

BELENEV, Yu.N.; KABAK, Ya.M.

Atrophic changes in the genital system of male rats following
injuries to the hypothalamus. Probl. endok. i gorm. 7 no.1:
3-11 '61. (MIRA 14:3)
(GENERATIVE ORGANS, MALE) (HYPOTHALAMUS)

BELENEV, Yu.N.

New model of a stereotaxic device for small laboratory animals.
Biul. eksp. biol. i med. 51 no.5:116-118 My '61. (MIRA 14:8)

1. Iz laboratorii endokrinologii (zav. - prof. Ya.M. Kabak) biologo-
pochvennogo fakul'teta (dekan - prof. N.P.Naumov) Moskovskogo ordena
Lenina gosudarstvennogo universiteta imeni M.V.Lomonosova. Predstavlena
deystvitel'nym chlenom AMN SSSR A.L.Myasnikovym.
(PHYSIOLOGICAL APPARATUS)

LEVINA, S.Ye.; ~~BELEJEV, Yu.N.~~

Artificial cryptorchism in rats. *Biul. eksp. biol. i med.*
54 no.12:94-99 D'62. (MIRA 16:6)

1. Iz Instituta morfologii zhivotnykh imeni A.N.Severtsova
AN SSSR i laboratorii endokrinologii Moskovskogo gosudarst-
vennogo universiteta imeni M.V.Lomonosova. Predstavlena
deystvitel'nym chlenom AMN SSSR A.V.Lebedinskim
(TESTICLE--ABNORMITIES AND DEFORMITIES)

Beleni, I.

Investigating the improving of hammer mills. (Tests on increasing hammer speeds.) Istvan Beleni (Agricultural Machine Research Institute, Budapest). *Acta Tech. Acad. Sci. Hung.* 10, 355-390(1955) (in Russian).—A theoretical and exptl. study of hammer-mill operation, with special application to grinding barley and maize. The Kholmogorov theory of size reduction (*Doklady Akad. Nauk S.S.S.R.* 31, 90-101(1941)) is applicable to hammer-mill results, and log-normal particle-size distribution was observed in the products obtained. A "W-12" mill was used in these tests; it had 12 hammers, a design operating speed of 2855 r.p.m., hammer-circle diam. of 440 mm., hammer peripheral design velocity of 65.5 m./sec., and screens with 3-, 5-, or 10-mm. apertures. Tests were performed over a 50-90 m./sec. range of hammer velocities. Detailed results (in terms of various parameters related to particle-size distribution as functions of power input, throughput, and r.p.m.) are presented graphically and in tables. Math. equations are developed for calcg. various derived characteristics of particle-size distributions from screen analysis data. H. J. K.

(1)

1. YE. I. BELENIA, YE. D. TSIPEROVICH

2. USSR(600)

4. Building, Iron and Steel

7. Results of testing the transverse frame of the steel framework of an industrial building. Stroi. prom. 31 no. 1. 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

L 43873-66 EWT(1) GW

ACC NR: AT6011159 SOURCE CODE: UR/3197/65/000/002/0344/0350

AUTHOR: Belenitskaya, G. A.; Tyurenov, V. A.

40
B+1

ORG: Geological Institute, Kola Branch, AN SSSR (Geologicheskii institut Kol'skogo filiala AN SSSR)

TITLE: Relationship of physical and mechanical properties to rock stresses

SOURCE: AN EstSSR. Institut fiziki i astronomii. Sovremennyye dvizheniya zemnoy kory. Recent crustal movements, no. 2, 1965, 344-350

TOPIC TAGS: rock property, elastic wave propagation, ultrasonic wave, geomagnetism, rock stress, *TECTONICS*

ABSTRACT: Observations have been carried out on the Kola Peninsula to obtain data on the relationship between elasticity, density, and magnetic properties and rock stresses in basic rocks (gabbro-norita) and in iron quartzites. Elastic properties were measured with standard ultrasonic equipment, and magnetic properties with a magnetometer. Results obtained during this study indicate that magnetic and ultrasonic-wave propagation studies can be used not only to determine rock composition and the size and shape of ore bodies, but also to determine crustal areas subjected to deformation. Orig. art. has: 3 figures and 4 tables.

SUB CODE: 08/ SUBM DATE: none/ ORIG REF: 004/ [ER]

Card 1/1 pb

BELENITSKIY, A.M.

"The Great Central Asian Encyclopedist of the Eleventh Century,
Al-Birun, and His Description of the Mineral Resources of Central Asia,"
Priroda, No. 8, 1949

BELENITSKIY, A. M.

"Geologicomineralogical Treatise of Avicenna," Izv. Otd. obshchestv. nauk AN TadzhSSR, No 4, pp 41-54, 1953

The author translates the treatise on geology and mineralogy of the famous Bukhara scientist Avicenna (Ibn Sina). The treatise is one of the divisions of Avicenna's work Book of Healing, written by him around 1023. The first part of the treatise is devoted to problems of geology; the second, the problems of the classification of minerals and their formation. (RZhGeol, No 4, 1955)

Sum. No. 681, 7 Oct 55

BELENITSKIY, A.M.

Preliminary information on the works of the Pendshikent group in
1953. Dokl. AN Tadsh. SSR no. 11:17-29 '54. (MIRA 9:9)

1. Institut istorii, arkhologii i etnografii AN Tadzhikskoy SSR.
Predstavlene deystvitel'nykh chlenov AN Tadzhikskoy SSR, prof.
A.A. Semenovyn.
(Pendshikent--Excavations (Archeology))

BARTOL'D, Vasilii Vladimirovich; BELENITSKIY, A.M., otv. red.
toma

[Works] Sochinenia. Moskva, Nauka. Vol.3. 1965. 711 p.
(MIRA 19:1)

BELENITSKIY, B.

Ways at reorganizing the wage system for oil-well repair workers.
Sots.trud. no.1:65-69 Ja '57. (MLRA 10:4)
(Oil wells--Equipment and supplies--Repairing)

BELENIY, Evgeniy Ivanovich, for Doctor of Technical Sciences on the basis
of dissertation defended 1 Dec 1959 in Council of Moscow Order ^{of} Labor
^{Banner}
Red ~~Flag~~ Construction Engineering Institute imeni Kuybyshev, entitled:
Effective Performance Design
"Actual function and calculation of transverse frames ^{of steel skeletons} in the framework
of one-storied industrial buildings" (BMVISO USSR, 2-61, 16)

1
20

CZECHOSLOVAKIA/Chemical Technology - Chemical Products and H.
Their Applications - Food Industry.

Abs Jour : Ref Zhur - Khimiya, No 11, 1958, 37863

Author : Belenkaja, T.

Inst : -

Title : An Objective Method of Analysis of the Stability of
Jelliod Marmalades.

Orig Pub : Prumysl Potravin, 1955, 6, No 7, 347-349

Abstract : No abstract.

Card 1/1

10

Aliphatic carboxylic acids. S. L. Lel'chuk and A. F. Hekopkaya. U.S.S.R. 66,131, Apr. 30, 1946. In the production of aliphatic carboxylic acids by oxidation of alcs. or aldehydes in the gaseous phase and in the presence of H₂O, a Cu alloy, contg. Cr, Ti, or Pt as activator, is used as catalyst. The catalyst is air-mixed at 200°.

M. Houch

METALLURGICAL LITERATURE CLASSIFICATION

| CLASSIFICATION | INDEXING | SEARCHING | RECORDING | RETRIEVAL |
|----------------|----------|-----------|-----------|-----------|
| 1 | 2 | 3 | 4 | 5 |
| 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 |
| 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 |
| 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 |
| 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 |
| 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 |
| 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 |
| 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 |
| 96 | 97 | 98 | 99 | 100 |

PROCESSES AND PROPERTIES OF...

10

Method of obtaining 2,3-dichloro-1,3-butadiene. A. K. Kufanskii, A. P. Belu'kova, and K. K. Chevchakova. *Applied Chem.* (USSR) 19, 2016 (1976). A method has been worked out for obtaining 2,3-dichloro-1,3-butadiene by splitting off HCl from pure tetra-, tetra-, and pentachlorobutanes, as well as from mixts. of these chlorides, with an alk. soln. and passing through water vapor. The yield of the dichlorobutadiene is as high as 70%. Substituting Na_2CO_3 for KOH decreases the yield by 10%. with Na_2CO_3 there is no splitting off of HCl. I. S. Joffe

Inst. Org. Chem., AS USSR

METALLOGICAL LITERATURE CLASSIFICATION

C.A.

Determination of isobutylene in mixtures with n-butyl-
enes and butadiene. M. N. Marudam and A. P. Bel-
en'kaya, *Dokl. Akad. Khim.* 5, 338 (1957). This
method is based on pptg. isobutylene as a $HgSO_4$ complex.
Into a cylindrical vessel place $HgSO_4$ soln. and pass 100 cc.
of gas from a measuring buret through a capillary into the
soln. Allow the ppt. that forms to stand for 30-40 min.,
filter, rinse vessel 1-2 times with filtrate, preferably warmed,
wash ppt. with H_2O to neutral (methyl orange) reaction,
dry at $50-60^\circ$, and keep in desiccator to const. wt. Calcd.
from $39.00 a / p$ where a is wt. of ppt., T is temp., p is
pressure in mm. Hg, and 39.00 is a const. obtained from
 $22.400 \times 791 / 1362 \times 273$ where 1362 is the mol. wt. of the
ppt. For iso- C_4H_8 up to 3° , use 30 ml. of $HgSO_4$ soln.
contg. 10 g. of salt per l. For $5-7^\circ$ of iso- C_4H_8 use 30 ml.
of soln. contg. 33 g. l. And for up to 10° , use 50 ml. of
same soln. The time of analysis can be shortened by dis-
solving the ppt. in 10 ml. of hot HNO_3 , dil. the soln. to 100-
150 ml., and titrate Hg with KCNS. M. Hosen

BELEN'KAYA, A.P.

FISHER, L.B.; BELEN'KAYA, A.P.; MARUSHEIN, M.N. [deceased].

Catalytic dehydrogenation of butane to butene over catalysts obtained from local raw materials. Izv. vost. fil. AN SSSR no. 1:53-59 '57.
(MIRA 12:4)

1. Vostochno-Sibirskiy filial AN SSSR.
(Butane) (Dehydrogenation) (Kaolin)

BELEN'KAYA, A. P. 62-11-20/29

AUTHORS: Kazanskiy, B. A., Sterligov, O. D.,
Belen'kaya, A. P., Kondrat'yeva, G. Ya.,
Pavlova, P. S.

TITLE: Determination of the Unsaturation of Isopentane-Isoprene-
Isoamylene Mixtures According to Bromometric Methods.
(Opredeleniye nepredel'nosti izopentan-izopren-
izoamilenovykh smesey bromometricheskimi metodami).

PERIODICAL: Izvestiya AN SSSR, Otdelenie Khimicheskikh Nauk, 1957,
Nr 11. pp. 1399-1400 (USSR)

ABSTRACT: Here a relative evaluation of the exactness of the methods
of bromometrical determination of the unsaturation and the
selection of the most useful method for the analysis of the
isopentane-dehydration catalysates is brought. Examining
the bromometric methods of K. W. Rosenmund (reference 1),
G. D. Gal'pern (reference 2) and Virabyants with artificial
mixtures showed that in dependence of the composition of the
isopentane-isoprene-isoamylene mixtures the exactness of the
determination of the total unsaturation according to the
methods of Rosenmund and Gal'pern can vary absolutely from
1 to 3 %. When introducing correcting coefficients the

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Determination of the Unsaturation of Isopentane-Isoprene-
Isocamylene Mixtures According to Bromometric Methods.

62-11-20/29

exactness of the determination can be raised to $\pm 1\%$.
Virabyants' method is useless for these mixtures. It is
shown that under the conditions for the bromination, which
were investigated, the 2-methylbutene-1 binds more than
one bromine molecule. There are 4 tables, and 3 references,
1 of which is Slavic.

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

SUBMITTED: July 5, 1957.

AVAILABLE: Library of Congress

Card 2/2

S/595/60/000/000/006/014
E196/E435

AUTHORS: Kazanskiy, B.A., Sterligov, O.D., Belen'kaya, A.P.,
Kondrat'yeva, G.Ya.

TITLE: Catalytic dehydrogenation of isopentane

SOURCE: Vsesoyuznoye soveshchaniye po khimicheskoy pererabotke
neftyanykh uglevodorodov v poluprodukty dlya sinteza
volokon i plasticheskikh mass. Baku, 1957. Baku, Izd-
vo AN Azerb.SSR, 1960, 207-218

TEXT: Due to the lack of published information, the
authors investigated the process of dehydrogenation of isopentane,
which yields as the intermediate product isoamylenes, and, as the
final product, isoprene, the monomer of synthetic rubber. The
chrome-alumina catalyst K-544 was used. This catalyst, developed
by M. N. Marushkin of IOKh AN SSSR, proved suitable for dehydro-
genation of n-butane and propane; it is highly active chemically
and has a high mechanical strength. All experiments were
conducted in the following manner: fresh or reactivated catalyst
in portions of 20 cm³ was heated in a quartz tube to the reaction
temperature in a current of air. The air was then purged by
nitrogen and isopentane was introduced in the tube. The liquid
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Catalytic dehydrogenation ...

S/595/60/000/000/006/014
E196/E435

reaction products were condensed by cooling with solid carbon dioxide, noncondensibles were collected in a gasholder. The unsaturated hydrocarbons in the condensate were estimated bromometrically by the Rosenmund and Halpern methods, isoprene was separately determined by weighing its adduct with maleic anhydride or colorimetrically by the method of R. F. Robey and H.V. Wiese. The catalyst was regenerated after each run by passing a current of air for one hour at the reaction temperature. Experiments have shown that during hourly working cycles in the temperature range 500 to 575°C and that of space velocities 0.3 to 4.2 hr⁻¹, the activity of the catalyst increased with temperature, reaching a maximum at 550°C, maintained independently of the space velocity in the range 0.7 to 2.6 hr⁻¹. Under those conditions the catalysate from isopentane contained up to 58% of unsaturated hydrocarbons, the yield of the latter being 45 to 49% on total isopentane and 70 to 90% on the decomposed isopentane. The productivity of the catalyst sharply increased with temperature, reaching the optimum value, about 700 g C₅H₁₀ / l/hr at 550°C and space velocity 2.6 hr⁻¹. Thus 550°C was the best operating point of this catalyst.

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Catalytic dehydrogenation ...

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The noncondensable gas^{was} found to consist largely of hydrogen with some methane. The liquid products were analysed for the individual unsaturated components by means of gas chromatography and light scattering; the results are given in Table 1. Analytical difficulties in the estimation of the unsaturated components by means of the Raman scattering spectra are discussed. They arise from the fact that the 1640 cm^{-1} line of isoprene is 12 times more intensive than the 1642 cm^{-1} line of 3-methylbutene-1. The masking effect of isoprene is therefore very strong and it tends to affect even the 1651 cm^{-1} line of 2-methylbutene-1. In the chemical determination of total unsaturation of the catalysate, the Rosenmund method was found to give high values while the Halpern method gave low values. The correction factors which had to be applied were 0.96 and 1.04 respectively. Academicians N.D.Zelinskiy, A.A.Balandin, B.A.Kazanskiy, Corresponding Member AS USSR N.I.Shuykin, Yu.G.Mamedaliyev as well as V.T.Aleksanyan, Kh.Sterin of Komissiya po spektroskopii AN SSSR (Commission on Spectroscopy AS USSR) and Candidate of Chemical Sciences, Head of Gazovaya laboratoriya (Gas Laboratory) of VNIGNI MNP SSSR are mentioned in the paper. There are 9 figures, 6 tables and Card 3/5

Catalytic dehydrogenation ...

S/595/60/000/000/006/014
E196/E435

4 references: 3 Soviet-bloc and 1 non-Soviet-bloc. The reference
to an English language publication reads as follows:
Ref.4: Robey R.F., Wiese H.V. Analyt. Chem., 20, 1948, 931.

Card 4/5

Catalytic dehydrogenation ...

S/595/60/000/000/006/014
E196/E435

Unsaturated components in catalysate % W/W Table 1.

| Fraction 20 - 38° | 500° | 525° | 550° |
|--------------------|------|------|--------------------|
| Total unsaturation | 18.6 | 41.6 | 52.2 |
| Isoprene | 0.4 | 1.5 | 4.2 |
| 2-methylbutene-2 | 10 | 15 | 20/25 ^x |
| 2-methylbutene-1 | 5 | 15 | 15/30 ^x |
| 3-methylbutene-1 | 3 | 3 | 5/35 ^x |

^xThe analysis was carried out before separation of dienes in the fraction 20-38°.

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БЕЛЕН'КАЯ, А. П.

AUTHORS: Kazanskiy, B. A., Member of the AN USSR, 20-4-20/52
Marushkin, M. N. (Deceased), Sterligov, O. D., and
Belen'kaya, A. P.

TITLE: The Catalytic Dehydrogenation of Isopentane
(Kataliticheskaya degidrogenizatsiya izopentana)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 117, Nr 4, pp. 619-622 (USSR)

ABSTRACT: From the economical point of view the use of isopentane is important for the increased supply of raw materials to the production of synthetic caoutchouc. The catalytic dehydration of isopentane to iso-amylenes and of these to isopren ($C_5H_{12} \rightarrow C_5H_{10} \rightarrow C_5H_8$) can be one of the ways of producing isopren. There is only little literature on this subject (references 1 - 3). So the investigation of this reaction is still very young. The second author produced at the institute (see "Association") an active alumochrome catalyzer for the dehydration of n-butane and propane which can be employed for the purpose discussed here. It consists of (in molar-%): Al_2O_3 88, Cr_2O_3 9, K_2O 3. The method of the dehydrogenation of isopentane is described. In the condensate (by means of dry ice) the total unsaturatedness was determined

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The Catalytic Dehydrogenation of Isopentane.

20-4-20/52

bromometrically according to Rosenmund (reference). The proportion of isopren as to weight was determined by reaction with maleic aldehyde. The activity of the catalyzer is increased when the temperature rises. It reaches its highest stage at 550°. The productivity is rapidly increased when the reaction temperature and the supply of raw materials are increased. At 575° the productivity of the catalyzer decreases (figure 3) as well as its selectivity as a result of the increasing cracking reaction (figure 1). At the optimal temperature of 550° stability, degree of contamination, and the most profitable duration of the working cycle were stated. The average activity (productivity) per cycle decreases with the extension of the cycle. Figure 4 shows that the selectivity is independent of the degree of contamination. When the working period lasts for more than 8 hours without interruption the degree of dehydration falls to almost 1/3 during the first 4 hours and then remains so without noticeable changes. After the regeneration the catalyzer completely reaches its initial activity. The contamination is obviously connected with the disturbance of the catalyzer by deposits of "coke". When the temperature rises from 500° to 550° the proportion of total unsaturatedness almost triples. The concentration of isopren increases tenfold, the concentration of

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The Catalytic Dehydrogenation of Isopentane.

20-4-20/52

2-methylbutene-2 almost doubles, of 2-methylbutene-1 trebles whilst the proportion of 3-methylbutene-1 hardly changes. Within the range of these temperatures 2-methylbutene-2 and 2-methylbutene-1 prevail whilst the other two substances are contained in small quantities only. Table 2 shows that one has to be careful in employing the spectrums of the dispersion of light combinations to the analysis of the substances discussed here, as the lines of isopren and 3-methylbutene-1 overlap. With small proportions of isopren already line 1640 cm^{-1} (of 3-methylbutene-1) but also line 1651 cm^{-1} (of 2-methylbutene-1) which leads to sharply increased results for the last two. There are 4 figures, 2 tables, and 4 references, 3 of which are Slavic.

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

SUBMITTED: July 22, 1957

AVAILABLE: Library of Congress

Card 3/3

BELEN'KAYA, A. P.

AUTHORS: Kazanskiy, B. A., Sterligov, O. D., 75-1-23/26
Belen'kaya, A. P., Kondrat'yeva, G. Ya., Pavlova, P. S.

TITLE: Bromometric Methods of Determining Unsaturated Hydrocarbons in Isopentane-Isoprene-Isoamylene Mixtures (Opredeleniye nepredel'nosti izopentan - izopren - izoamilenovykh smesey bromometricheskimi metodami)

PERIODICAL: Zhurnal Analiticheskoy Khimii, 1958, Vol 13, Nr 1, pp 134-141, (USSR)

ABSTRACT: In the catalytic dehydrogenation of isopentane a mixture of 5 components forms - the initial product, 3 isopentenes and isoprene. The quantitative relation of the components depends on the reaction conditions. In the present paper the reliability of the three bromimetric methods - according to Rosenmund (Reference 3), Gal'pern (Reference 5) and Vyrabiants (Reference 6) is examined. This control was investigated in pure C₅-hydrocarbons and also in various artificial mixtures of isopentane with isopentenes and isoprene which differed in the number of components and also in their concentration. It became evident that the method according to Vyrabiants is not

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75-1-23/26

Bromometric Methods of Determining Unsaturated Hydrocarbons in Isopentane-Isoprene-Isoamylene Mixtures

suitable for an analysis of such mixtures, because the error assumes different values and attains up to 7 - 8 % (absolute). The results obtained according to Rosenmund and Gal'pern confirm the fact that the accuracy of the determination of double bonds depends on the structure of the hydrocarbons and on the composition of the mixture: 2-methyl-butene(2) and 3-methyl-butene(1) without difficulty absorb 1 bromine molecule on bromination. 2-methyl-butene(1) and isoprene consume more than 1 bromine molecule and therefore yield too high results, relative to a double bond, in the determination according to Rosenmund and Gal'pern. The analysis of mixtures with 3 or 4 components, but without isoprene, showed an average absolute error of the determination of the olefines of ± 1 %. On addition of isoprene to the mixtures with 3 components the absolute error increases to ± 3 %. The analysis of mixtures with 5 components showed that the absolute error in the case of an isoprene content up to 20 % in the method according to Rosenmund on the average amounts to ± 3 % and according to the method by Gal'pern -2 %. As the average error in the

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Bromometric Methods of Determining Unsaturated Hydrocarbons in Isopentane-Isoprene-Isoamylene Mixtures

determination of the total number of double bonds in mixtures of 5 components according to both methods has a systematic nature, it can be taken into account by the introduction of a corresponding coefficient (in the case of an isoprene content up to 20 %). It was shown that the values for the total number of double bonds which were once determined according to Rosenmund and once according to Galápern practically coincide after the introduction of a correction coefficient. As the method of bromination only makes possible a sum determination for alkenes and dienes, the content of monoolefines can only be determined from the difference between the total number of double bonds and the content of dienes. In the present case an appropriate correction which takes into account the content of isoprene must therefore be applied to the bromimetric results for determining the content of isopentenes. For the determination of isoprene the photometric method according to Robey and Wiese (Reference 17) was employed which is well applicable in the presence of monoolefines, but also of some dienes. The average

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Bromometric Method of Determining Unsaturated Hydrocarbons in
Isopentane-Isoprene-Isoamylene Mixtures

error of this determination is less than 1 % (absolute). Determination takes 1 1/2 hours, which time can be shortened in series determinations to 20 minutes for one determination. When the concentration of isoprene in isopentane-isoprene-isopentene mixtures has been determined in this manner, the content of isopentenes (P) can be calculated according to the formula $P = a.P' - b$. P is the found total number of double bonds in the mixture, b is the concentration of isoprene in the mixture and a is the correction coefficient. In the method according to Rosenmund $a = 0,96$ and in the method according to Gal'pern $a = 1,04$. All performed tests are exactly described. During the elaboration of this method a short article by Timofeyeva and collaborators (Reference 16) on the same problem was published. In this article a correction coefficient is introduced in the final formula of the calculation which only takes into account the error produced by the inexact bromination of isoprene.

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75-1-23/26

Bromometric Methods of Determining Unsaturated Hydrocarbons in
Isopentane-Isoprene-Isoamylene Mixtures

There are 1 figure, 5 tables, and 21 references, 15 of
which are Slavic.

ASSOCIATION: Institute for Organic Chemistry im. N.D. Zelinskiy, AS USSR,
Moscow (Institut organicheskoy khimii im.
N.D.Zelinskogo AN SSSR, Moskva)

SUBMITTED: April 8, 1957

AVAILABLE: Library of Congress

1. Hydrocarbons - Determination

Card 5/5

25393

S/080/61/034/002/013/025
A057/A129

S.3400

AUTHORS: Puzitskiy, K.V., Sterligov, O.D., Belen'kaya, A.P., Eydas,
Ya.T.

TITLE: Preparation of carboxylic acid esters from amylene mixtures

PERIODICAL: Zhurnal Prikladnoy Khimii, v 34, no 2, 1961, 366-369

TEXT: Carboxylic acid methyl esters were obtained with a 55-63% yield by carbomethoxylation of amylene mixtures with different structure. The main product is methyl ester of α,α -dimethylbutyric acid, i.e., a carboxylic acid ester with a quaternary carbon atom in α -position. Amylenes are important for the manufacture of high-octane compounds in gasoline or for detergents. In a previous paper (Ref 3: ZhOKh, 30, 3799 (1960)) the present authors investigated syntheses of carboxylic acid esters from single amylenes with various structures using H_2SO_4 , CO and CH_3OH and observed that the main reaction product is always the methyl ester of α,α -di-

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S/080/61/034/002/013/025

A057/A129

Preparation of carboxylic acid esters ...

methylbutyric acid. Thus the latter was also to be expected as main reaction product from a mixture of amylenes. In the present experiments catalyzates of the dehydrogenation of iso-pentane and n-pentane, as well as the pentane-amylene fraction of thermal cracking products of gas oil (Tab.1) were carbocymethylated. Reactions and identification of the obtained esters were carried out in procedures described already in the previous paper (Ref 3). Conditions and the obtained results were presented in Table 2,3. There is 1 figure, 3 tables and 14 references: 6 Soviet-bloc and 8 non-Soviet-bloc. Three of the English-language references read as follows: F.C. Whitmore, F.A. Karnatz, J. Am. Chem. Soc., 60, 2533 (1938); D.V.N. Hardy, J. Chem. Soc., 464 (1938), J.M. Holbert, J. Am. Pharm. Assoc. Sci. Ed., 35, 315 (1946).

SUBMITTED: March 14, 1960

Card 2/5

STERLIGOV, O.D.; BELEN'KAYA, A.P.

Effect of the composition of aluminum-chromium-potassium oxide catalysts on their activity in dehydrogenation of isopentane. Izv. AN SSSR. Otd.khim.nauk no.5:800-805 My '62. (MIRA 15:6)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Catalysts) (Dehydrogenation) (Butane)

ZASLAVSKAYA, M.M., sanitarnyy vrach; BELEN'KAYA, A.S., sanitarnyy vrach

Field experience in sanitary control of the district water supply.
Gig. 1 san. 24 no.2:57-59 F '59. (MIRA 12:3)

1. Iz sanitarno-epidemiologicheskoy stantsii Sokol'nicheskogo
rayona Moskvy.

(WATER SUPPLY

sanitary control of district water works (Rus))

MEDVEDEV, A.S.; YERMINA, A.S.; BELEN'KAYA, B.I.

Hygienic neutralization of diphtheria bacteria carriers by
means of antibiotics. Zdrav. Turk. 4 no. 2:11-12 Mr-Apr '60.
(MIRA 13:10)

1. Iz kafedry infektsionnykh bolezney (zav. .. dotsent A.S.
Medvedev) Turkmenskogo gosudarstvennogo meditsinskogo instituta
im. I.V. Stalina.

(DIPHTHERIA) (ANTIBIOTICS)

TIKHOMIROVA, G.P.; BELEN'KAYA, F.I.; MADIYEVSKAYA, R.G.; LESHCHINSKAYA, F.I.

Polarographic behavior of trimethylhydroquinone. Ukr.khim.zhur. 29
no.12:1306-1310 '63. (MIRA 17:2)

1. Ukrainskiy nauchno-issledovatel'skiy institut pishchevoy promysh-
lennosti i Kiyevskiy vitaminnyy zavod.

BELENKAYA, G. M.

1

1953. Virulence of the microflora of wounds of the extremities resulting from sharp trauma and its consequences. G. M. Belenkaya *Oncopedia*, 1953, No. 3, 52-56. *Referat A Biol* 1958 Abstr No 75787. The microflora of isolated injuries was investigated in three groups of patients: (i) with open fractures and proliferation of the tissue of the ungual phalanges; (ii) with non-proliferating open and closed fractures; (iii) with suppurating wounds after a restoration operation. The virulence of staphylococci and colon bacillus (the most frequent components of the microbe association) was studied. One and the same types of microbes were detected at different stages of trauma of the extremities, in different relation and with different virulence. Microbes non virulent prior to operation initiated suppuration after operation in a series of cases. A predominately colon bacillus microflora is found in tissues removed at the time of operation. A distinct prevalence of staphylococci and sporing bacilli is noted in fresh wounds. Alteration of the physiological condition of an organism after operative interference enables the activation of microbes non-virulent till that time. (Russian)
C. Pringle

Cand. Biol. Sci.

Cent. Inst. TRAUMATOLOGY & ORTHOPEDICS

~~BELEN'KAYA, G.M.~~
PRIOROV, N.N., professor; KASAVINA, B.S., doktor biologicheskikh nauk;
BELEN'KAYA, G.M., starshiy nauchnyy sotrudnik.

Use of hyaluronidase in treating sequels of trauma. Khirurgia
no.6:15-19 Je '55. (MLRA 8:10)

1. Iz Tsentral'nogo instituta travmatologii i ortopedii (dir.-
chlen-korrespondent AMN SSSR prof. N.N.Priorov) Ministerstva
zdravookhraneniya SSSR.

(WOUNDS AND INJURIES, compl.
seq. ther. hyaluronidase)
(HYALURONIDASE, ther. use
seq. of trauma)

1 ✓ "Roidase" ointment. B. S. Kasavina and G. M. Belen'kaya. U.S.S.R. 104,090, Oct. 28, 1958. An ointment for external application is prepd. from an ext. of fresh or frozen spermatozoa of bulls dried at 25-35°. The ointment has a pronounced hyaluronidase enzymic activity. It is particularly effective for treatment of lesions, scars, and burns from ionizing radiation. M. Hoesch

2

PRIOROV, N.N., professor; KASAVINA, B.S., doktor biologicheskikh nauk;
BELEN'KAYA, G.M.; NIKOLAYEVA, Ye.A.

Some results of enzyme therapy for traumatic sequelae. Khirurgiia
32 no.4:41-46 Ap '56. (MLBA 9:8)

1. Chlen-korrespondent AMN SSSR (for Priorov). 2. Iz tsentral'nogo
nauchno-issledovatel'skogo instituta travmatologii i ortopedii
(dir. chlen-korrespondent AMN SSSR prof. N.N.Priorov)

(WOUNDS AND INJURIES, therapy,
hyaluronidase in traum. sequelae (Rus))

(HYALURONIDASE, therapeutic use,
traum. sequelae (Rus))

EXCERPTA MEDICA Sec 9 Vol 13/3 Surgery Mar 59

1637. RAPID METHOD OF DETERMINATION OF SENSITIVITY OF WOUND
MICROORGANISMS TO ANTIBIOTICS (Russian text) - Belenkaya G. M.
- LAB DELO 1957, 1 (35-36)

In this method the infectious material is inoculated into fluid media containing antibiotics. The method permits determination of the antibiotic sensitivity of the combined wound microflora. Results are read 18-20 hours after inoculation. (S)

BELEN'KAYA, G.M.; VOTYAKOV, V.I.

Lymphadenitis caused by Clostridium perfringens. Khirurgia,
33 no.1:113-114 Ja '57 (MLRA 10:4)

1. Iz Tsentral'nogo nauchno-issledovatel'skogo instituta
travmatologii i ortopedii (dir.-chlen-korrespondent AMN SSSR prof.
N.M. Priorov) i Gosudarstvennogo kontrol'nogo instituta imeni
Tarasevicha (dir. S.I. Didenko)

(LYMPHADENITIS, etiol. ' pathogen.
Clostridium perfringens) (Rus)
(CLOSTRIDIUM PERFRINGENS, infect,
lymphadenitis) (Rus)

BELEN'KAYA, G.M.

BELEN'KAYA, G.M.

Determining the sensitivity of microbe associations to antibiotics during the treatment of suppurating wounds. Zhur.mikrobiol.epid. i immun., supplement for 1956:45-46 '57 (MIRA 11:3)

1. Iz Tsentral'nogo instituta travmatologii i ortopedii Ministerstva zdravookhraneniya SSSR.
(ANTIBIOTICS) (BACTERIA, PATHOGENIC)

BELEN'KAYA, G.M.

SHLAPOBERSKIY, V.Ya.; BELEN'KAYA, G.M.

Fungus diseases following antibiotic therapy and effect of fungi on the course of wound healing [with summary in English]. Antibiotiki 2 no.6:30-34 N-D '57. (MIRA 11:2)

1. Tsentral'nyy institut travmatologii i prtopedii Ministerstva zdoravookhraneniya SSSR (dir. - deystvitel'nyy chlen ANH SSSR prof. N.N.Priorov)

(ANTIBIOTICS, injurious effects,
moniliasis, superinfect. in wds. ther. (Rus))

(WOUNDS AND INJURIES, therapy,
antibiotics, causing monilial superinfect. (Rus))

(MONILIASIS, etiology and pathogenesis,
antibiotic ther. of wds. (Rus))

SHLAPOBERSKIY, V.Ya.; BELEN'KAYA, G.M.

~~_____~~
Fungus diseases and complications in surgical practice (candidomycoses).
Mosp. khir. 3 no.6:34-42 N-D '58. (MIRA 12:1)

1. Iz Tsentral'nogo instituta travmatologii i ortopedii (dir. - deyst-
vitel'nyy chlen AMN SSSR prof. N.N. Priorov).

(MONILIASIS

in surg. dis., review (Rus))

BELEN'KAYA, G.M.
SILAYEVA, A.S.; BELEN'KAYA, G.M.

Differential diagnosis of tuberculous abscesses of soft tissues in the malar region. Stomatologiya 37 no.2:35-38 Mr-Apr '58.

(MIRA 11:5)

1. Iz kafedry chelyustno-litsevoy khirurgii i stomatologii (zav.-prof. N.M. Mikhel'son) Tsentral'nogo instituta usovershenstvovaniya vrachey i iz bakteriologicheskoy laboratorii Tsentral'nogo instituta travmatologii i ortopedii Ministerstva zdravookhraneniya SSSR (dir.-prof. N.N. Priorov).

(CHECK--ABCESS)

BELEN'KAYA, G.M.; GLADSETYIN, A.I.

Antibacterial activity and the sterility of dissolved antibiotics in relation to the duration and conditions of their preservation. Lab. delo 5 no.5:31-34 S-0 '59. (MIRA 12:12)

1. Iz TSentral'nogo instituta travmatologii i ortopedii (dir. - prof. N.N. Priorov), Moskva

(ANTIBIOTICS)

BELEN'KAYA, G.M.; GLADSHTEYN, A.I.; LORAN, I.D.; CHERTKOVA, F.A.

Standardization of lydase — a Soviet preparation of testicular
hyaluronidase. Lab. delo 8 no.4:28-32 Ap '62. (MIRA 15:5)

1. Tsentral'nyy institut travmatologii i ortopedii (dir. - deystvitel'nyy
chlen AMN SSSR prof. N.N.Priorov [deceased]) i Gosudarstvennyy kontrol'nyy
institut meditsinskikh biologicheskikh preparatov imeni L.A.Tarasevicha
(dir. L.S.Ogloblina).

(HYALURONIDASE)

BELEN'KAYA, G.M.; GLADSHEYN, A.I.

Nature of testicular hyaluronidase inhibitors in some biological fluids of the body. Zhur.mikrobiol., epid.i immun. 33 no.8:42-46 Ag '62. (MIRA 15:10)

1. Iz Tsentral'nogo instituta travmatologii i ortopedii
Ministerstva zdravookhraneniya SSSR.
(HYALURONIDASE) (BODY FLUIDS)

SHLAPOBERSKIY, V. Ya., prof.; BELEN'KAYA, G. M., starshiy nauchnyy
sotrudnik; MARKOVA, O. N., starshiy nauchnyy sotrudnik

Clinical bacteriological parallels in antibiotic therapy in
traumatology. Khirurgia 38 no.7:43-49 J1 '62.

(MIRA 15:7)

1. Iz Tsentral'nogo instituta travmatologii i ortopedii (dir. -
deystvitel'nyy chlen AMN SSSR prof. N. N. Priorov[deceased])
Ministerstva zdravookhraneniya SSSR.

(TRAUMATISM) (ANTIBIOTICS)

Precipitation chromatography of ions. K. N. Gapon and I. M. Belen'kaya. *Issledovaniya v Oblas'ti Khromatografii i Vsesoyuz. Sovetskaniya Khromatog., Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1950, 35-40 (Pub. 1052).—The previously reported results (cf. *C.A.* 47, 1459h) are discussed and addnl. discussion is given of chromatograms of the silicates. Chromatograms of the silicates often display zones of clear adsorbent between the ppts. Alteration of rings of the ppt. with rings of the pure adsorbent is observed in a ppt. of Fe(OH)₃ when the soln. contains Fe⁺⁺⁺ and Hg⁺⁺ ions. The better sepn. of zones in the method of pptn. chromatography, as compared with the usual chromatography, gives a better guarantee of true and clean sepn. of components in mixts. G. M. Kosolapoff

RF

CA

Determination of the absorptive capacity of ion-exchange materials. B. N. Gapon and I. M. Bolenkaya (K. A. Tshirryazeva Agr. Acad., Moscow). *J. Applied Chem. U.S.S.R.* 23, 1419 (1950) (Engl. translation).—A weighed amt. of adsorbent (I) was satd. with H_2^{++} by running 0.1 N BaCl₂ through it. Without washing, the H_2^{++} was eluted with 0.01 N HNO₃ and detd. as BaSO₄, and Cl⁻ was detd. as AgCl. The I used were chernosem (Suma and Budarino) soils, Na glauconite, alumina, and several zeolites. Rip G. Rice

..., akademik, otvetstvennyy redaktor; GAPON, Ye.N.; GAPON, T.B.;
 ZHYPAKHINA, Ye.S.; RACHINSKIY, V.V.; BELITSKAYA, I.M.; SHUVAEVA, G.M.;
 ROGINSKIY, S.Z.; YANOVSKIY, N.I.; FURS, N.A.; KISELEV, A.V.; HEYMARK, I.Ye.;
 SLINYAKOVA, I.B.; KHATSET, F.I.; LOSEV, I.P.; TROSTYANSKAYA, Ye.B.;
 TEVLINA, A.S.; DAVANKOV, A.B.; SALDADZE, K.M.; BRUMBERG, Ye.M.; ZHIDKOVA,
 Z.V.; VEDENEEVA, N.Ye.; NAPOL'SKIY, S.A.; MIKHAYLOVA, Ye.A.; KAZANSKIY, B.A.;
 RYABCHIKOV, D.I.; SHEMYAKIN, F.M.; KRETOVICH, V.L.; BUNDEL', A.A.; SAVINOV,
 B.G.; VENDT, V.P.; EPSHTEYN, Ya.A.

[Research in the field of chromatography transactions of the All-Union
 Conference on Chromatography, November 21-24, 1950] Issledovaniya v oblasti
 khromatografii; trudy Vsesoiuznogo soveshchaniya po khromatografii, 21-24
 noiabria 1950 g. Moskva, Izd-vo Akademii nauk SSSR, 1952. 225 p.

(MLRA 6:5)

1. Akademiya nauk SSSR. Otdelenie khimicheskikh nauk.

(Chromatographic analysis)

BELEN'KAYA, I. M.

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
General and Physical Chemistry

Precipitation chromatography of ions. E. N. Gusev
and I. M. Belen'kaya. *Colloid J. (U.S.S.R.)* 14, 303-06
(1952), *transl.*—See C.A. 47, 14594.

H. L. H.

9
② Chem
9/2/54
H.L.H.

S.3700
15.8170
AUTHORS:

S/190/62/004/004/015/019
B117/B138

Andrianov, K. A., Khananashvili, L. M., Belen'kaya, I. S.

TITLE:

Synthesis and polymerization of dimethyl cyclosiloxanes with silsesquioxane bonds

PERIODICAL:

Vysokomolekulyarnyye soyedineniya, v. 4, no. 4, 1962, 591-595

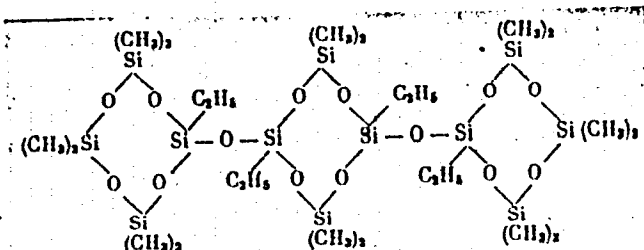
TEXT: Bi- and tricyclic compounds of the dimethyl siloxane series with

silsesquioxane bonds - O - Si $\begin{matrix} \diagup O - \\ \diagdown O - \end{matrix}$ were obtained by hydrolysis and con-

densation of hexamethyl ethyl cyclotetrasiloxane and tetramethyl diethyl cyclotetrasiloxane. The hydrolysis of the hydrogen-containing cyclotetra-siloxanes synthesized by the method described in Ref. 3 (N. N. Sokolov, Zh. Obshchey khimii, 29, 248, 1959) was carried out in alkaline medium (caustic soda) at room temperature, and the condensation in acid medium (hydrochloric acid, pH 5) at 40-45°C. The following substances were obtained: bis-(hexamethyl ethyl cyclotetrasiloxanyl)oxide (I) (Si₈C₁₆H₄₆O₉, boiling point 135-147°C/1-2 mm HG) and a tricyclic compound (II) with the structure:
Card 1/3

Synthesis and polymerization...

S/190/62/004/004/015/019
B117/B138



(Si₁₂C₂₄H₆₈O₁₄, boiling point 240-250°C/2·10⁻² mm Hg). Both compounds are readily soluble in benzene, toluene and ethyl alcohol. They easily polymerize at room temperature (in toluene solution in the presence of 0.3% KOH) (I) producing an insoluble polymer after 93 hr and (II) after 20.5 hr. The reactivity increases with a higher number of silsesquioxane links in the chain. The stronger reactivity of silsesquioxane bonds as compared with siloxane bonds is probably connected with the fact that the silicon atom bonded with three oxygen atoms is more electropositive and the attack of these bonds gets more effective during the action of nucleophilic reagents. There are 2 figures and 1 table.

Card 2/3

Synthesis and polymerization...

S/190/62/004/004/015/019
B117/B138

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.
V. Lomonosova (Moscow Institute of Fine Chemical Technology
imeni M. V. Lomonosov)

SUBMITTED: February 22, 1961

Card 3/3

LASTIKOV, M., inzh.; ASHKINAZI, B., inzh.-mekhanik (Baku); BELEN'KAYA, L., inzh.; ZHAMENSKIY, A.; ZAYTSEV, V.; CHERNYATEVICH, K., tekhnik-elektrik.

Suggested, created, introduced. Izobr.i rats. no.1:28-30 Ja '61. (MIRA 14:1)

1. Byuro ratsionalizatorov i izobretateley Pskovskogo oblastnogo upravleniya mestnoy promyshlennosti (for Lastikov).
2. Nachal'nik Byuro ratsionalizatorov i izobretateley, Leningrad (for Znamenskiy).
3. Starshiy inzhener Byuro ratsionalizatorov i izobretateley Dal'nevostochnogo parokhodstva, Vladivostok (for Zaytsev).
4. Dneprodzerzhinskly azotnotukovyy zavod (for Chernyatevich).
(Technological innovations)

S/180/62/000/006/002/022
E111/E451

AUTHORS: Tumanov, V.I., Funke, V.F., Belen'kaya, L.I.,
Usol'tseva, L.P. (Moscow)

TITLE: Influence of alloy additions on the surface tension of
metals of the iron group

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh
nauk. Metallurgiya i toplivo, no.6, 1962, 43-48

TEXT: The effect was investigated of alloy additions to nickel and cobalt on surface tension and weldability of alumina by them; the alloy additions studied were molybdenum, tungsten, titanium, copper, tungsten carbide and titanium carbide. The sessile drop method was used at a vacuum of 10^{-5} mm Hg and temperatures of about 1500°C (1400°C copper). Over the alloying range studied (0.5 to 20 at.%), a relationship was found between, on the one hand, the contact angle, surface tension, interfacial tension and work of adhesion and, on the other, the atomic diameter and thermal stability of the oxides of the alloy additions. With the carbides the greatest reduction in the contact angle and increase in the work of adhesion was obtained when 5% TiC was introduced into cobalt
Card 1/2

Influence of alloy ...

S/180/62/000/006/002/022
E111/E451

(the values then being 62°C and 3600 erg/cm², respectively). X-ray structural investigation was made of the contact zone between the alumina plate (made by sintering 99.4% Al₂O₃ in argon for 5 hours at 1950°C to give a porosity of 0.2%) and the alloy. Spinel formation was found to extend to a considerable depth with cobalt. With nickel, α-Al₂O₃ and NiAl₂O₄ were found on the plate at a point adjacent to the drop and α-Al₂O₃, NiAl₂O₄, TiC, TiO₂ and NiAl on the plate at the contact zone; NiAl₂O₄, Ni, TiC, TiO₂ and NiAl were found in the molten drop at the contact zone. Thus the interfacial activity of titanium is evidently due to a reaction between the liquid metal and the solid alumina. There are 5 figures and 5 tables.

SUBMITTED: March 16, 1962

Card 2/2

S/076/62/036/007/010/010
B101/B138

AUTHORS: Tumanov, V. I., Funke, V. F., and Belen'kaya, L. I.

TITLE: Wettability of aluminum oxide and of carbides by metals of the iron group

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 7, 1962, 1574 - 1577

TEXT: With the use of a slightly modified apparatus by V. N. Yeremenko, Yu. V. Naydich (Ukr. khim. zh., 23, 573, 1957), the surface tension σ , angle of contact θ , and the work of adhesion W_a were determined for the wetting of Al_2O_3 with Ni or Co, and with Ni-Mo or Co-W alloys, and the angle of contact was measured for the wetting of carbides of the system

TiC - WC with Ni. Measurements were made at 10^{-5} mm Hg, $1500^\circ C$.

Results: (1) Addition of Mo or W (up to 10 atom%) increases the wettability of Al_2O_3 with Ni or Co. The first 2 atom% of Mo or W addition show the strongest effect: σ rises from 1225 to 1500 erg/cm² with Ni + 2 atom% of Mo, and from 1560 to 1750 erg/cm² with Co + 2 atom% of W. (2) The fact
Card 1/2

Wettability of aluminum ...

S/076/62/036/007/010/010
B101/B138

that the surface tension values of Ni and Co ($\sigma_{Ni} = 1225 \text{ erg/cm}^2$; $\sigma_{Co} = 1560 \text{ erg/cm}^2$) are lower than published figures is attributed to the oxygen content of the metals used (Ni: 0.19% O_2 , Co: 0.34% O_2). The increase of θ on addition of Mo or W is caused by separation of O_2 owing to its reduced solubility in the alloy, or by formation of oxides. (3) From 38° at 100% TiC, the angle of contact diminishes slowly to 21° at 70% TiC + 30% WC, and then quickly to 0° at 100% WC. TiC is not completely wettable with Ni; two-phase TiC - WC alloys containing free WC are more wettable than solid TiC - WC solutions. There are 5 figures and 1 table. The most important English-language reference is: M. Humenik, W. D. Kingery, J. Amer. Ceram., 37, 18, 1954.

ASSOCIATION: Nauchno-issledovatel'skiy institut tverdykh splavov
(Scientific Research Institute of Hard Alloys)

SUBMITTED: November 28, 1961

Card 2/2

TUMANOV, V. I. (Moskva); FUNKE, V. F. (Moskva); BELEN'KAYA, L. I.
(Moskva); USOL'TSEVA, L. P. (Moskva)

Effect of alloying on the surface tension of iron group
metals. Izv. AN SSSR. Otd. tekhn. nauk. Met. i topl. no.6:
43-48 N-D '62. (MIRA 16:1)

(Surface tension) (Iron group)

DAVITAYA, F.F., otv. red.; ESLEN'KAYA, L.L., red.; ALEKSEYEV, A.G.,
tekn. red.

[Agroclimatic conditions and new possibilities in agriculture]
Agroklimaticheskie uslovia i novye rezervy v sel'skom kho-
ziaistve. Leningrad, Gidrometeor. izd-vo, 1961. 58 p.
(MIRA 15:2)

(Crops and climate)

ACCESSION NR: AT4030800

S/0000/63/000/000/0141/0151

AUTHOR: Tumanov, V. I., Funke, V. F., Belen'kaya, L. I. Usol'tseva, L. P.

TITLE: Effect of alloying on surface tension of the iron group metals and the wettability of aluminum oxide

SOURCE: AN UkrSSR. Institut metallokeramiki i spetsial'ny*kh splavov. Poverkhnostny*ye yavleniya v rasplavakh i protsessakh poroshkovoy metallurgii (Surface phenomena in liquid metals and processes in powder metallurgy). Kiev, Izd-vo AN UkrSSR, 1963, 141-151

TOPIC TAGS: cobalt alloy, nickel alloy, liquid phase surface tension, alloy surface tension, aluminum oxide, aluminum oxide wettability, cobalt copper alloy nickel copper alloy

ABSTRACT: The effects of alloying Co and Ni with Cu, Mo, W or Ti (0.5, 1.5 and 20 at. %), as well as carbides of the latter three (5 at. %), on the surface tension of the liquid phases and the wetting of Al_2O_3 were studied on alloy samples ($h = 5-6$ mm, $\phi = 12$ mm)

Card 1/6

ACCESSION NR: AT4030800

and Al_2O_3 substrates ($h = 4$ mm, $\phi = 20$ mm, porosity up to 0.2%). Tests were carried out in a vacuum (5×10^{-5} mm Hg) at about 1500C (1400C for Cu-containing alloys). The contact angle θ was determined experimentally, using the droplet-at-rest method (accuracy 1-2%). Surface tension σ_j , interphase tension σ_{si} and work of adhesion W_A were calculated. As shown in Fig. 1. of the Enclosure, addition of up to 1.0 at. % alloying elements, especially Cu, lowered θ , but further additions had little effect. Small amounts of alloying elements (0.5-1 at. %), except for Ti, also lowered σ_j (see Figs. 2 and 3 in the Enclosure). Alloying with 5 at. % tungsten carbide lowered θ and σ_j slightly in both Ni and Co; molybdenum carbide had no effect on these parameters in Ni and little effect in Co. Only titanium carbide lowered θ significantly in Ni (from 120 to 62°) and Co (from 120 to 90°), while simultaneously increasing the surface tension. X-ray diffraction patterns of the contact areas between the drop and the substrate show that reactions take place between the liquid metal and the substrate, resulting in formation of a transition layer containing CoAl_2O_4 and NiAl_2O_4 with a spinel structure. In the case of Ni alloyed with titanium carbide, the transition zone also contained TiC, TiO_2 and NiAl. The authors demonstrate relationships between θ , σ_j , σ_{si} and W_A , on

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ACCESSION NR: AT4030800

the one hand, and the atomic diameter and thermal stability of the alloying component oxides, on the other. The lowest Θ (62°) and maximal W_A (3600 ergs/cm^2) were found in Co + 5 at. % TiC. "The X-ray structural analysis was carried out by Eng. N. S. Urazaliyev." Orig. art. has: 5 tables and 6 graphs.

ASSOCIATION: Vsesoyuzn*y nauchno-issledovatel'skiy institut tverdy*kh splavov, Moscow (All-Union Scientific Research Institute for Solid Alloys)

SUBMITTED: 23Nov63

ENCL: 03

SUB CODE: MM

NO REF SOV: 005

OTHER: 006

Card 3/6

ACCESSION NR: AT4030800

ENCLOSURE: 01

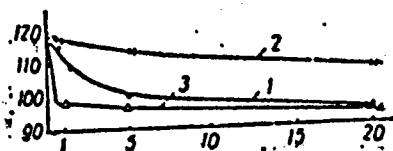


Fig. 1. Contact wetting angle (θ) for Ni, Co and their alloys on an Al_2O_3 substrate, alloyed with W (1), Mo (2) and Cu (3). Ordinate = θ in degrees; abscissa = at. % alloying element.

Card 4/6

ACCESSION NR: AT4030800

ENCLOSURE: 02

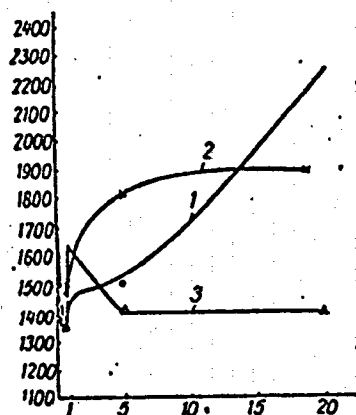


Fig. 2. Surface tension of Ni and its alloys (Al_2O_3 substrate), alloyed with W (1), Mo (2) and Cu (3). Ordinate = γ in ergs/cm²; abscissa = at. % alloying element.

Card 5/6

ACCESSION NR: AT4030800

ENCLOSURE: 03

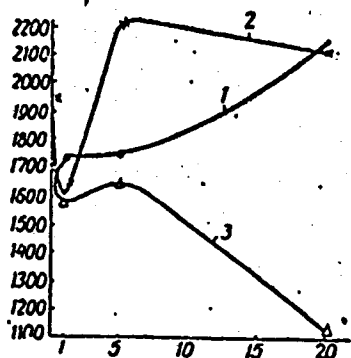


Fig. 3. Surface tension of Co and its alloys (Al_2O_3 substrate), alloyed with W (1), Mo (2), Cu (3), 0.5 at. % Ti (x). Ordinate and abscissa as in Fig. 2.

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L 23931-65 EPF(n)-2/EPR/EPA(s)-2/EWP(k)/EWT(m)/EWP(b)/T/EWA(d)/EWP(e)/
EWP(v)/EWP(t) Pf-4/Ps-4/Pt-10/Pu-4/Pad IJP(c) AT/WB/WW/JD/HV/HH/JG/
WB/MLK

ACCESSION NR: AT4030802

S/0000/63/000/000/0167/0171

AUTHOR: Tumanov, V. I.; Funke, V. F.; Belen'kaya, L. I.

TITLE: Wettability of NbC-VC and NbC-TiC carbide alloys by nickel

SOURCE: AN UkrSSR. Institut metallokeramiki i spetsial'nykh splavov. Poverkhno-
stnyye yavleniya v rasplavakh i protsessakh poroshkovoy metallurgii (Surface phe-
nomena in liquid metals and processes in powder metallurgy). Kiev, Izd-vo AN Ukr-
SSR, 1963, 167-171

TOPIC TAGS: nickel, carbide alloy, binary alloy, niobium carbide, vanadium car-
bide, alloy wettability, vanadium, titanium, niobium, nickel alloy, cemented car-
bide, cermet, nickel wetting action

ABSTRACT: Hot-compacted disks ($h = 4\text{mm}$, $\phi = 20\text{mm}$) of binary carbides (see Table 1
of the Enclosure) were tested for wettability by 99.9% pure electrolytic nickel.
The contact wetting angle θ was determined in a vacuum at 1400C, after a 15 minute
period required to attain equilibrium, using the droplet-at-rest method. The
best wettability of the carbide systems tested was observed at a ratio of compon-
ents NbC:TiC or NbC:VC equal or close to 1:1. This can be a result of a higher

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ionization of carbon atoms which neutralize negative metal ions and facilitate wetting, or a result of composition-dependent changes in the surface energy of solid solutions. Orig. art. has: 2 tables and 2 graphs.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh splavov, Moscow (All-Union Scientific Research Institute for Solid Alloys)

SUBMITTED: 23Nov63

ENCL: 02

SUB CODE: MM

NO REF SOV: 002

OTHER: 004

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ACCESSION NR: AT4030802

ENCLOSURE: 01

Table 1.
Pressing temperature and carbide properties

| Carbide composition, mol. % | Pressing temp., °C | Density, d g/cm ³ | Chemical composition | | G for Ni, degrees |
|-----------------------------|--------------------|------------------------------|----------------------|-----------|-------------------|
| | | | Total C, % | Free C, % | |
| NbC | 2400 | 6,9 | 11,51 | 0,36 | 21 |
| VC | 2100 | 3,74 | 19,78 | 2,48 | 14 |
| NbC-72 VC-28 | 2400 | 6,5 | 12,52 | 0,79 | 12 |
| NbC-48 VC-52 | 2200 | 6,0 | 15,45 | 1,75 | 9 |
| TiC | 2200 | 4,8 | 19,26 | 0,08 | 20 |
| TiC-16 NbC-84 | 2200 | 4,0 | 10,42 | 0,36 | 18 |
| TiC-32 NbC-68 | 2350 | 6,44 | 10,08 | 0,37 | 12 |

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ENCLOSURE: 02

Continuation of Table 1.

| | | | | | |
|----------------------|------|------|-------|------|----|
| TIC - 44 NBC - 56 | 2400 | 8.61 | 11.3 | 0.42 | 6 |
| TIC - 55 NBC - 45 | 2250 | 6.4 | 13.17 | 0.99 | 13 |
| TIC - 74 NBC - 28 | 2250 | 5.7 | 12.24 | 0.69 | 16 |
| TIC - 87 NBC - 13 | 2200 | 8.28 | 11.93 | 0.79 | 12 |

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BOOK EXPLOITATION

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Shishkin, Nikolay Sergeevich

B+1

Clouds, precipitation, and thunderstorm electricity (Oblaka, osadki i gromovoye elektrichestvo) (2nd ed., rev. and enl.) Leningrad, Gidrometeoizdat, 1964. 400 p. illus., biblio. 1250 copies printed. Managing editor: L.L. Balen'kaya; Technical editor: G. V. Ivkova; Proofreaders: T. V. Aleksyeva, T. S. Poltavets

TOPIC TAGS: cloud, precipitation, electrical storm, hydrometeor, convective cloudiness, condensation, coagulation

PURPOSE AND COVERAGE: This monograph was written for meteorologists and geophysicists, as well as for general research personnel, instructors at vuzes and technicians, and graduate and senior students at universities and special vuzes. The physical phenomena occurring in clouds and leading to the formation of precipitation and of electrical storms are described, and the bases of the theory of these phenomena and certain problems of active reactions in a cloud are described.

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Principal attention is directed toward Soviet studies.

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SUB CODE: ES

SUBMITTED: 17Feb64

NR REF SOV: 413

OTHER: 351

JTB
Card 3/3

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