent energy of activation.

N. P.

1. Slags--Preparation 2. Slags--Properties 3. Zinc--Separation 4. Zinc
ores--Processing

Card 2/2

VANYUKOV, A.V.; UTKIN, N.I.

Effect of cations on surface tension of silicate melts. Izv. vyz.
ucheb. zav.; tsvet. met. no.2:39-44 '58. (MIRA 11:8)

1. Moskovskiy institut tsvetnykh metallov i zolota. Kafedra metal-
lurgii tyazhelykh tsvetnykh metallov.
(Base exchanging compounds) (Surface tension)

AUTHORS: Vanyukov, A. V., Utkin, M. I.

SOV/163-53-3-4/49

TITLE: Surface Tension of the Melts in the Systems FeO-SiO₂-CaO
(Poverkhnostnoye natyazheniye rasplavov sistemy FeO-SiO₂-CaO)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958,
Nr 3, pp 22 - 24 (USSR)

ABSTRACT: The surface tension of the melts in the system FeO-SiO₂-CaO was determined. The experiments were carried out with synthetically produced melts in hermetically sealed furnaces at 1350° in gas atmosphere. From the diagram of the surface tension of the melt may be seen that an increase of the SiO₂-content in acid melts effects a decrease of the surface tension, but that a substitution of FeO by CaO causes the surface tension to increase. The decrease of the surface tension by increasing the acidity of the melt is explained by the increase of the capillary activity of the complexes in the melts. The complex anions accumulate at the surface of the melt and reduce the surface tension. The substitution of the

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Surface Tension of the Melts in the Systems
FeO-SiO₂-CaO

SOV/163-58-3-4/49

cations Fe²⁺ by Ca²⁺ leads to a destruction of the silicon-oxygen complexes, to a decrease of the capillary activity, and consequently to an increase of the surface tension in the silicate melts. There are 1 figure, 1 table, and 7 references, 6 of which are Soviet.

ASSOCIATION: Moskovskiy institut tsvetnykh metallov i zolota (Moscow Institute of Non-Ferrous Metals and Gold)

SUBMITTED: January 16, 1958

Card 2/2

SOV/149-58-6-5/19

AUTHORS: Vanyukov, A.V. and Utkin, N.I.

TITLE: The Effect of Temperature on the Surface Tension of Silicate Melts (Vliyaniye temperatury na poverkhnostnoye natyazheniye silikatnykh rasplavov)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, 1958, Nr 6, pp 43 - 48 (USSR)

ABSTRACT: The temperature dependence of the surface tension of binary silicate melts was extensively studied by King (Ref 5) who used a modified ring method for measuring the surface tension. King established that the temperature coefficient of the surface tension of some mixtures was positive and that it increased with increasing acidity of the melts and with increasing field strength of the cations, the latter effect having been also observed by Boni and Derge (Ref 3). On the other hand, it had been found by other investigators (Refs 7,8) that the surface tension of the FeO-SiO₂ and FeO-Fe₂O₃ systems was practically unaffected by the temperature variation. The present authors studied the surface tension σ of various synthetic silicate melts in the 1 200 - 1 400 °C temperature range using the

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SOV/149-58-6-5/19

The Effect of Temperature on the Surface Tension of Silicate Melts

method of the maximum pressure of a gas (nitrogen) bubble, the experimental technique having been described elsewhere (Refs 9, 10). The effect of the temperature on σ of the melts of the FeO-SiO₂-CaO system was studied on seven

mixtures representing typical slags formed in a majority of processes used in extraction of non-ferrous metals. The composition of these experimental slags (in mol%) is given in Table 1, the last column of which shows the acidity of the melts as measured by $K = O(\text{SiO}_2)/O(\text{FeO})$.

The results of the first series of experiments are given in Table 2, showing the values of σ (in dynes/cm) at various temperatures and the temperature coefficient of σ (in dynes/cm per °C) for the investigated temperature range. With the exception of the melt containing the maximum proportion of CaO, the temperature coefficient of σ was positive and its magnitude increased with the increasing FeO/CaO ratio and with increasing acidity of the melts. In the second stage of the investigation, the effect of temperature on σ of melts of the

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SOV/149-58-6-5/19

The Effect of Temperature on the Surface Tension of Silicate Melts

FeO-SiO₂-Me₂O(MeO) systems was studied on mixtures containing (in mol.%) 34.5 FeO, 43 SiO and 22.5 Me₂O (an alkali metal oxide) or MeO (an alkaline earth metal oxide). The temperature dependence of σ of the melts containing K₂O, Na₂O and Li₂O is shown in Figure 1 (graphs 1, 2 and 3, respectively). The same relationship for the melts containing BeO, BaO, SrO, CaO and MgO is shown in Figure 2 (graphs 1-5, respectively). The relationship between the temperature coefficient of σ of silicate melts and the ionic potential $i = Z/r$ of some cations is illustrated in Figure 3. The surface tension of the melt containing K₂O decreased with increasing temperature and the temperature coefficient of σ of the melt containing Na₂O was equal zero. In all the other cases the temperature coefficient of σ was positive. The following conclusions were reached: i) the temperature dependence of σ of the investigated silicate melts containing FeO confirmed the micro-heterogeneity of melts of this type; ii) the high

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SOV/149-58-6-5/19

The Effect of Temperature on the Surface Tension of Silicate Melts

degree of micro-heterogeneity exhibited by the melts in the presence of the Fe^{2+} cation is caused by oxygen breaking away from the complex anions and by the cybotactic groups consisting of complex anions and weak cations being forced out to the surface layers of the melt; iii) in the case of the cations of the alkali and alkaline earth metals characterised by ionic potential lower than 2, the micro-heterogeneity of the melts containing the Fe^{2+} ions increases with the decreasing field strength of the cations and the temperature coefficient of σ correspondingly decreases; iv) the decrease of the temperature coefficient of σ observed when CaO is substituted by MgO or BeO is an indication of the tendency of the Mg^{2+} and Be^{2+} cations to form complexes; v) the increase of the temperature coefficient of σ of the melts of the FeO-SiO₂-CaO system resulting from the increase of the acidity and of the FeO/CaO ratio is associated with the breakdown of the silicate anions and with homogenisation of the melt; vi) the magnitude and the sign of the

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SOV/149-58-6-5/19

The Effect of Temperature on the Surface Tension of Silicate Melts

temperature coefficient of σ of silicate melts is determined by: a) a decrease of the strength of the forces binding the ions; b) breakdown of the complex anions resulting from weakening of the bond between the Fe^{2+} and O^{2-} ions and c) homogenisation of the melt at higher temperatures. The decisive part played by the two last factors can be inferred from the positive values of the temperature coefficient of σ of the majority of the investigated melts. There are 3 figures, 2 tables and 14 references, 12 of which are Soviet and 2 English.

ASSOCIATION: Moskovskiy institut tsvetnykh metallov i zolota.
Kafedra metallurgii tyazhelykh tsvetnykh metallov
(Moscow Institute of Non-ferrous Metals and Gold.
Chair of the Metallurgy of Heavy Non-ferrous Metals)

SUBMITTED: January 14, 1958

Card 5/5

18(6)

AUTHORS:

Vanyukov, A. V., Utkin, N. I.

SOV/163-59-1-3/50

TITLE:

Influence of Chromium Upon the Surface Tension in Nickel-smelt Slags (Vliyaniye khroma na poverkhnostnoye natyazheniye shlakov nikel'evoy plavki)

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Metallurgiya, 1959, Nr 1, pp 11-13 (USSR)

ABSTRACT:

Reference is made of the fact that by an addition of as little as 0.001 gram mols of Cr_2O_3 the surface tension of glasses is reduced by 200-225 dynes/cm, which phenomenon has been discovered by Appen et al. (Ref 3). The work reported in this paper was carried out to check this allegation. The influence of chromium upon the surface tension (σ) in the slags of smelts of oxidized nickel ores was investigated. The surface tension was determined according to the method of the maximum pressure of a gas bubble (nitrogen) at three temperatures, at 1,300, 1,350, and 1,400° (Ref 4). Synthetic slags, fused from chemically pure oxides, were used in the experiments. Ferrous oxide was added as iron silicate ($2FeO \cdot SiO_2$). The Cr_2O_3 content in the slags varies from 0 to 5%. It appears from

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Influence of Chromium Upon the Surface Tension in
Nickel-smelt Slags

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the experimental data that the surface tension decreases if the chromium oxide content increases. The concentration decrease of Cr_2O_3 lies at about 1%. The surface tension decreases by about 5 dynes/cm. It is shown that the decrease of the surface tension with increasing concentration is connected with the increase of the capillary activity of the complex anions. This is also demonstrated by the positive

temperature coefficient $\frac{d\sigma}{dT}$, of the slags investigated. The

experimental information, however, does not indicate such a pronounced decrease of σ with an increase of the Cr_2O_3 content in the slags, which with glass has been found by Appen (Ref 3). It was found in the course of the experiments that the increase of the Cr_2O_3 -content in the slags results in a decrease of the interface tension ($\sigma_{1,2}$) at the boundary between the slag and the iron crucible. A similar influence of the chromium upon the variation of the surface tension σ should be expected to occur at the boundary between the slag and the

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Influence of Chromium Upon the Surface Tension in
Nickel-smelt Slags

SOV/163-59-1-3/50

lining, which forms during the melting of oxidized nickel ores in cupola furnaces. The reduction of the interface tension is closely connected with the ability of chromium to disperse among the liquid smelt products. A low interface tension is an inconvenient phenomenon, as in this case the separation of the liquid smelt products becomes more difficult and the losses of valuable metals in the slags increase. There are 2 tables and 8 references, 7 of which are Soviet.

ASSOCIATION: Moskovskiy institut tsvetnykh metallov i zolota (Moscow Institute of Non-ferrous Metals and Gold)

SUBMITTED: May 26, 1958

Card 3/3

28(4)

SOV/32-25-2-47/78

AUTHORS:

Vanyukov, A. V., Utkin, N. I., Remov, V. A.

TITLE:

A High Temperature Laboratory Centrifuge (Vysokotemperaturnaya laboratornaya tsentrifuga)

PERIODICAL:

Zavodskaya Laboratoriya, 1959, Vol 25, Nr 2, p 222 (USSR)

ABSTRACT:

A centrifuge has been developed which permits a working temperature of 1400°. As may be seen from the figure (Fig) the centrifuge head turns in an electric stove. It is turned by a 0.52 kw electric motor. The speed may be adjusted to 500, 700 and 900 r.p.m., the speed of the motor being 1400 r.p.m. At the upper end of the stove there are two openings. The thermoelements are introduced through one of the openings, while nitrogen containing no oxygen is supplied through the other. Molten slag was centrifuged in the following way: the slag was molten and then centrifuged. When the stove was switched off the centrifuge continued operation until the slag had cooled off and solidified. There is 1 figure.

ASSOCIATION:

Moskovskiy institut tsvetnykh metallov i zolota im. M. I. Kalinina (Moscow Institute of Non-Ferrous Metals and Gold imeni M. I. Kalinin)

Card 1/1

S/137/62/000/005/040/150
A006/A101

AUTHORS: Vanyukov, A. V., Utkin, N. I., Malevskiy, A. Yu.; Popkov, A. N.

TITLE: Behavior of chromium in processing oxidized nickel ores

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 5, 1962, 22, abstract 50139
("Sb. nauchn. tr. In-t tsvetn. met. im. M. I. Kalinina", 1960,
v. 33, 51 - 66)

TEXT: The authors studied behavior of Cr during melting of oxidized Ni
ores and its effect upon the properties of slags. There are 24 references.

G. Svodtseva

[Abstracter's note: Complete translation]

Card 1/1

UTKIN, N.I.; SYRACU, E.I.; KOLYBABA, P.M.; MELNANSKIY, I.I.; BUSHKANETS, A.S.;
DOLBAC, V.N.; KAZANIN, G.M.

Results of plant tests... from sodium
allergic stage... (MINA 18:5)

UTKIN, N.I.; PYZHOV, S.S.

Recovery of noble metals from sodium silicate slags. TSvet. met. 37
no.9:36-43 S '64. (MIRA 18:7)

UTKIN, N.M.

TERUSHKIN, A.P.; UTKIN, N.M.; SHINKEVICH, N.I., kand.tekhn.nauk, dots.;
GOLUBSOVA, P., red.; TRUKHANOVA, A., tekhn.red.

[Handbook of mechanical drawing for engineers and builders] Spravochnik po inzhenerno-stroitel'nomu chercheniu. Pod red. N.I.Shinkevicha. Minsk, Gos. izd-vo BSSR. Red. nauchno-tekhn.lit-ry, 1958. 323 p.
(Mechanical drawing) (MIRA 11:4)

UTKIN, N. N.

Ch, Kostromskaya Obl Admin of Agr RSFSR
(Sotsialisticheskoye Zemledeliye, 3 Mar 53)

SO: Summary #665, 31 Oct 55

UTKIN, O.L.

VASIL'YEV, A.V., kandidat tekhnicheskikh nauk; ZAKHAROV, V.P., kandidat tekhnicheskikh nauk; UTKIN, O.L., inzhener.

Measurement of forces and moments. Vest.mash.35 no.9:16-21 S '55.
(MLRA 9:1)

1.Nauchno-issledovatel'skiy avtotraktoray institut.
(Force and energy--Measurement) (Kinematics--Measurement)

UTKIN, Nikolay Petrovich, deputat Verkhovnogo Soveta Mordovskoy ASSR;
KELIN, M., red.; CHIZHIKOVA, V., tekhn.red.

[Under new conditions; story of a follower of Valentina Gaganova] V novykh usloviakh; rasskaz posledovatelia Valentiny Gaganovoi. Saransk, Mordovskoe knizhnoe izd-vo, 1960. 42 p.
(MIRA 14:2)

1. Predsedatel' kolkhoza "Pobeda" Ardatovskogo rayona (for Utkin).
(Mordovia--Collective farms)

ZELIGER, Naum Borisovich; VINOGRAD, Semen Iosifovich; UTKIN, R.V., redaktor;
ZABRODINA, A.A., tekhnicheskii redaktor.

[Fundamentals of a theory of telegraph] Osnovy teorii telegrafnykh
mekhanizmov. Moskva, Gos.energ.isd-vo, 1955. 284 p. [Microfilm]
(Telegraph) (MIRA 8:5)

ZYRYANOV, Ye.G.; OSIPOV, Yu.A.; P'YANKOV, A.P.; UTKIN, S.A.

Dust collecting equipment for use in rock drilling in the
Kizel Basin. Nauch. trudy Perm NIUI no. 4:146-155 '62.
(MIRA 17:6)

RYCHKOV, A. A.; UTKIN, S. Ye., Engineers

"Making Cast Tools from High-Speed Steel"
(From experience at the GAZ (Gorkiy
Automobile Plant) imeni Molotov), Stanki
i Instrument, 16, No. 3, 1945

BR-52059019

UTKIN

Mind Mechanization in Rep. U.S.S.R. (Lectures by V. K. Utkin and V. K. Naryshkin)

81519

SOV/137-59-5-10871

18.4000

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 5, p 204 (USSR)

AUTHOR: Utkin, S.Ye.

TITLE: Surface Alloying of Castings With Tellurium and Other Elements

PERIODICAL: Tekhnol. avtomobilestroyeniya, 1958, Nr 5, pp 39 - 46

ABSTRACT: To improve the working capacity of surface layers in castings it is necessary that the initial crystallization processes of the alloy in the mold be satisfactory, in order to obtain a compact metal without friableness and pores. At the Gor'kiy Automobile Plant studies and practical investigations on surface alloying were carried out. The method of surface alloying of castings consists in the application of a paint layer on the chosen surfaces of molds or cores prior to casting; the paint contains alloying elements saturating the surface of the casting to be alloyed during crystallization. Tellurium and other paints were tested. It was established that Te was the strongest carbide forming element. The effect of Te and Sb on the mechanical properties of gray iron were investigated. It was revealed that a

Card 1/2

81519

SOV/137-59-5-10871

Surface Alloying of Castings With Tellurium and Other Elements

0.01% Te content must be considered as a critical amount for strengthening the cast iron, since a higher Te amount causes formation of cementite. Amounts up to 0.01% Sb did not affect noticeably the cast iron structure. But already at a 0.1% content and more the mechanical properties were sharply impaired. Te used in Te-paints is an intensive activator of the crystallization process. Experiments [this word was left out in the text] provided positive results so that it was possible to change over to large-scale use of anti-pore paint in block casting. Surface alloying, which can be performed without investment for any type of foundry practice, provides an increase in the wear resistance, hardness and compactness of the castings. There are 20 bibliographical titles.

A.S.

Card 2/2

UTKIN, S. Ye., Cand Tech Sci -- (diss) "Research into the process of surface alloying of cast materials." Gor'kiy, 1960. 26 pp with illustrations; (Ministry of Higher and Secondary Specialist Education USSR, Gor'kiy Polytechnic Inst in A. A. Zhdanov); number of copies not given; price not given; (KL, 21-60, 126)

WILL S. YU.

"Surface Alloying of Iron Castings with Tellurium and Other Elements"

report presented at the 7th Conference on the Interaction of the Molten Metal
and the Casting, sponsored by Inst. of Mechanical Engineering, Acad. Sci.
USSR, 25-28 January 1961.

UTKIN, V. (Riga)

Importance of sounding and angiocardiography in diagnostics of congenital heart diseases. Vestis Latv ak no.2:165-170 '61.
(EEAI 10:9)

1. Akademiya nauk Latvyskoy SSR, Institut eksperimental'noy i klinicheskoy meditsiny.

(HEART) (CARDIOGRAPHY)

UTKIN, V., inzhener-polkovnik; SVECHNIKOV, A., inzhener-polkovnik

Maintenance day. Voen. vest. 43 no.6:82-85 Je '63. (MIRA 16:6)
(Tanks (Military science)--Maintenance and repair)

L 05047-67 EWI(m)/EWP(t)/EFI IJP(c) JD/JR/GD

ACC NR: AT6027923

SOURCE CODE: UR/0000/66/000/000/0074/0087

AUTHOR: Germogenova, T. A.; Suvorov, A. P.; Utkin, V. A.

50
B+

ORG: None

27 10

TITLE: Angular energy spectra for fast neutrons behind iron shielding

19

SOURCE: Voprosy fiziki zashchity reaktorov (Problems in physics of reactor shielding); sbornik statey, no. 2. Moscow, Atomizdat, 1966, 74-87

TOPIC TAGS: fast neutron, radiation shielding, angular distribution, neutron distribution, neutron spectrum

ABSTRACT: The authors give some results from calculations of the energy and angular distributions of fast neutrons behind flat iron plates of various thickness. In finding the differential intensity of a stream of neutrons $F(x, \mu, \phi, E)$ of energy E at a depth x in the direction Ω determined by the angles $\Theta = \cos^{-1} \mu$ (with the x -axis) and ϕ (azimuth), the kinetic equation

$$\mu \frac{\partial F}{\partial x} + \Sigma(x, E) F(x, \mu, \phi, E) = \int_E^{E_{\max}} d\Omega' \int_E^{E_{\max}} dE' \Sigma_s(E' \rightarrow E, \Omega' \Omega) F(x, \mu', \phi', E')$$

was used together with boundary conditions describing the angular and energy distribu-

L 05047-67

ACC NR: AT6027923

tion of a plane-parallel radiation beam incident on the surface $x=0$ of the plate. A program for calculating one-dimensional shielding was used for computing the intensity of scattered radiation $\phi(x, \mu, \phi, E)$ in the 2P7-th multigroup approximation. The main purpose of the calculations was to determine the angular energy distribution of intensity of scattered radiation as a function of spectral and angular characteristics of plane monochromatic sources for various shielding thicknesses. Basically, the distribution of fast neutrons from two sources was studied: $T(d,n)He^4$ and $D(d,n)He^3$. The first source may be considered nearly monochromatic while it is necessary in the second to consider the effect of energy and angle on the intensity of the emitted neutrons. Errors are analyzed. Orig. art. has: 14 figures, 1 table, 3 formulas.

SUB CODE: 18,20,12/ SUBM DATE: 12Jan66/ ORIG REF: 005/ OTH REF: 004

Card 2/2 *pla*

I. 05052-67 EWT(m) JR/GD

ACC NR: AT6027918

SOURCE CODE: UR/0000/66/000/000/0022/0039

AUTHOR: Germogenova, T. A.; Suvorov, A. P.; Utkin, V. A.

47
44

ORG: None

BT/

TITLE: Penetration of neutrons¹⁹ through plane-parallel multilayer media

SOURCE: Voprosy fiziki zashchity reaktorov (Problems in physics of reactor shielding);
sbornik statey, no. 2. Moscow, Atomizdat, 1966, 22-39

TOPIC TAGS: neutron radiation, finite difference, computer programming, radiation
shielding, *RADIATION INTENSITY*

ABSTRACT: A finite-difference method is proposed for a numerical solution of a one-dimensional kinetic equation describing the penetration of radiation through a material in terms of complex functions of energy, angles and spatial coordinates. This method is based on the multigroup system of analysis and gives high accuracy while requiring a comparatively small amount of machine time. In solving the finite-difference system, the coefficients of transmission and reflection are calculated for a sequence of layers increasing in thickness and these coefficients are then used for finding the approximate values of radiation intensity. This method is not as sensitive as iteration methods to an increase in the dimensions of the system or to steep gradients in the coefficients. The method is used for analyzing the passage of radi-

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L 05052-67

ACC NR: AT6027918

3
ation through a plane-parallel shield consisting of several layers. The proposed method for solving a multigroup system of equations is used as the basis for compilation of programs for calculating the characteristics of one-dimensional shielding. These programs were compiled by L. P. Bass and V. A. Utkin. Graphs are given showing the results of calculations for angular distribution of transmitted and reflected radiation, spatial distribution of neutron flux, the fast neutron spectrum for radiation from an isotropic source and the change in angular distribution with distance in a medium consisting of hydrogen nuclei for radiation from a plane isotropic source. The authors are deeply grateful to L. P. Bass who was the author of a portion of the program for calculating one-dimensional shielding and gave tremendous assistance in carrying out the calculations. The authors also thank N. F. Golova and G. E. Rishina who helped with the basic calculations. Orig. art. has: 5 figures, 38 formulas.

SUB CODE: 18/ SUBM DATE: 12Jan66/ ORIG REF: 018/ OTH REF: 008

Card 2/2 *pla*

UTKIN, V.I.

Concretes made with glass-containing slag as a filler. Izv.
Mold. fil. AN SSSR no.6:84-91 '61 (MIRA 17:7)

L 05050-67 EWT(m) JR/GD
ACC NR: AT6027920

SOURCE CODE: UR/0000/66/000/000/0057/0066

AUTHOR: Germogen va, T. A.; Suvorov, A. P.; Utkin, V. A.; Bass, L. P.

36
B+

ORG: None

TITLE: Neutron transfer¹⁹ in nonmultiplying systems with spherical symmetry

SOURCE: Voprosy fiziki mashchity reaktorov (Problems in physics of reactor shield-
ing); sbornik statey, no. 2. Moscow, Atomizdat, 196¹⁹, 57-66

TOPIC TAGS: neutron radiation, radiation source, scattering cross section

ABSTRACT: The literature on methods for solution of radiation transfer problems is briefly reviewed and the problem of an isotropic point source is considered. Since the problem of an isotropic point source in an infinite medium has been studied in more detail in transfer theory than the case of a bounded medium, the solutions for these problems are compared on the basis of the one-velocity model with isotropic scattering for spheres with finite and infinite radii. A comparison of formulas describing the asymptotic behavior of the density of a finite sphere with a large radius shows that the results of calculations of the density of scattered radiation from a point source in an infinite homogeneous medium may be directly used for determining the density only when absorption is less than 1 everywhere except in the region adjacent to the boundary $r=R$. Orig. art. has: 6 figures, 9 formulas.

SUB CODE: 20, 18/ SUBM DATE: 12Jan66/ ORIG REF: 007/ OTH REF: 002

Card 1/1 *pld*

GORSKOV, Vladimir Alekseyevich; PUSHKIN, P.S., kandidat tekhnicheskikh nauk, retsenzent; POLYAK, T.B., kandidat tekhnicheskikh nauk, retsenzent; UTKIN, V.A., retsenzent; PLEMYANNIKOV, M.N., redaktor; MEDVEDEV, L.Ya., tekhnicheskii redaktor

[Labor management and production norms in the glass industry] Organizatsiya truda i tekhnicheskoe normirovanie v stekol'nom proizvodstve. Moskva, Gos. nauchno-tekhn. izd-vo ministerstva promyshlennykh tovarov shirokogo potrebleniya SSSR, 1954. 354 p. [Microfilm] (MLRA 8:2)
(Glass manufacture) (Industrial management)

UTKIN, V.D.

1st Lt. UTKIN, V.D.
1st Lt. UTKIN, V.D.

KAPITANOVSKIY, L.N.; UTKIN, V.G., starshiy inzh.

ERIO electric train. Elekt.i tepl. tiaga 5 no.10:24-26 0 '61.
(MIRA 14:10)

1. Nachal'nik eksperimental'no-konstruktorskogo byuro Rizhskogo vagonostroitel'nogo zavoda (for Kapitanovskiy). 2. Proyektnyy otdel Rizhskogo vagonostroitel'nogo zavoda (for Utkin).
(Railroad motorcars)

UTKIN, V.I. (Moskva)

Compensation of forced motion components in systems with variable
structure. Izv. AN SSSR. Tekh. kib. no.4:169-173 J1-Ag '65.
(MIRA 18:11)

L 1478-66 EWT(d)/EPF(n)-2/EWP(v)/EWP(k)/EWP(h)/EWP(l) IJP(c) WW/BC

ACCESSION NR: AP5021860

UR/0280/65/000/004/0169/0173

AUTHOR: Utkin, V. I. (Moscow)

36
B

TITLE: The compensation of the forced motion component in systems with variable structure

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 4, 1965, 169-173

TOPIC TAGS: automatic control system, linear automatic control system, automatic control design

11

9,55

ABSTRACT: An automatic control system with variable structure for the control of linear objects whose output coordinate must reproduce a given interaction with an accuracy up to the damped transient is investigated for the case when the object is affected by perturbing forces. It is shown that the problem of the control can be solved by means of switching circuits located within the channels of the main and local feedbacks following a specified logical rule. This can be achieved without the need for measuring any of the coordinates of the control object or of the applied perturbations. Orig. art. has: 25 formulas and 1 figure.

ASSOCIATION: None
Card 1/2