

VOLNINA, N. V., kand.fiziko-matematicheskikh nauk

One problem on embedding for a field with the extended group of
an icosahedron. Uch. zap. Kalin gos. ped. inst. no.5:11-33 '58.
(MIRA13:10)

(Galois theory)

SHAPIRO, I.I.; FEDOTOV, P.G. Primalni uchastiye: PEGUSHEV, M.Ye.;
GRIGOR'YEVA, O.I.; POPOVA, L.P.; GONCHAROV, M.Ya.; VOLNISTOVA,
L.V.; SOROKINA, G.Ye., tekhn.red.

[General machinery industry time norms for establishing norms
for milling machine operations; small-lot and piece production]
Obshchemashinostroitel'nye normativy vremeni dlia tekhnicheskogo
normirovaniia rabot na frezernykh stankakh; melkoseriinoe i edi-
nichnoe proizvodstvo. Moskva, Gos.nauchno-tekhn.izd-vo mashino-
stroit.lit-ry, 1960. 142 p.

(MIRA 14:4)

1. Moscow. TSentral'noye byuro promyshlennykh normativov po
trudu. 2. Zaveduyushchiiy otdelom mashinostroyeniya TSentral'-
nogo byuro promyshlennykh normativov po trudu pri Nauchno-
issledovatel'skom institute truda (for Shapiro).

(Metalwork--Production standards)

CHERNYSHEV, A.M.; GESS, B.A.; KANAVETS, P.L.; MELENT'YEV, P.N.;
KHODAK, L.Z.; SOKOLOV, G.A.; BORISOV, Yu.I.; CHERNYKH, V.I.;
Prinimali uchastiye: VAVILOV, N.S.; MAKARCHENKO, V.G.;
KISELEV, G.P.; VOLNISTOVA, R.A.; MOREYEVA, G.P.

Testing granules made by the method of chemical catalysis
in a laboratory shaft furnace. Trudy IGI 22:70-78 '63.
(MIRA 16:11)

VOL'NOGORSKII, P.

VOL'NOGORSKII, P. Velikii put'. S kartoi sibirskoi zhelieznoe dorogi i 79 risunkami v tekstie. Moskva, 19Ch. 240 p. "Istochniki" ...: p. 47
DLC: DK755.V

SO: LC, Soviet Geography, Part I, 1951, Uncl.

VOL'NOGORSKIĬ, P.

Velikii put. S kartoi sibirskoi zhелеznoi dorogi i 79 risunkami v tekste.
/The Great route, with a map of the Trans-Siberian railway/. Moskva, K. I.
Tikhomirov, 1904. 240 p. illus., fold. map. (Po bielu svietu. Illustrirovannaia
geograficheskaia biblioteka, vvp. 2.)
"Istochniki": p. 4

DLC: DK755.V

SO: Soviet Transportation and Communications, A Bibliography, Library of Congress,
Reference Department, Washington, 1952, Unclassified.

VOLNOHRADSKY, R., MJC

Technic of sewing tendons. Acta chir. orthop. traumat. czech. 24
no.3:259-264 May 57.

(TENDONS, surg.
technic with radioopaque sutures (Cz))
(SUTURES
radioopaque sutures in tendon surg., technic (Cz))

VOLNOV, A. M., GUIENKO, G. B., ISAYEV, B. M. and MARGULIS, U. Ya.

"Distribution of Deep Doses in Water Phantom from Tele-Curie Units Charged with Radioactive Cobalt," Medgiz, 1955

VOL'KOV, D.A.; SOROKOV, L.S.

Geology of Bennett Island. Trudy NIIGA 123:5-18 '61.
(MIRA 14:10)

(Bennetta Island--Geology)

VOL'NOV, D.A.; YASHIN, D.S.

Interrelation between the Tyues-Salinskaya and Laparskaya series in the Cambrian of the northeastern part of the Olenok uphoaval and time of their formation. Trudy NIIGA 114:62-64 (MIRA 13:11) '60.

(Yakutia--Geology, Stratigraphic)

VOL'NOV, F.I.

Machine with an electric motor drive for bending pipes with a diameter of from 1/2 to 1". Rats. i izobr.predl.v stroi. no.124:
7-9 '55. (Pipe bending) (MLRA 9:7)

VOL'NOV, G. N.

*Electrolysis of Tin Chloride Solutions in Some Organic Solvents. E. G. Kur'mina and G. N. Vol'nov (Zhur. Fiz. Khim., 1954, 28, (2), 252-254). — [In Russian]. — Electrolysis of soln. of SnCl₄ in alcohols, carboxylic acids, and esters, using graphite electrodes, is accompanied by an increase of Cl⁻ concentration in the vicinity of the anode and evolution of Cl₂. Deposition of SnCl₂ + Sn and, in the case of SnCl₄ soln. in MeOH, deposition of Sn on the cathode takes place. A tentative scheme of dissociation of SnCl₄ complexes with alcohols, carboxylic acids, and esters is evolved. — S. K. L.

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Vol'Nov, G.N.

USSR/Chemistry - Electrolysis

Card 1/1 Pub. 117 - 14/27

Authors : Kuz'mina, E.G., and Vol'nov, G.N.

Title : Electrolysis of SnCl_4 solutions in certain organic solvents

Periodical : Zhur. fiz. khim. 28/2, 282-286, Feb 1954

Abstract : Experiments were conducted to determine the electrolysis (with graphite electrodes) of the following solutions : SnCl_4 -methyl alcohol, SnCl_4 - ethyl alcohol, SnCl_4 - isoamyl alcohol, SnCl_4 - acetic acid, SnCl_4 - amyl-acetate, SnCl_4 - butyric acid, SnCl_4 - ethyl formate and SnCl_4 - ethyl acetate. The electrolysis of SnCl_4 - acetic acid solution was carried out with an Ag-anode. An increase in Cl ion concentration and decrease in Sn ion concentration was observed in the anode space and vice versa in the cathode space. Cl was the product of electrolysis over an anode and an $\text{SnCl}_2 + \text{Sn}$ deposition was the electrolysis product over a cathode. Six references: 4-USSR; 1-USA and 1-German (1916-1948). Tables.

Institution :
Submitted : April 23, 1953

VOLNOV, DE IV

Electrolysis of stannic chloride solutions in some organic solvents. E. G. Kuz'mina and G. N. Vol'nov. *Zhur. Fiz. Khim.* 28, 232-6 (1954).—Sols. (4-20 mole %) of SnCl₄ in MeOH, EtOH, iso-AmOH, AcOH, AmOAc, PrCO₂H, HCO₂Et, or EtOAc were electrolyzed between graphite electrodes for 16-70 hrs. with a current of 2-30 ma. The anolyte after the expt. contained approx. 10% less Sn and 10% more Cl than the original soln., and the catholyte showed the opposite changes. The anolyte contained free Cl (which gradually reacted with the solvent), and on the cathode there was a deposit of Sn and SnCl₂. When a Ag anode was used, the amt. of AgCl agreed with Faraday's law. Thus, the complexes of SnCl₄ with org. compds., R, have the structure [SnCl_{4-n}R]₂ = [SnCl_{4-n}R]⁺⁺ + 2Cl⁻.

J. J. Bikerman

130

4-3

Silico-organic compounds. II. Hydrogenation and rearrangement of silicomethane derivatives. B. Dennyov and I. Volynov. (J. Gen. Chem. Russ., 1951, 2; 64-104).—Hydrogenation of org. Si compounds containing a C₂H₅ nucleus does not take place due to the antichalytic action of the Si. There is no resemblance between the behaviour of *tert*-alcohols and the corresponding Si compounds, which do not undergo hydrogenation in the substituted C₂H₅ rings, do not condense with PhOH, or react with phenylhydrazide. Compounds of the type RSiR', when heated with H₂ under pressure undergo the rearrangement: $2RSiR' \xrightarrow{H_2} R_2SiR' + RSiR'$. In the case of isobutyl- and isocamyl-triethylsilicomethane a more complex rearrangement and condensation takes place.

E. B. UVAROV.

METALLURGICAL LITERATURE CLASSIFICATION

~~VOL'NOV. I.F.~~

Heat alarm used for checking cooling conditions. Mashinostroitel'
no.3:33 Mr '57. (MLRA 10:5)
(Thermostat)

C.A

Experiments on cementing platinum-containing mother
liquors after silver nitrate crystallization. I. I. Val'nov.
Izv. Akad. Nauk S.S.S.R. Ser. Khim. No. 23,
132-4 (1940).—Immersing Cu electrodes in mother liquor
from the crystn. of AgNO_3 should plate out Ag and Pt. In
these expts. much Pt remained in soln. and is assumed to be
in complex form. M. Hosh

CA

Solubility isotherms at 55° and 75° of the ternary system $\text{Ca}(\text{ClO}_3)_2$ - CaCl_2 - H_2O . S. Z. Makarov and J. I. [?], Nov. Invest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk 1931, 201-4.—The ternary system was studied by the Schreinemakers "wet residue" method at 55° and 75°, and by using the data of others the polythermal diagram was detd. for the range 0-100°. At 55° the solid phases and the points on the soly. curve limiting their stability, given as percentage of $\text{Ca}(\text{ClO}_3)_2$ and percentage of CaCl_2 , resp., are: $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$: 0.0, 57.27 to 41.74, 29.09; $\text{Ca}(\text{ClO}_3)_2$: 41.74, 29.09 to 51.78, 21.04; $\text{Ca}(\text{ClO}_3)_2 \cdot 2\text{H}_2\text{O}$: 51.78, 21.04 to 71.75, 0.0. The corresponding data at 75° are: $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$: 0.0, 58.83 to 41.04, 34.03; $\text{Ca}(\text{ClO}_3)_2$: 41.04, 34.03 to 77.83, 0.0. The complete polythermal diagram shows 5 different regions, where the solid phases are, starting with those stable at the lowest temps.: $\text{CaCl}_2 \cdot 6\text{H}_2\text{O}$, α - $\text{CaCl}_2 \cdot 4\text{H}_2\text{O}$, $\text{Ca}(\text{ClO}_3)_2 \cdot 2\text{H}_2\text{O}$, $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$, and $\text{Ca}(\text{ClO}_3)_2$.

Ariki J. Miller

VCL*NOV, I. I.

PA 192T18

USSR/Chemistry - Oxidants

Jul/Aug 51

"Interaction of Potassium Peroxides With Carbon Dioxide," S. Z. Makarov, I. I. Vol'nov, Lab of Peroxidic Comps, Acad Sci USSR

"Iz Ak Nauk SSSR, Otdel Khim Nauk" No 4, pp 370-376

Established that, at 0° and 100° C, KO_2 and K_2O_4 react with CO_2 to form O_2 and K_2CO_4 (stable over wide temp range; not previously described in lit), which reacts with CO_2 to form $K_2C_2O_6$; latter decomps into $K_2C_2O_5$ and O_2 . At 250 and 500° C,

x

192T18

USSR/Chemistry - Oxidants (contd)

Jul/Aug 51

$K_2C_2O_6$ and $K_2C_2O_5$ do not form; K_2CO_4 in CO_2 atm decomps into O_2 and K_2CO_3 . Higher temp accelerate formation of K_2CO_4 from KO_2 and subsequent decompn of former.

x

192T18

USSR

Systems containing concentrated hydrogen peroxide. V. Thermal characteristics of the solid phases of the system $\text{Ca}(\text{OH})_2$ - H_2O - H_2O_2 . S. Z. Maharov and N. K. Grigor'eva. VI. Ternary system $\text{Mg}(\text{OH})_2$ - H_2O - H_2O_2 at 0° and 20°. S. Z. Maharov and I. I. Volnov (*Izvestia Akad. Nauk SSSR, Otdel. Khim. Nauk*, 1957, 598-603, 765-769).—V. The hydrates $\text{CaO}_2 \cdot 8\text{H}_2\text{O}$ and $\text{CaO}_2 \cdot \text{H}_2\text{O}$ readily lose H_2O , giving anhyd. CaO_2 at $< 100^\circ$. The perhydrate $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$ is unstable, eliminating O_2 at 48–70°, to give $\text{CaO}_2 \cdot 2\text{H}_2\text{O}$. VI. The solid phases found are MgO_2 , $\text{MgO}_2 \cdot 0.5\text{H}_2\text{O}$, and $\text{MgO}_2 \cdot \text{H}_2\text{O}$. R. TATCOE.

Vol. 100, 1

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USSR .

Systems with concentrated hydrogen peroxide. VI.
 Isotherms for the ternary system $H_2O_2-H_2O-H_2SO_4$ at 0
 and 20°. S. Z. Makarova and I. I. Vol'nos. Izvest. Akad.
 Nauk S.S.S.R., Otdel. Khim. Nauk 1954, 705-9; cf. C.A.
 49, 703c.—The soly. isotherms are given at 0° and +20°
 for H_2O_2 concns. ranging from 1.5 to 97.0%. It is establ-
 Roginskii. Doklady Akad. Nauk S.S.S.R. 94, 73-6(1954);
 cf. C.A. 48, 6027d.—The effect was detd of adding H_2SO_4 .

gn

VOL'NOV, I.I.

MAKAROV, S.Z.; VOL'NOV, I.I.

Study of systems containing concentrated hydrogen peroxide. Report no.6. Isotherms 0° and 20° of the ternary system: $Mg(OH)_2 - H_2O_2 - H_2O$. Izv.AN SSSR Otd.khim. nauk no.5:765-769 S-0 '54.

(MLBA 8:3)

1. Institut obshchey neorganicheskoy khimii im. N.S.Kurnakova Akademii nauk SSSR.

(Magnesium peroxide) (Hydrogen peroxide)

Vol/nov. 1954

Distr: 4843

27 The 75° solubility isotherm for the system $\text{Ca}(\text{ClO}_4)_2$ -
 $\text{Ca}(\text{OH})_2 \cdot \text{H}_2\text{O}$. I. I. Vol'gov, Izv. Akad. Nauk S.S.S.R.
 Khim. i Tekhn. Obshchestva Khim. Akad. Nauk S.S.S.R.
 24, 277-8 (1954).—Study of soly. in the system at 75° shows
 the formation of the anhyd. compd. $\text{Ca}(\text{ClO}_4)_2 \cdot \text{Ca}(\text{OH})_2$.
 This compd. is stable within the concn. range 52.6% $\text{Ca}(\text{ClO}_4)_2$.
 J. R. van Leeuwen

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[Handwritten signature]

VOL'NOV, I. I.

✓ Isotherms of solubility of system $\text{CaCl}_2\text{-Ca(OH)}_2\text{-H}_2\text{O}$.
 S. Z. Makarov and I. I. Vol'nov. *Izvest. Sektora Fiz.-*
~~*Khim. Anal., Inst. Obshch. i Neorg. Khim., Akad. Nauk*~~
~~*S.S.S.R. 23, 320-33(1954).*~~ Isotherms of soly. for 0-76°
 confirm that, depending on concn. and temp., only 2
 hydroxychlorides, $\text{CaCl}_2 \cdot 3\text{Ca(OH)}_2 \cdot 12\text{H}_2\text{O}$ and $\text{CaCl}_2 \cdot \text{Ca(OH)}_2 \cdot \text{H}_2\text{O}$, are formed by react'n of CaCl_2 solns. with
 Ca(OH)_2 , for which fields of sepn. and limits of stability are
 established. $\text{CaCl}_2 \cdot 3\text{Ca(OH)}_2 \cdot 12\text{H}_2\text{O}$ is stable in equil.
 with solns. contg. up to 33% CaCl_2 , up to 38.9°. $\text{CaCl}_2 \cdot$
 $\text{Ca(OH)}_2 \cdot \text{H}_2\text{O}$ is stable in equil. with solns. contg. 32-33%
 CaCl_2 , from 5 to 76°. Conditions for sepn. of CaCl_2 from
 solns. as hydroxychlorides can be detd. on the basis of the
 structure of polytherms. Eurilla Mayerle

① A MET

VOL'NOV, I.I.

Thermography of proxide compounds. Dokl.AN SSSR 94 no.3:477-479
Ja '54. (MLRA 7:1)

1. Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova.
Predstavleno akademikom I.I.Chornyayevym.
(Thermochemistry) (Peroxides)

VOL'NOV, I.I.

"Hydrogen peroxide." W.Schumb, C.N.Satterfield, R.L.Wentworth.
Reviewed by I.I.Vol'nov. Zhur.neorg.khim. 1 no.8:1932-1934 Ag
'56. (MLRA 9:11)

1. Laboratoriya perekisnykh soyedineniy, Institut obshchey i
neorganicheskoy khimii imeni N.S.Kurnakova, Akademii nauk SSSR.
(Hydrogen peroxide) (Schumb, W.) (Satterfield, C.N.)
(Wentworth, R.L.)

Vol'nov, I. I.

USSR/Inorganic Chemistry. Complex Compounds. C

Abs Jour : Ref Zhur - Khimiya, No. 8, 1957, 26440.

Author : Vol'nov, I. I., Chamova, V. N.,
Sergeyeva, V. P., Latysheva, Ye. I.

Inst :
Title : Research in Region of Synthesis of Super-
peroxides of Alkali Earth Metals. Report 1.
Interaction of $\text{CaO}_2 \cdot 8\text{H}_2\text{O}$ with Perhydrol
at about 100° .

Orig Pub : Zh. neorgan. khimii, 1956, 1, No. 9,
1937 - 1942.

Abstract : The bibliographic data (Traube W., Schulze W.,
Ber., 1921, 54, 1, 1626; Erlich P., Z. anorgan.
Chem., 1944, 252, 370) referring to the for-
mation of dark-cream colored paramagnetic pro-
ducts containing up to 4.5% of $\text{Ca(O}_2)_2$ at the

Card 1/2

VOL'NOV, I.I.

Thermal stability of calcium hydroxychlorides. *Izv. Sekt. fiz.-khim. anal.*
27:251-254 '56. (MIRA 9:9)

1. Institut obshchey i neorganicheskoy khimii imeni N.S. Kurnakova AN
SSSR. (Calcium chloride)

Vol'nov, I.I.

USSR/Inorganic Chemistry. Complex Compounds. C

Abs Jour : Ref Zhur - Khimiya, No. 8, 1957, 26441.

Author : Vol'nov, I.I.; Shatunina, A.N.

Inst : Academy of Sciences of USSR.

Title : Possibility of Preparing $Ba(O_2)_2$.

Orig Pub : Dokl. AN SSSR, 1956, 110, No. 1, 87 - 88.

Abstract : Assuming that the structure of $Ba(O_2)_2$ was similar to the structure of superperoxides of alkali metals, the authors estimated the value of the equilibrium constant of the reaction BaO_2 (solid) O_2 (gas) $\rightleftharpoons Ba(O_2)_2$ (solid) (1). Using the approximately determined values of $\Delta H_{298}^\circ = -14.2$ kcal and of $\Delta S_{298}^\circ = -45.4$ entr. units, the equilibrium pressures of O_2 were computed for the reaction (1) at 25, 100, 200, 210, 220, 230, 250 and 302° which were 32, 75, 2300, 3150,

Card 1/2

VOL'NOV, I.I.

"A new treatise on inorganic chemistry" [in French], vol. 1, by
Paul Pascal. Reviewed by I.I. Vol'nov. Zhur. neorg. khim. 2 no.1:
229 Ja '57. (MLBA 10:4)
(Chemistry, Inorganic) (Pascal, Paul)

558

AUTHOR: Vol'nov, I.I. and Latysheva, E.I.

TITLE: Research in the Field of the Synthesis of Alkali-Earth Metal Superoxides. II. Formation of $Sr(O_2)_2$ from $SrO_2 \cdot 2H_2O_2$. (Piski v Oblasti Sintezy Superoksidov Shchelochnozemel'nykh Metallov. II. Obrazovanie $Sr(O_2)_2$ iz $SrO_2 \cdot 2H_2O_2$.)

PERIODICAL: "Zhurnal Neorganicheskoy Khimii" (Journal of Inorganic Chemistry) Vol.II, No.2, pp.259-262. (U.S.S.R.) 1957

ABSTRACT: By the vacuum-drying of $SrO_2 \cdot 2H_2O_2$ at $50^\circ C$, that is at a temperature lower than the decomposition temperature of crystallisational hydrogen peroxide, and at a residual pressure of 10 mm. mercury, a peroxide preparation of strontium has been prepared for the first time which contains $Sr(O_2)_2$ in concentration of the order of 17.5 wt. %. The mechanism proposed by Kazarnovskiy⁴ for the formation of superoxide from peroxide perhydrates, based on the formation of the intermediate radicals OH and HO_2 has apparently been confirmed by the results obtained.

There are seven references, three of them Russian. Ref.4, quoted in the text, is:
I.A.Kazarnovskii and A.B.Neiding, DAN SSSR, Vol.86, No.4, p.717, 1956

There are 2 figures and 3 tables.

The work was carried out at the Institute of Inorganic Chemistry imeni Kurnakova of the Academy of Sciences of the USSR.
Received 4 August, 1956.

Card 1/1

AUTHOR: Vol'nov, I.I., Latyshev, E.I., and Chamova, V.N. 339

TITLE: Research in the Field of the Synthesis of Alkaline-Earth Metal Superoxides. III. Formation of $\text{Ca}(\text{O}_2)_2$ from $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$. (Poiski v Oblasti Sinteza Superoksidov Shchelochnozemel'nykh Metallov. III. Obrazovanie $\text{Ca}(\text{O}_2)_2$ iz $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$.)

PERIODICAL: "Zhurnal Neorganicheskoy Khimii" (Journal of Inorganic Chemistry, Vol. 11, No. 2, pp. 263-267. (U.S.S.R.)) 1457

ABSTRACT: Contrary to some theoretical expectations it has been found that $\text{Ca}(\text{O}_2)_2$ can exist in preparations containing relatively large quantities of CaO_2 . $\text{Ca}(\text{O}_2)_2$ in concentrations of the order of 16.5 wt % could be obtained regularly by vacuum-drying $\text{CaO}_2 \cdot \text{H}_2\text{O}_2$ at 500C at 10 mm Hg. The presence of $\text{Ca}(\text{O}_2)_2$ in such preparations has been established by chemical analysis, from heating curves and from magnetization measurements. On prolonged storage the $\text{Ca}(\text{O}_2)_2$ content decreases.

3 Figures, 3 Tables.

The work was carried out at the Institute of Inorganic Chemistry imeni Kurnakova of the Academy of Sciences of the U.S.S.R.

Received 1 September, 1956.

Card 1/1

VOL' NOV, I. I.

"Supplement to Moller's comprehensive treatise of inorganic
and theoretical chemistry" [in English] / Reviewed by I. I.
Vel'nov. Zhur. neorg. khim. 2 no. 4: 982 Ap '57. (MLBA 10:8)
(Chemistry, Organic)
(Chemistry, Physical and theoretical)

VOL'NOV, I.I.

VOL'NOV, I.I.; SHATUNINA, A.N.

Reactivity of superoxides of alkaline earth metals with H_2O and CO_2 . Zhur.neorg.khim. 2 no.7:1474-1478 J1 '57. (MIRA 10:11)

1. Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova AN SSSR.

(Alkaline earths) (Water) (Carbon dioxide)

VOL'NOV, I.I.

VOL'NOV, I.I.; LATYSHEVA, Ye.I.

Research in the field of synthesis of superoxides of earth alkali metals, Zhur.neorg.khim. 2 no.7:1696-1698 J1 '57. (MIRA 10:11)

1. Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova AN SSSR.

(Barium peroxide)

VOL'NOV, I.I.

"A new treatise on inorganic chemistry, volume 10: Nitrogen, phosphorus" [in French] by P. Pascal. Reviewed by I.I. Vol'nov. Zhur. neorg. khim. 2 no.12:2838 D '57. (MIRA 11:2)

(Nitrogen) (Phosphorus)
(Pascal, P.)

VOLINOV I.
VOLINOV, I.I.; SHATUNINA, A.N.

Formation of LiO_2 from $\text{Li}_2\text{O}_2 \cdot 2\text{H}_2\text{O}_2$. Izv. AN SSSR Otd. khim. nauk
no.6:762-763 Je 57. (MIRA 10:11)

1. Institut obshchey i neorganicheskoy khimii im. N.S. Kurnakova AN
SSSR.

(Lithium oxides)

VOLNOV, I. I.
 3
 1/ Recovery of calcium chloride from spent liquor (Solray process) through calcium hydroxychloride. I. I. Volnov and P. M. Laitshera. *Zhur. Priklad. Khim.* 30, 977-85 (1987).—The -20° isotherm of the system $\text{CaCl}_2\text{-Ca(OH)}_2\text{-H}_2\text{O}$ was detd. The solid phases ice , $\text{CaCl}_2\cdot 3\text{Ca(OH)}_2\cdot 12\text{H}_2\text{O}$ (I), and $\text{CaCl}_2\cdot 6\text{H}_2\text{O}$ were present. From these and earlier available data the polytherm was constructed; the triple point located at -6° , by interpolation, contained I-Ca(OH)_2 with only 6% CaCl_2 . Synthetic solns. contg. 10% and 22% CaCl_2 were studied. The former were prepd. by adding dry Ca(OH)_2 at $60\text{-}65^{\circ}$ to the soln. of CaCl_2 (A) and compared with solns. approaching the compn. of spent liquor, contg. CaCl_2 10.03, NaCl 4.89, Ca(OH)_2 0.09, CaSO_4 0.16, and NH_4OH 0.001 wt. %, d. 1.112 (A'). Solns. contg. 22% CaCl_2 were prepd. by the addn. of CaCl_2 to milk of lime at $60\text{-}65^{\circ}$ (B) and compared with solns. approaching the compn. of spent liquor which had been partially concd., contg. CaCl_2 21.5, NaCl 6.5, CaSO_4 0.89, Ca(OH)_2 0.03%, d. 1.24 (B'). Cooling slowly to 1° gave yields of CaCl_2 20.3 and 20.1% from A and A' and 51.5 and 65.7% from B and B'. The heating curves of I exhibited 2 endothermic effects: it was stable up to 60° , at 110° H_2O evapd., and at 140° Ca(OH)_2 decompd. to CaO and H_2O . Decompn. of I at 60° evapd. 14% H_2O (based on wt. of I) gave solns. contg. 24% CaCl_2 . I. Benaritz.

MT

Vol'nov

Vol'nov, I. I.

78-2-41/43

TITLE: On the Thermographic Curves of the Peroxyhydrates of the Metals of the Second Group (O krivykh nagrevaniya gidratov perekisey metallov vtoroy gruppy)

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1958, Vol. 3, pp. 538-540 (USSR)

ABSTRACT: The thermographic curves of the proxyhydrates of the metals of the second group of the periodic system were investigated with the aid of the recording pyrometer of Kurnakov. In a comparison of the thermographic curves of the octahydrate-peroxides of calcium, strontium and barium with the curves of the hydrated peroxides of magnesium and cadmium the great difference between these two thermographic curves is distinctly to be recognized. The thermographic curves of the octohydrate-peroxides of calcium, strontium and barium are characterized by three successive endothermic effects which represent the melting, dehydration and decomposition of the peroxide to oxide and oxygen. It was found that the thermal stability of the peroxides in-

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On the Thermographic Curves of the Peroxyhydrates of the
Metals of the Second Group

78-2-41/43

creases with increasing atomic weight of the element. Thus e. g. the thermal decomposition for CaO_2 lies at 380°C , for SrO_2 at 480°C and for BaO_2 at 790°C .

The thermographic curves of the hydrated peroxides of magnesium, zinc and cadmium are characterized by only one endothermic effect in the temperature range of from 100 to 115°C which corresponds to the dehydration of the peroxides and an exothermic effect which corresponds to the decomposition of the peroxides to the oxide form and oxygen.

With an increase in the atomic weight of the elements the decomposition temperature of the peroxide compounds of magnesium, zinc and cadmium decreases, thus e. g. the decomposition temperature for MgO_2 lies at 375°C , for ZnO_2 at 225°C and for CdO_2 at 195°C . The hydrated form of the peroxides of magnesium, zinc and cadmium does not occur as hydrate form of the peroxide of the type $\text{M}^{2+}\text{O}_2^{2-}$, but as $\text{OH.Me(O.OH).xH}_2\text{O}$. There are 1 figure and 3 references, all of which are Slavic.

Card 2/3

On the Thermographic Curves of the Peroxyhydrates of the
Metals of the Second Group

78-2-41/43

ASSOCIATION: Institute for General and Anorganic Chemistry imeni N. S.
Kurnakov AS USSR (Institut obshchey i neorganicheskoy
khimii imeni N. S. Kurnakova Akademii nauk SSSR)

SUBMITTED: May 9, 1957

AVAILABLE: Library of Congress

Card 3/3

VOL'NOV, I. I.

AUTHORS: Vol'nov, I. I., Chamova, V. N.,
Shatunina, A. N.

78-3-5-6/39

TITLE: V. The Formation of $\text{Ca}(\text{O}_2)_2$ by Irradiation of $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$
With Ultra-Violet Rays (V. Obrazovaniye $\text{Ca}(\text{O}_2)_2$
oblucheniye $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$ ultrafioletovymi luchami)

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1958, Vol 3, Nr 5,
pp 1095-1097 (USSR)

ABSTRACT: By irradiation of $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$ with ultra-violet light,
 $\text{Ca}(\text{O}_2)_2$ is obtained, the presence of which can only be
verified by chemical analysis.
The obtained preparation is lemon-coloured, similar to
 NaO_2 . The final product is not uniform.
The manufacturing process is difficult to reproduce.
In some cases the final product contains from 7-8%
 $\text{Ca}(\text{O}_2)_2$, and in others it has a higher content of from
10-14%.
 $\text{Ca}(\text{O}_2)_2$ was also obtained by irradiation of $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$
in a Fischer pistol consisting of quartz-glass, at a
temperature of 25-45°C.

Card 1/2

The Formation of $\text{Ca}(\text{O}_2)_2$ by Irradiation of $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$
With Ultra-Violet Rays

78-3-5-6/39

$\text{Ca}(\text{O}_2)_2$ is very unstable.
There are 1 table and 8 references, 5 of which are
Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S.
Kurnakova Akademii nauk SSSR (Institute of General
and Inorganic Chemistry imeni N. S. Kurnakov, AS USSR)

SUBMITTED: May 10, 1957

AVAILABLE: Library of Congress

1. Calcium oxides--Production
2. Calcium oxides--Properties
3. Ultraviolet rays--Applications

Card 2/2

I. I. Vol'nov, I. I.

AUTHORS: Vol'nov, I. I., Chamova, V. N. 78-3-5-7/39

TITLE: VI. Surface Effects on the Formation Process of $\text{Ca}(\text{O}_2)_2$
From $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$ (VI. Vliyaniye poverkhnosti na protsess
obrazovaniya $\text{Ca}(\text{O}_2)_2$ iz $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$)

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1958, Vol 3, Nr 5,
pp 1098-1099 (USSR)

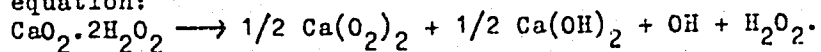
ABSTRACT: The dependence of the yield of $\text{Ca}(\text{O}_2)_2$ from the surface on
which $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$ is distributed, was determined.
The experiments have been performed on different
surfaces from 70-910 cm^2 . By the increase of the surface,
the yield of $\text{Ca}(\text{O}_2)_2$ in the final product is also in-
creased. On a surface of 910 cm^2 the yield reaches
40%. In case of further increase of the surface, from
910-3630 cm^2 , the yield of $\text{Ca}(\text{O}_2)_2$ is from 40-45%.
The obtained final products contain also calciumoxide,
calcium hydroxide, and calcium carbonate, besides $\text{Ca}(\text{O}_2)_2$.
E.g., the preparation produced on a surface of 3630 cm^2
exhibits the following composition: $\text{Ca}(\text{O}_2)_2$ - 44.99%,
 CaO_2 - 12.67%, $\text{Ca}(\text{OH})_2$ - 31.17%, CaCO_3 - 12.07%.

Card 1/2

VI. Surface Effects on the Formation Process of $\text{Ca}(\text{O}_2)_2$
From $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$

78-3-5-7/39

The obtained results indicate that the production process of $\text{Ca}(\text{O}_2)_2$ from $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$ proceeds according to the following equation:



There are 1 figure, 1 table, and 3 references, 3 of which are Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov, AS USSR)

SUBMITTED: April 17, 1957

AVAILABLE: Library of Congress

1. Calcium oxides...Production...Surface effects

Card 2/2

VOL'NOV, I.I.; IATYSHEVA, Ye.I.

Preparation of magnesium peroxide. Zhur. prikl. khim. 31 no.10:
1597-1599 0 '58. (MIRA 12:1)
(Magnesium oxides)

5(2)

SOV/76-4-2-2/40

AUTHORS:

Vol'nov, I. I., Chamova, V. N., Sergeyeva, V. P.

TITLE:

New Data on the Formation of Superperoxides of Calcium and Strontium (Novyye dannyye po obrazovaniyu nadperekisey kal'tsiya i strontsiya)

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 2, pp 253-256 (USSR)

ABSTRACT:

The optimum conditions for the production of $\text{Ca}(\text{O}_2)_2$ and $\text{Sr}(\text{O}_2)_2$ from $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$ and $\text{SrO}_2 \cdot 2\text{H}_2\text{O}_2$ were determined. The percentage of the $\text{Ca}(\text{O}_2)_2$ and $\text{Sr}(\text{O}_2)_2$ content in the decomposition products of $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$ and $\text{SrO}_2 \cdot 2\text{H}_2\text{O}_2$ depends on the temperature, time and surface area. A temperature of 50°C , a duration of 100 minutes, a surface area of 1800 cm^2 , and a pressure of 10 mm Hg are recommended for the production of $\text{Ca}(\text{O}_2)_2$ and $\text{Sr}(\text{O}_2)_2$. One gram initial sample of $\text{MeO}_2 \cdot 2\text{H}_2\text{O}_2$ is distributed on the surface of 1800 cm^2 . On the decomposition of $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$ the analyses of the solid phases formed show

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SOV/78-4-2-2/40

New Data on the Formation of Superperoxides of Calcium and Strontium

that with an increase of the percentage of $\text{Ca}(\text{O}_2)_2$ content the $\text{Ca}(\text{OH})_2$ content rises and the CaO_2 content drops. This dependence is caused by the occurrence of a secondary reaction between $\text{Ca}(\text{O}_2)_2$ and steam, or by the participation of hydroxyl radicals in the reaction. The transformation of $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$ into $\text{Ca}(\text{O}_2)_2$ mixed with solid siccatives (silica-gel, P_2O_5 , anhydrous CaO_2 , alkali hydroxides) or liquid rectifiers (absolute ethyl alcohol, CCl_4 , dioxane, diethyl phthalate) was investigated. The $\text{Ca}(\text{O}_2)_2$ content of the solid products is 40 weight %. On drying in a vacuum KO_2 and NaO_2 - containing products are formed from a mixture of $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$ and KOH or NaOH . Samples with 40 weight % $\text{Ca}(\text{O}_2)_2$ can be stored in hermetically closed vessels. With an extension of the surface area, on which the preparations are distributed, the $\text{Ca}(\text{O}_2)_2$ and $\text{Sr}(\text{O}_2)_2$ content of the reaction products in-

Card 2/3

New Data on the Formation of Superperoxides of Calcium and Strontium SOV/78-4-2-2/40

creases. There are 3 figures, 3 tables, and 4 Soviet references.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov of the Academy of Sciences, USSR)

SUBMITTED: November 3, 1957

Card 3/3

5(2)

AUTHORS:

Vol'nov, I. I., Shatunina, A. N.

SOV/78-4-2-3/40

TITLE:

The Formation of Lithium Superperoxide From $\text{Li}_2\text{O}_2 \cdot 2\text{H}_2\text{O}_2$
(Obrazovaniye nadperekisi litiya iz $\text{Li}_2\text{O}_2 \cdot 2\text{H}_2\text{O}_2$)

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 2,
pp 257-259 (USSR)

ABSTRACT:

Lithium peroxide is formed on drying $\text{Li}_2\text{O}_2 \cdot 2\text{H}_2\text{O}_2$ in vacuo at 100-120° and 10 Hg . A thin layer of the $\text{Li}_2\text{O}_2 \cdot 2\text{H}_2\text{O}_2$ sample was laid on the crystallizer surface and was dried. The change of the percentage of the LiO_2 -content of the preparation in dependence on temperatures of 100°, 120°, and 70°C and time, was investigated. The results are shown in figure 1. There is 1 figure, 1 table, and 12 references, 8 of which are Soviet.

ASSOCIATION:

Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov of the Academy of Sciences, USSR)

Card 1/2

5(2)

AUTHORS:

Vol'nov, I. I., Shatunina, A. N.

SOV/78-4-7-5/44

TITLE:

The Forming of NaO_2 From $\text{Na}_2\text{O}_2 \cdot 2\text{H}_2\text{O}_2$ (Obrazovaniye NaO_2 iz $\text{Na}_2\text{O}_2 \cdot 2\text{H}_2\text{O}_2$)

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 7,
pp 1491-1493 (USSR)

ABSTRACT:

The compound $\text{Na}_2\text{O}_2 \cdot 2\text{H}_2\text{O}_2$ was produced according to the slightly altered method by F. D'Ans (Ref 3) by the action of 98-99% hydrogen peroxide upon solid $\text{CH}_3\text{Na} \cdot 0.5 \cdot \text{CH}_3$. After the decay temperature of the crystalline compound had been determined as amounting to 152° by plotting a heating curve of this compound (Fig 1), the compound was dried in a vacuum at 70, 100 and 120° , i.e. below decay temperature. The peroxide-oxygen was determined gasometrically according to E. Seyb (Ref 4). The experimental results are given by table 1 and figure 2. Preparations with a content of about 30 weight % NaO_2 were obtained, which is considerably more than has hitherto been known in publications. There are 2 figures, 1 table, and 4 references.

Inst. Gen. & Inorg. Chem. in N.S. Kurnakov

SOV/75-14-2-18/27

5(2)

AUTHORS:

Vol'nov, I. I., Latysheva, Ye. I.

TITLE:

On the Separate Determination of Peroxide- and Superoxide Oxygen in Superoxides (O razdel'nom opredelenii perekisnogo i nadperekisnogo kisloroda v nadperekisyakh)

PERIODICAL:

Zhurnal analiticheskoy khimii, 1959, Vol 14, Nr 2, pp 242-243 (USSR)

ABSTRACT:

The differences in the character of linkage between the bridging oxygens in peroxides and superoxides become manifest in the hydrolysis of the compounds. Peroxides hydrolyze according to the equation $\text{Me}_2\text{O}_2 + 2 \text{H}_2\text{O} = 2 \text{MeOH} + \text{H}_2\text{O}_2$. Superoxides, on the other hand, hydrolyze according to the equation $2 \text{MeO}_2 + 2 \text{H}_2\text{O} = 2 \text{MeOH} + \text{H}_2\text{O}_2 + \text{O}_2$. In this case only $2/3$ of the active oxygen ("superoxide-oxygen") are transformed into O_2 , and only $1/3$ of the active oxygen ("peroxide-oxygen") forms hydrogen peroxide. Seyb and Kleinberg (Ref 4) devised a gasometric method of determining separately peroxide- and superoxide oxygen in NaO_2 and KO_2 . By this method diethylphthalate as buffer and then a mixture of glacial acetic acid and diethylphthalate are added to the weighed portion. Super-

Card 1/3

SOV/75-14-2-18/27

On the Separate Determination of Peroxide- and Superoxide Oxygen in Super-oxides

oxide oxygen is then separated and gasometrically determined. For the determination of peroxide oxygen the hydrogen peroxide formed in the acetic acid solution is then decomposed by a solution of ferric chloride in hydrochloric acid; the volume of the oxygen formed in this connection is measured. This method gives reproducible results in the analysis of alkali metal superoxides; for the analysis of preparations containing only small amounts of superoxides it is not suited because the weighed portions should be very high for the determination of peroxide oxygen. On the basis of the investigations on the separate determination of peroxide- and superoxide oxygen from a weighed portion the authors suggest the following method; the superoxide oxygen is gasometrically determined according to Seyb and Kleinberg. The gas formed in the preparation of the weighed portion with acetic acid must, however, also be analyzed with respect to CO₂ since a contamination of the superoxides by carbonates is unavoidable. Peroxide oxygen is, however, not gasometrically but only permanganometrically determined. An aliquot portion of the acetic acid solution still containing diethylphthalate is acidified with phosphoric acid (1:4) and titrated with a 0.1 n potassium permanganate solution. The results of the determina-

Card 2/3

5(2)

AUTHORS: Vol'nov, I. I., Kolotova, Ye. I. SOV/78-4-9-34/44

TITLE: The Solubility Isotherm -20° of the System $\text{Na}_2\text{SO}_4 - \text{H}_2\text{O}_2 - \text{H}_2\text{O}$

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 9, pp 2143-2145 (USSR)

ABSTRACT: It was the objective of the investigation to determine to what extent crystal water can be replaced by H_2O_2 . Reference is made to previous publications dealing with this subject (Refs 1-10), inter alia to the paper by M. I. Ozerova (Ref 8). The results are given in table 1 and in the phase triangle given in figure 1. The isotherm for -20° could be found in the H_2O_2 concentration range of 12 - 82 % by weight only, since aqueous H_2O_2 solutions with values below and above the values forementioned freeze at -20° . Beside the known hydrates $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$ and $\text{Na}_2\text{SO}_4 \cdot 4\text{H}_2\text{O}$ two chemical compounds with crystalline H_2O_2 were found: The already known compound $\text{Na}_2\text{SO}_4 \cdot 0.5\text{H}_2\text{O}_2 \cdot \text{H}_2\text{O}$ and the compound $\text{Na}_2\text{SO}_4 \cdot 3\text{H}_2\text{O}_2$, which was prepared for the first time and whose thermogram is given in figure 2. A comparison of the data found in the

Card 1/2

The Solubility Isotherm -20° of the System
 $\text{Na}_2\text{SO}_4 - \text{H}_2\text{O}_2 - \text{H}_2\text{O}$

SOV/78-4-9-34/44

relevant publications and those found by the authors suggests that the abovementioned system has to be investigated over a wide range of temperatures in order to clarify the laws governing the replacement of crystal water by H_2O_2 and to find the range in which these compounds can be formed. There are 2 figures, 1 table, and 12 references, 1 of which is Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova
Akademii nauk SSSR (Institute of General and Inorganic
Chemistry imeni N. S. Kurnakov of the Academy of Sciences, USSR)

SUBMITTED: June 12, 1958

Card 2/2

SOV/75-14-2-18/27

On the Separate Determination of Peroxide- and Superoxide Oxygen in Super-oxides

tion of peroxide- and of superoxide oxygen according to this method in technical NaO_2 and KO_2 and in peroxide preparations of calcium, strontium, and barium containing impurities of $\text{Ca(O}_2)_2$, $\text{Sr(O}_2)_2$ and $\text{Ba(O}_2)_2$ are listed in a table. The reliability of the determinations of peroxide oxygen was checked by control analyses with separate weighed portions. The differences in the results of the two determinations are in the order of magnitude of 0.03%. There are 1 table and 3 references, 6 of which are Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova AN SSSR, Moskva
(Institute of General and Inorganic Chemistry imeni N. S. Kurnakov of the AS USSR, Moscow)

SUBMITTED: December 4, 1956

Card 3/3

VOL'NOV, I.I.; CHAMOVA, V.N.

Mechanism of the transformation of $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$ into $\text{Ca}(\text{O}_2)_2$.
Zhur. neorg. khim. 5 no.3:522-523 Mr '60. (MIRA 14:6)

1. Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova
Akademii nauk SSSR, Laboratoriya perekisnykh soyedineniy.
(Calcium superoxide)
(Calcium peroxide)

20944

S/062/61/000/003/011/013
B117/B208

11.1190

AUTHORS: Tol'nov, I. I., Tsentsiper, A. B., and Chamova, V. N.

TITLE: Synthesis of tagged hydrogen peroxide from vapors of heavy oxygen water in a glow discharge

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, no. 3, 1961, 531

TEXT: The authors of the present "Letter to the Editor" report the realization of the $H_2O_2^*$ synthesis from H_2O^* -vapors containing 1.75 ± 0.01 atom% O^{18} in a glow discharge. They were extracted from the discharge gap and frozen out in a trap cooled by liquid nitrogen. The device used has been previously described (Ref. 1: A. I. Gorbanev, A. B. Tsentsiper, Izv. CO AN SSSR 1958, no. 5, 45). The glassy substance frozen out in the trap contained 28.4 wt% $H_2O_2^*$ after melting. The O^{18} content of this peroxide was 1.82 ± 0.01 atom% (mean value obtained from 35 mass-spectroscopic determinations of five samples). The concentration coefficient is 1.04. The method applied by the authors for preparing

X

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Synthesis of tagged hydrogen...

20911
S/062/61/000/003/011/013
B117/B208

H₂O₂^{*} is, according to their opinion, more convenient than that described in publications, since in this way a sufficiently concentrated and pure H₂O₂^{*} may be obtained directly. [Abstracter's note: This is a full translation from the original]. There is 1 Soviet-bloc reference.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov, Academy of Sciences USSR)

SUBMITTED: January 11, 1961

Card 2/2

25512

S/078/61/006/008/011/018
B127/B220

11.1190

AUTHORS: Vol'nov, I. I., Molodkina, A. N.

TITLE: Synthesis of hydrogen peroxide from elements by silent discharge

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 6, no. 8, 1961, 1952-1954

TEXT: A new convenient synthesis of H_2O_2 was developed based on methods described in the literature by N. I. Kobosev, I. A. Semiokhin, V. L. Sindukov (Zh. fiz. khimii, 34, 771 (1960)), S. Z. Makarov, I. I. Vol'nov, A. N. Atavina, T. V. Shatova (Otchet laboratorii perekisnykh soyedineniy AN SSSR, Moskva, 1950). The apparatus used is shown in Fig. 1. A tin foil on the inner wall of the external tube and a silver film on the outer wall of the internal tube served as electrodes. Reactions were effected on different parts of the electrode and with varying surfaces: 115-300 mm², 94-176 mm², and 24,000-62,500 mm². The inner tube of the discharge tube was treated with hot concentrated nitric acid, washed with distilled water, then treated with concentrated phosphoric acid, and again washed with distilled water. Without this treatment the

Card 1/3
2

Synthesis of hydrogen...

25512

S/078/61/006/008/011/018
B127/B220

yield did not exceed 50%. The apparatus was fed with line current, regulated and varied by an ЛАТР-1 (ЛАТР-1) and an electrolytic circuit breaker connected to the first winding of the coil ПУМКОФФ КУ = 150 (Rumkorf KT=150). The experiments were made at a voltage of 20kv and a frequency of 100cps. The amperage on the first winding of the inductor was 4.6-4.7a, on the tube, however, 5-7ma. The current density varied between 2 and $2.5a/mm^2 \cdot 10^{-7}$. The highest yield in H₂O₂ was observed at a content of 3.5-3.7vol% of O₂ in the initial mixture. The initial mixture was dried by using a Tishchenko phial filled with concentrated sulfuric acid. Then, it passed a copper coil cooled by liquid nitrogen. The pressure was maintained at 50 mm Hg in all reactions. The reaction time was 6 1/2 hr at a flow rate of 1 l/hr. The optimum working temperature was -170C, since the concentrated solution had to be maintained in liquid state. The reaction yield varied between 67.2 and 82.8% by weight of H₂O₂. There are 2 figures, 1 table, and 6 references: 3 Soviet-bloc and 3 non-Soviet-bloc. The reference to the English-language publication reads as follows: Ref. 6: T. Bellinger, Ind. Eng. Chem., 38, 627 (1946).

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im.
N. S. Kurnakova Akademii nauk SSSR (Institute of General and
Inorganic Chemistry imeni N. S. Kurnakov AS USSR)

Card 2/3

VOL'NOV, I.I.; SOKOVNIN, Ye.I.; MATVEYEV, V.V.

Synthesis of alkali metal ozonides by the interaction of super-oxides with ozonized oxygen. *Izv.AN SSSR.Otd.khim.nauk* no.6:
1127 '62. (MIRA 15:8)

1. Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova
AN SSSR.

(Ozonides) (Oxygen) (Superoxides)

CHERNYAYEV, I.I., akademik, red.; RAZUVAYEV, G.A., red.; VOL'NOV,
I.I., kand. khim. nauk, red.; DOBRYNINA, T.A., kand. ~~khim.~~
~~nauk~~, red.; DRAGUNOV, E.S., red. izd-va; MAKUNI, Ye.V., tekhn.
red.

[Chemistry of peroxide compounds] Khimiia perekisnykh soedi-
nenii. Moskva, Izd-vo AN SSSR, 1963. 313 p. (MIRA 16:12)

1. Akademiya nauk SSSR. Institut obshchei i neorganicheskoj
khimii. 2. Chlen-korrespondent AN SSSR (for Razuvayev).
(Peroxides)

Hydrates of sodium metasilicate...

2/052/03/000/002/001/020
B144/B186

with 4 - 20 % by weight H_2O_2 , and $Na_2SiO_3 \cdot 3H_2O_2 \cdot H_2O$ with 20 - 34 % by weight H_2O_2 . For the investigation at $15^\circ C$, $Na_2SiO_3 \cdot 3H_2O_2 \cdot H_2O$ was taken as initial substance. Equilibrium was obtained after 4 - 5 hrs. The phase diagram shows 2 solid phases: $Na_2SiO_3 \cdot 9H_2O_2 \cdot H_2O$ with 0 - 5 % by weight H_2O_2 and $Na_2SiO_3 \cdot 3H_2O_2$ with 5 - 42 % by weight H_2O_2 . The heating curve plotted for $Na_2SiO_3 \cdot 3H_2O_2 \cdot H_2O$ using a Kurnakov differential pyrometer showed an exothermic effect at $169^\circ C$ indicating the decomposition of the crystallized H_2O_2 , and an endothermic effect due to dehydration at $120^\circ C$. The general formula established for these compounds is $Na_2SiO_3 \cdot xH_2O_2 \cdot yH_2O$, where $x = 2.5 - 3$, and $y = 0 - 1$. There are 4 figures and 2 tables.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova
Akademii nauk SSSR (Institute of General and Inorganic
Chemistry imeni N. S. Kurnakov of the Academy of Sciences USSR)

SUBMITTED: May 18, 1962

Card 2/2

L 9881-63

EPF(c)/EWP(q)/BDS/EWT(m)/ES(b)--AFFTC/ASD--JD/JG

ACCESSION NR: AP3002299

S/0062/63/000/006/1136/1139

AUTHOR: Vol'nov, I. I.; Matveyev, V. V.

60
59

TITLE: Synthesis of cesium ozonide from cesium superoxide

SOURCE: AN BSSR. Izv. Otdeleniye khimicheskikh nauk, no. 6, 1963, 1136-1139

TOPIC TAGS: synthesis, cesium ozonide, cesium superoxide, ozonized oxygen, ammonia extraction, pure cesium ozonide, thermal stability of CsO sub 3, melting of CsO sub 2

ABSTRACT: High-purity CsO sub 3 has been synthesized for the first time from CsO sub 2 and ozonized oxygen. The starting materials were cesium superoxide containing 96.6% CsO sub 2 and 1% Cs sub 2 O sub 2, and oxygen containing about 8% ozone. The synthesis was conducted in a special molybdenum glass reactor at 40C for 1.5 hr in a fluidized bed created by a stream of the ozonized oxygen. Ozonized CsO sub 2 was extracted with liquid ammonia by means of a special apparatus. The average CsO sub 3 concentration in the products, as indicated by a determination of active oxygen and CsO sub 2,

Card 1/2

L 9881-63
ACCESSION NR: AP3002299

was 92.5%. CsO sub 3 is unstable to moisture and CO sub 2. Differential thermal analysis showed that its decomposition into CsO sub 2 and oxygen starts at 70C and attains a maximum at 100C. CsO sub 2 melts at 408C and then decomposes into Cs sub 2O and oxygen. Orig. art. has: 4 figures and 2 formulas.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry, Academy of Sciences USSR)

SUBMITTED: 23Jan63

DATE ACQ: 16Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 005

OTHER: 008

Card

2/2
2/2

ACCESSION NR: AP4039620

S/0076/64/038/005/1182/1187

AUTHORS: Vol'nov, I.I. (Moscow); Tsentsiper, A.B. (Moscow); Chamova, V.N. (Moscow); Laty'sheva, Ye.I. (Moscow); Kuznetsova, Z.I. (Moscow)

TITLE: Synthesis of oxygen-labeled hydrogen peroxide from dissociated heavy oxygen water in the glow discharge

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 5, 1964, 1182-1187

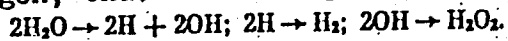
TOPIC TAGS: oxygen labeled hydrogen peroxide, hydrogen peroxide synthesis, heavy oxygen water, glow discharge, heavy oxygen water vapor, labeled peroxide synthesis parameter, oxygen isotope, deuterium labeled oxygen peroxide, oxygen isotope content

ABSTRACT: The equipment for this efficient laboratory synthesis is figured. The discharge tube was fed with a 1150-1800 volt, 0.1-0.5 amp. current. The oxygen-labeled water vapor was fed at the rate of 0.03-1.84 mol/hour, the vapor pressure was 0.43-0.53 mm Hg. The dissociated water vapor was removed from the discharge area, cooled, etc. and the yield determined by titration. This was a function of the parameter $U_p \cdot v$, where U is the discharge force (kva), v the rate

Card 1/3

ACCESSION NR: AP4039620

of adding the water vapor and p the pressure of the vapor entering the discharge tube. The isotope content of oxygen in the starter water and the peroxide was determined by mass spectrometry. Both the water remaining in the vaporizer and that formed upon decomposition of the synthesized H_2O^{18} were found to differ little from the starter water. The gases collected during the process were found to consist of hydrogen, thus confirming the reaction



The authors also synthesized D_2O^{18} by subjecting a mixture of D_2O and H_2O^{18} to the discharge. The so obtained peroxide contained 26% active oxygen, somewhat enriched from the starter material. The advantages of this method are a high degree of purity of the peroxide; the entire heavy oxygen contained in the initial water passes into the peroxide; the latter is somewhat enriched in O^{18} ; solutions of the oxygen labeled peroxide ranging from 1-50% may be obtained, depending upon the energy supply for the discharge and the rate of supply of the water vapor. Yields for 5-7% solutions were 1 g/hour on a 100% H_2O^{18} basis. Using the same equipment, the peroxide may be concentrated to 90% weight. Orig. art. has: 2 figures and 1 table.

Card 2/3

ACCESSION NR. AP4039620

ASSOCIATION: Akademiya nauk SSSR (Academy of Sciences, SSSR); Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova (Institute of General and Inorganic Chemistry).

SUBMITTED: 30May83

ENCL: 00

SUB CODE: IC

NO REF SOV: 008

OTHER: 001

3/3

Card

VOL'NOV, Il'ya Ivanovich; MIKHEYEVA, V.I., prof., otv. red.;
DRAGUNOV, E.S., red.

[Peroxides, superoxides and ozonides of alkali and alkaline
earth metals] Perekisi, nadperekisi i ozonidy shcheloch-
nykh i shchelochnozemel'nykh metallov. Moskva, Nauka, 1964.
120 p. (MIRA 17:11)

L 45716-66 EWT(m)/EWP(j)/EWP(t)/ETI IJP(c) JD/VW/JG/RO/JK/RM
ACC NR: AP6025400 SOURCE CODE: UR/0062/66/000/007/1267/1269

AUTHOR: Vol'nov, I. I.; Tokareva, S. A.; Klimanov, V. I.; Pilipenko, G. P. 4/4/ B

ORG: Institute of General and Inorganic Chemistry im. N. S. Kurnakov, Academy of Sciences, SSR (Institut obshchey i neorganicheskoy khimii Akademii nauk SSSR)

TITLE: Synthesis of ²⁷potassium ozonide via ²⁷potassium superoxide suspended in Freon-12

SOURCE: AN SSSR. Izv. Ser khim, no. 7, 1966, 1267-1269

TOPIC TAGS: ozonide, superoxide, potassium compound

ABSTRACT: The reaction of KO_2 with ozone was carried out in Freon-12, a liquid inert toward ozone. Potassium superoxide had the following composition: KO_2 , 90.22%; K_2O_2 , 3.85%; KOH, 2.75%; K_2CO_3 , 1.85%; H_2O , 1.33% (by difference). Its particle size was 0.05 mm or less. The ozone content of the ozone-oxygen mixture was 9 wt. %. The step of extraction with liquid ammonia was omitted. Analysis of the ozonized product gave KO_3 , 77.2; KO_2 , 6.4; KOH, 10.6; K_2CO_3 , 5.6 wt. %. The increase in the amount of KOH and K_2CO_3 impurities in the end product as compared to their content in the original potassium superoxide is due to the reaction of KO_3 with atmospheric moisture and CO_2 during the withdrawal of the samples for analysis, despite all the precautions taken. Orig. art. has: 1 figure and 2 tables.

SUB CODE: 07/ SUBM DATE: 18Dec65/ ORIG REF: 003/ OTH REF: 003

Card 1/1 ULR

UDC: 542.91+542.943.5+621.384.5+546.32

L 47554-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG/RO

ACC NR: AP6032907

SOURCE CODE: UR/0062/66/000/009/1665/1665

AUTHOR: Vol'nov, I. I.; Dobrolyubova, M. S.; Tsentsiper, A. B. 27
B

ORG: Institute of General and Inorganic Chemistry im. N. S. Kurnakova, Academy of Sciences SSSR (Institut obshchey i neorganicheskoy khimii Akademii nauk SSSR)

TITLE: Synthesis of rubidium ozonide from rubidium superoxide

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 9, 1966, 1665

TOPIC TAGS: inorganic synthesis, rubidium ozonide, rubidium superoxide, rubidium compound

ABSTRACT: Rubidium ozonide containing 96.6% RbO_3 and 3.4% Rb_2O was obtained by using for the first time a new reaction which was earlier successfully applied for the preparation of high-purity C_2O_3 [I. I. Vol'nov and V. V. Matveyev. Izv. AN SSSR. Ser. Khim., 1963, 1136]. The reaction between rubidium superoxide RbO_2 and ozonized oxygen was carried out at 0°C in a fluidized bed. Rubidium ozonide was extracted by liquid ammonia. The RbO_2 starting material was prepared by Matveyev by spraying Rb metal in oxygen and argon in a special apparatus which was previously described. The purest rubidium ozonide which was obtained by an older method from rubidium hydroxide contained only 66.6% RbO_3 . [JK]

SUB CODE: 07/ SUBM DATE: 19Feb66/ ORIG REF: 004/ ATD PRESS: 5094

Card 1/1

UDC: 542.91+542.943.5+546.35

ACC NR: AP7000813

SOURCE CODE: UR/0062/66/000/011/2032/2033

AUTHOR: Vol'nov, I. I.; Shatunina, A. N.

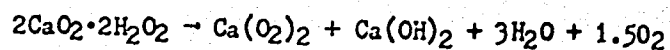
ORG: Institute of General and Inorganic Chemistry im. N. S. Kurnakov, Academy of Sciences, SSSR (Institut obshchey i neorganicheskoy khimii Akademii nauk SSSR)

TITLE: New data on the formation of $\text{Ca}(\text{O}_2)_2$ via $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 11, 1966, 2032-2033

TOPIC TAGS: calcium compound, superoxide

ABSTRACT: The reaction



was carried out at reduced pressures, a constant temperature of 40 °C, a constant time of 60 min, and with a distribution of $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$ of 1 g over 100 cm² of surface. It was found that the maximum content of $\text{Ca}(\text{O}_2)_2$ in the end product, equal to 55.4 wt. %, is reached at a pressure of 6×10^{-3} mm. The dependence of the $\text{Ca}(\text{O}_2)_2$ content on the surface over which 1 g of $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$ was spread at a residual pressure of 6×10^{-3} mm was determined. The value obtained, 55.4 wt. % $\text{Ca}(\text{O}_2)_2$ at 100 cm² of surface, is close to the limiting value, since according to the reaction given above, 1 mole of $\text{Ca}(\text{O}_2)_2$ and 1 mole of $\text{Ca}(\text{OH})_2$ are formed, which corresponds to 58.4 wt. %

Card 1/2

UDC: 661.842.24:542.91

ACC NR: AP7000813

Ca(O₂)₂. Orig. art. has: 2 figures and 1 formula.

SUB CODE: 07/ SUBM DATE: 09Apr66/ ORIG REF: 007/ OTH REF: 002

Card 2/2

ACC NR: AP7003305

SOURCE CODE: UR/0062/66/000/012/2235/2237

AUTHOR: Sokol, V. N.; Matveyev, V. V.; Vol'noy, I. I.

ORG: Institute of General and Inorganic Chemistry im. N. S. Kurnakov, Academy of Sciences, SSSR (Institut obshchey i neorganicheskoy khimii Akademii nauk SSSR)

TITLE: Determination of the density and refractive indices of cesium ozonide

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 12, 1966, 2235-2237

TOPIC TAGS: cesium compound, ozonide, refractive index

ABSTRACT: The refractive indices of cesium ozonide crystals were measured by an immersion method (described previously) in a stream of dry nitrogen at 0 to -10°C, using a goniometer in monochromatic light. The density was measured in the same temperature range by hydrostatic weighing. A special dosing apparatus was constructed for handling the microsamples of cesium ozonide, which is very sensitive to the action of moisture and carbon dioxide and is thermally unstable. Like sodium and potassium ozonides, cesium ozonide has the lowest density as compared to the peroxide and superoxide:

$$\text{Cs}_2\text{O}_2, \text{CsO}_2, \text{CsO}_3$$
$$d_4^{20} \quad 4.47 \quad 3.80 \quad 3.19$$

and has the highest density in the series of alkali metal ozonides:

Card 1/2

UDC: 531.75+535.32+546.214+546.36

ACC NR: AP7003305

	NaO ₂	KO ₂	CsO ₂
d_{20}^4	1,6	1,99	3,19

Orig. art. has: 1 figure.

SUB CODE: 07/ SUEM DATE: 25May66/ ORIG REF: 007

Card 2/2

ACC NR: AP7000012

SOURCE CODE: UR/0076/66/040/011/2907/2909

AUTHOR: Vol'nov, I. I.; Dzyatkevich, B. S.

ORG: Laboratory of Peroxy Compounds, Institute of General and Inorganic Chemistry
im. N. S. Kurnakov, Academy of Sciences, SSSR (Laboratoriya perekisnykh soedineniy,
Institut obshchey i neorganicheskoy khimii Akademii nauk SSSR)

TITLE: Hydrogen peroxide solutions and metallic gallium and indium

SOURCE: Zhurnal fizicheskoy khimii, v. 40, no. 11, 1966, 2907-2909

TOPIC TAGS: hydrogen peroxide, gallium indium

ABSTRACT: The influence of metallic gallium and indium on the decomposition of hydrogen peroxide solutions (33-96 mass %) was studied at 20°C at a constant ratio of the area of the metallic mirror of Ga or In (deposited on the inner surface of reactor vessels) to the volume of H₂O₂ solution. The decomposition rate was determined gasometrically and permanganatometrically, and found to be virtually the same on the indium mirror, gallium mirror, and glass No. 23. Ga₂O₃ (in various modifications) was formed on the gallium mirror. The decomposition of the 93.5% H₂O₂ solution on gallium is characterized by the presence of an induction period; the numerical value of the decomposition rate is 8×10^{-5} ml O₂/min, g, i. e., one order of magnitude less than the value for the 33.5% concentration, 7×10^{-4} ml O₂/min, g. The decomposition of the 95.8% H₂O₂ solution is also characterized by the presence of an induction

Card 1/2

UDC: 541.128

ACC NR: AP7000012

period, and the decomposition rate is equal to 3.5×10^{-5} ml O₂/min, g, which is one order of magnitude less than the value for the 33.8% solution, 2×10^{-4} ml O₂/min, g. Orig. art. has: 8 figures.

SUB CODE: 07/ SUEM DATE: 12Feb66/ ORIG REF: 001/ OTH REF: 001

Card 2/2

VOL'NOV, I.I.; TSENTSIPER, A.B.; CHAMCVA, V.N.; LATYSHEVA, Ye.I.; KUZNETSOVA,
Z.I.

Synthesis of oxygen-labeled hydrogen peroxide from dissociated heavy oxygen water in a glow discharge. Zhur. fiz. khim. 38 no.5;1182-1187 My '64. (MIRA 18:12)

1. Institut obshchey i neorganicheskoy khimii imeni Kurnakova AN SSSR. Submitted May 30, 1963.

L 52981-65 EWG(:)/EWT(m)/EPF(c)/EPR/EWP(t)/EWP(b) Pr-4/Ps-4 IJP(c) JD/JG

ACCESSION NR AM5011010

BOOK EXPLOITATION

29
B+1 S/

Vol'nov, Il'ya Ivanovich

27 Peroxides, superoxides, and ozonides of alkali and alkali earth metals (Perekisi, nadperekisi i ozonidy shchelochaykh i shchelochnozemel'nykh metallov), Moscow, Izd-vo "Nauka", 1964, 120 p. illus., biblio. (At head of title: Akademiya nauk SSSR. Institut obshchey i neorganicheskoy khimii Im. N. S. Kurnakova). Errata printed on inside of back cover. 1,300 copies printed.

TOPIC TAGS: alkali metal, alkaline earth metal, peroxide, superoxide, ozonide

TABLE OF CONTENTS(abridged):

- Foreword -- 3
- Introduction -- 6
- Ch. I. Classification and nomenclature of inorganic peroxide compounds -- 13
- Ch. II. Peroxides of metals of the first group of the periodic table -- 24
- Ch. III. Peroxides of elements of the second group of the periodic table -- 52
- Ch. IV. Superoxides of alkali and alkali earth metals -- 80
- Ch. V. Ozonides of alkali metals -- 108
- Conclusion -- 122

Card 1/2

L 52981-65

ACCESSION NR AM5011010

SUBMITTED: 03Sep64

SUB CODE: IC

NR REF SOV: 187

OTHER: 455

LL
Card 2/2

L 43204-65 EFF (c)/EPR/ENG(j)/ENT(m)/EMP(b)/EMP(t) Pr-l/Ps-l/Peb DIAAP/IJP(c)
 JD

ACCESSION NR: AP5006695

S/0076/65/039/002/0452/0453

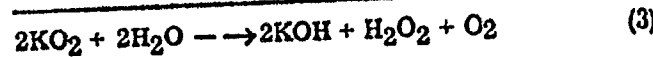
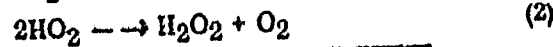
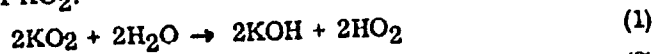
AUTHOR: Vol'nov, I. I.; Chamova, V. N.; Latysheva, Ye. I.

TITLE: Induced exchange of oxygen between KO sub 2 and water containing oxygen-18

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 2, 1965, 452-453

TOPIC TAGS: heavy oxygen, hydrogen peroxide, potassium hydroxide, molecular oxygen, potassium superoxide, superoxide radical, oxygen exchange

ABSTRACT: While conducting the hydrolysis of KO_2 in H_2O^{18} with 1.76 at. % O^{18} , it was discovered that the KOH produced contained less O^{18} (1.37 at. %) than the initial water. To explain this fact, the authors investigated the mechanism of the intermediate reactions in the hydrolysis of KO_2 :



Card

1/2

L 43204-65

ACCESSION NR: AP5006695

They suggested that the heavy oxygen was distributed between the KOH, H₂O₂ and O₂. This was confirmed by direct measurement of the isotope composition of both the molecular oxygen and the H₂O₂ produced in the 2nd reaction. The resulting isotope balance indicated that there is a very slow exchange, in alkaline medium, between the oxygen of the water and the active oxygen of the superoxide radical. Orig. art. has: 1 table and 3 formulas.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova, Akademiya nauk SSSR (Institute of General and Inorganic Chemistry, Academy of Sciences, SSSR)

SUBMITTED: 30Jun64

ENCL: 00

SUB CODE: IC

NO REF SOV: 003

OTHER: 005

Card

2/2

DOBRYNINA, Tat'yana Aleksandrovna; VOL'NOV, I.I., kand. khim.
nauk, otv.red.; DRAGUNOV, E.S., red.

[Lithium peroxide] Perekis' litia. Moskva, Izd-vo "Nauka,"
1964. 49 p. (MIRA 17:7)

BR

ACCESSION NR: AT4028327

S/0000/63/000/000/0005/0010

AUTHOR: Vol'nov, I. I.

TITLE: On the state and prospects of research in the field of the chemistry of inorganic peroxide compounds

SOURCE: Soveshchaniye po khimii perekisnykh soyedineniy. Second, Moscow, 1961. Khimiya perekisnykh soyedineniy (chemistry of peroxide compounds); Doklady* sqveshchaniya. Moscow, Izd-vo AN SSSR, 1963, 5-10

TOPIC TAGS: peroxide compound, superoxide, ozonide, inorganic compounds, peroxide groups

ABSTRACT: The author traces the history of peroxide compounds from the beginning of the 19th Century and Humboldt's discovery of barium peroxide to the present day, including the development and changes in peroxide concepts. In post-war years, considerable successes in science and application have been attained in the Soviet Union. The works of I. A. Kazarnovskiy is mentioned in a synthesis and the study of properties and reaction capability of sodium superoxide and a new class of peroxide compounds, inorganic ozonides, along with the research by A. I. Brodskiy who first used the heavy isotope of oxygen for explaining the formation mechanism and decay

Card 1/2

ACCESSION NR: AT4028327

of peroxide compounds. Also mentioned are M. I. Gurevich who systematically investigated the nature of uranium peroxide compounds; N. I. Kobozev who investigated the synthesis of hydrogen peroxide in an electrodischarge; G. A. Bogdanov who investigated the mechanism of catalytic dissociation of hydrogen peroxide; and S. Z. Makarov who systematically investigated the interaction of hydrogen peroxide with the hydrates of oxides and salts enabling the development of rational methods for synthesizing a number of peroxide compounds. Work in the United States, England and West Germany is also mentioned. The Coordinating Committee for Scientific Research Work by the Counsel of Ministers of the Soviet Union and the Presidium of the Soviet Academy of Sciences have defined a most important mission for modern science and technology and decided to set up scientific counsels which will coordinate this program and evaluate the obtained results.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N.S. Kurnakova AN SSSR
(Institute of General and Inorganic Chemistry AN SSSR)

SUBMITTED: 13Dec63

DATE ACQ: 06Apr64

ENCL: 00

SUB CODE: CH

NO REF SOV: 000

OTHER: 001

Card 2/2

VOLINOV, I.N., KOSOLAPOV, I.I., PERKIN, S.G.

Steam Pipes

Self-sealing plug for hydraulic testing of high-pressure pipes. Rab. energ. 2 no. 4,
1952

9. Monthly List of Russian Accessions, Library of Congress, July 1952 ~~1953~~, Uncl.

VOLINOV, I.M., KOSLATOV, I.I., PERKIN, S.G.

Steam Pipes

Self-sealing plug for hydraulic testing of high-pressure pipes. *Rub. energ.*
2 no. 4, 1952

9. Monthly List of Russian Accessions, Library of Congress, July ¹⁹⁵²~~1953~~, Uncl.

KUZ'MINA, Ye.G.; VOL'NOV, G.N.

Electrolysis of solutions of stannic chloride in certain organic
solvents. Zhur.fiz.khim. 28 no.2:282-286 F '54. (MLRA 7:5)
(Electrolysis) (Stannic chloride)

YAKOVLEV, N.N.; VOL'NOV, N.I.; LESHKEVICH, L.G.

Effect of pangamic acid, methionine, and a mixture of gluconate and glycin on the metabolism in a heart muscle and the electrocardiography of muscular activity. Ukr.biokhim.zhur. 37 no.5:818-835 '65.

(MIRA 18:10)

1. Nauchno-issledovatel'skiy institut fizicheskoy kul'tury, Leningrad.

USSR/Human and Animal Physiology - (Normal and Pathological). T
Blood Circulation. General Problems.

Abs Jour : Ref Zhur Biol., No 4, 1959, 17413

Author : Vol'nov, N.I.

Inst : -

Title : On the Level of Arterial Pressure in Athleter

Orig Pub : Terapevt. arkhiv, 1958, 30, No 6, 65-71

Abstract : No abstract.

Card 1/1

- 37 -

EXCEPTEA MEDICA Sec. 6 Vol 13/12 Internal med. Dec 59

7098. ARTERIAL PRESSURE LEVEL IN SPORTSMEN (Russian text) - Volnov
N. I. - TERAP. ARKH. 1958, 30/6 (65-71) Graphs 1 Tables 6

The blood pressure was studied in 5,975 athletes (4,107 men and 1,868 women). As a normal value for blood pressure 100-129/60-89 mm. Hg was taken. The diastolic pressure was on the lower limit of normal in 50% of athletes in the age group up to 20 yr. The percentage of athletes with a low blood pressure is equal to that of the rest of the population. Higher blood pressure is more often observed in athletes (12.3%) than in other persons. The majority of athletes have a low blood pressure, on the lower limit of normal. The lowering of the blood pressure after training in the majority of cases does not exceed the lower limit of normal and so the term hypotonia cannot be used. The term athletes' hypotonia does not characterize this sort of lowering of blood pressure. The fact that there are among athletes persons with a blood pressure under the lower limit of normal has to be explained. The higher blood pressure found among athletes can be explained by overstraining, which can in this manner reveal persons with higher reactivity of blood pressure-regulating centres. There is no homogeneity in the group of athletes with a higher blood pressure. This group includes hyper-reactive subjects, potential hypertonics and even patients in the neurogenic stage of hypertension. For these reasons every subject with higher blood pressure needs an individual clinical examination. The problem of allowing persons to practise sports and of deciding the kind of training can be solved only on this basis. Hence it is clear that the differential diagnosis of higher blood pressure has great importance in sports medicine, in prophylaxis as well as in revealing the neurogenic stage of hypertensive disease in its early stages.

Mestan - Prague(XVIII, 6)

BUTCHENKO, L.A.; VOL'NOV, N.I.

Statistical methods used in working out norms for the
evaluation of the electric heart systole. Prim. mat. metod.
v biol. no.2:196-201 '63. (MIRA 16:11)

*

VOL'NOV, N. I.: Master Med Sci (diss) -- "Arterial pressure among sportsmen".
Leningrad, 1959. 18 pp (Min Health RSFSR, Leningrad Sanitary-Hygiene Med Inst),
200 copies (IL, No 18, 1959, 128)

VOL'NOV, N. I.

Blood pressure level in athletes. *Terap. nrkh.* 30 no.6:65-71 *Ja* '58
(MIRA 11:7)

1. In sektora sportivnoy meditsiny (zav. - prof. A.G. Dembo)
Leningradskogo nauchno-issledovatel'skogo instituta fizicheskoy
kul'tury.

(ATHLETICS,
blood pressure in athletes (Rus))
(BLOOD PRESSURE,
in athletes (Rus))

ACCESSION NR: AT4001248

8/2776/63/000/032/0164/0174

AUTHORS: Ovhyannikov, B. M.; Melekhin, A. K.; Lebedev, D. V.;
Vol'nov, N. H.

TITLE: Stress rupture testing of refractory metals and alloys at
temperatures up to 1800°C

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy institut
chernoy metallurgii. Sbornik trudov, no. 32, 1963, 164-174

TOPIC TAGS: refractory metal, refractory alloy, ultrahigh tempera-
ture stress rupture test, refractory material stress rupture test

ABSTRACT: In view of the shortage of suitable equipment for me-
chanical tests of high-melting-point metals and alloys at tempera-
tures above 1200°C, the authors describe some of the main equipment
which they constructed for long-run tests in air (up to 1500--1600°C)
and in vacuum. The system constitutes two types of small vacuum

Card 1/42

ACCESSION NR: AT4001248

furnaces with seals to ensure hermeticity of the system at relatively large displacements of the clamps of the testing machine, heating elements for the furnace, and control circuitry. Some operating features of the furnaces are discussed. Orig. art. has: 15 figures.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metalurgii (Central Scientific Research Institute of Ferrous Metallurgy)

SUBMITTED: 00 /

DATE ACQ: 10Dec63

ENCL: 02

SUB CODE: AP, MA

NO REF SOV: 006

OTHER: 000

Card 2/4

OVSYANNIKOV, B.M.; MELEKHIN, A.K.; LEBEDEV, D.V.; VOL'NOV, N.N.

Testing of high-melting metals and alloys for stress-rupture strength
at temperatures up to 1800 C. Sbor. trud. TSHIICHM no.32:164-174
'63. (MIRA 16:12)

ACCESSION NR: AP/013314

S/0032/64/030/002/0228/0229

AUTHOR: Ovsyannikov, B. N.; Lebedev, D. V.; Melekhin, A. K.; Vol'nov, N. N.

TITLE: An installation for testing long range durability under vacuum at temperatures up to 1800C

SOURCE: Zavodskaya laboratoriya, v. 30, no. 2, 1964, 228-229

TOPIC TAGS: durability, durability test, long range durability, vacuum effect, temperature effect, vacuum oven, heated vacuum oven

ABSTRACT: The installation consisted of a two-section steel vacuum oven of cylindrical shape, 29 cm in diameter and 30 cm long, provided with a water jacket and two centrally located radiation heaters. By these means it was possible to bring the temperature up to 1300C within 20 minutes and to 1800C within 65 minutes. However, it was found that a too rapid rise of temperature caused an accelerated evolution of gases from the test samples placed in the oven, which affected the vacuum. A gradual step-by-step rise in temperature was found to be the proper procedure. An additional source of error in a vacuum of fluctuating magnitude was due to the presence of equalization loads of the leverage system of the testing machine. Figure 1 on the Enclosures gives the structural details of the vacuum oven, ~~which~~.

Card

Cent Sci Res Inst. of Iron Metallurgy