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C 17 7

Bromatometric and acidimetric determination of allyl alcohol and the mechanism for the reactions initiated by bromination. E. Schulek and I. Bayer (Univ. Budapest) *Acta Pharm. Intern.* 1, 177-85(1950)(in German).—Allyl alc. (I) can be detd. (a) by direct titration with bromate in the presence of acid and an alkali bromide by using a suitable indicator (*p*-ethoxychrysoidine), (b) by adding an excess of bromate with subsequent iodimetric back titration, or (c) by titrating the acid produced on reaction with Br water; one equiv. of acid is produced per mole of I. From this it is concluded that the Br addn. product hydrolyzes rapidly to give 1-bromopropanediol. The second Br atom can be removed by boiling with an excess of alkali.

Dexter French

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Magyar Kemiai Folyoirat
Hunga ria n Journal of Chemistry
vol. 46 1950
n . 11 november

I. Schulek
and E. Pungor

Titrimetric methods of gas analysis II
Determination of nitrogen monoxide . . . 396 397

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

Magyar Kemiai Folyoirat
Hun arian Journal of Chemistry
vol. 46 1950
no. 11 november

E. Schulek
and E. Pungor
Titrimetric methods of gas analysis. III
Idiometric measurement of nitrous anhydride (N_2O_3) respectively of nitrogen oxide, (NO) and of nitrogen dioxide (NO_2) ... 497-509

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

PROCESSES AND PROPERTIES INDEX

26

Magyar Kemiai Folyoirat
Hungarian Journal of Chemistry
vol. 46 1950
no. 11 november

E. Schulek
and E. Pungor:
Tray and scoop for mercury 400

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

26

Magyar Kemiai Folyoirat
Hungarian Journal of Chemistry
vol. 46 1950
no. 12 december

E. Schulek
and E. Kováts:
Determination of sulphide-sulphur in inorganic compounds containing sulphur in various bonds ..... 121 - 126

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

36

Magyar Kemiai Folyoirat
Hungarian Journa l of Chemistry
voll 46 1950
no.12 december

F. Schulek
and E. Körös
Study on the formation and decomposition mechanism of sulphides, polysulphides, sulphites and thiosulphates 426–431

COMMON ELEMENTS

COMMON VARIABLES INDEX

MATERIALS INDEX

OPEN

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

MATERIALS INDEX

AUTHOR INDEX

3RD AND 4TH ORDERS

1ST AND 2ND LETTER

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1ST AND 2ND ORDERS | 3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

H

25

18. Data on the theory of adsorption indicators, dyes absorbed by ions serving as indicators for acidimetry and alkalimetry, by F. Schulek and E. Pungor. („Magyar Kemiai Folyoirat" — Hungarian Journal of Chemistry — Vol. 56, No. 1, pp. 11-16, Jan., 1950).

Paraethoxychrysoidine was applied as an indicator in the titration of silver nitrate solutions with haloid salt solutions. In examining this titration it was established that the colour produced by the process, during which the dyes were absorbed by the ions, depends on the nature of the surface, on the presence of its ions and on their concentration. This phenomenon is most conspicuous in the case of AgI. Experiments were also made with eosin and flourescein according to which the adsorption of the indicator begins with the appearance of colloidal silver haloid. The explanation of the phenomenon based on Fajan's theory is more exact by emphasizing the change of measurable constants (dissociation constants, solubility products, etc.) instead of speaking of any "deformation" of dyestuff ions. Detailed information is given for the practical preparation and the use of adsorbed dyes appropriate for acidimetry and alkalimetry.

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CH

1

Manganese(II) carbonate and its properties of value in gas analysis. Elemér Schulek and Erno Pungor (Univ. Budapest). *Magyar Kémi. Folyóirat* 56, 213-14(1950).—MnO and $MnCO_3$ were examd. as O absorbents for gas analysis. $MnCl_2.4H_2O$ (25 g.) was dissolved in 50 ml. water and filtered and 20 g. $NaHCO_3$ in 200 ml. water was added. When the gas development ceased, the ppt. was filtered with suction, washed with water and 98% EtOH, dried, and the last traces of water and EtOH were removed by washing with pentane. The $MnCO_3$ contains water of crystn. but no water resulting from hygroscopicity. Hygroscopic $MnCO_3$ is very unstable in air. The proper formula is $MnCO_3.2H_2O$. Its water of crystn. disappears between 70 and 100°, CO_2 evolution begins at 250°, and above 300° $MnCO_3$ is quickly transformed to bright-green MnO. MnO absorbs O even at room temp., and O absorption is vigorous at 200°. MnO, besides binding free O, at 200° decomps. NO and NO_2, and at 450-500° N_2O. The higher oxides of Mn can be reduced by H at 350° to green MnO. This reaction is considerably more rapid at 400° and is thus suitable for recovery of the spent MnO. These properties indicate that $MnCO_3.2H_2O$ is an excellent substance for gas analysis, e.g., for removing traces of O from N or H. For such purposes the $MnCO_3$ must be sprayed on a carrier, such as powd. glass. Pumice was unsuitable because of O adsorption. István Finály

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CA

Titrimetric gas analysis. I. Determination of oxygen. Elemér Schulek and Erno Pungor (Univ. Budapest). *Magyar Kém. Folyóirat* 56, 250-5(1950).—Instead of analyzing the whole gas sample, a small part is tested by means of a special gas measuring and analyzing app. Two methods have been worked out, one serves for detg. O_2 content in gas samples contg. O_2 above 0.1 vol. %. This method is based on the absorption of O_2 by MnO at 300-50°. This reagent is produced by heating $MnCO_3.2H_2O$ in a N current to 300°. The temp. is decreased to 250-50°, the gas sample is passed through the app., the granulated glass (contg. Mn oxide) is washed with HCl contg. KI and starch, and then titrated with 0.1 N $Na_2S_2O_3$. When analyzing gas samples with O_2 below 0.1 vol. %, a 5% soln. of $MnCl_2.4H_2O$ is treated with 1.0 N NaOH contg. 5% KI and 4-5 drops 1% starch. The freshly pptd. $Mn(OH)_2$ is suitable for absorbing traces of O_2 in the gas sample. I. F.

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C.A.

Titrimetric methods of gas analysis. II. Determination of nitrous oxide.—Kálmán Schulek and Ernő Pungor (Eötvös Univ., Budapest). *Magyar Kém. Folyóirat* 56, 306-7(1950); cf. *C.A.* 46, 378g.—The principle of the new method is to decomp. N_2O by heating at 700 to 800°, leading the gas through glass particles mixed with MnO, and measuring the resulting higher Mn oxides by iodometry. The app. described in a previous paper (*loc. cit.*; *C.A.* 45, 5570a) is suitable. Further expts. proved that MnO can reduce N_2O at higher temps. (about 400°) without any previous heat-treatment. Under favorable conditions the reduction effected by MnO may yield N. When com. N_2O gas was purified by freezing, the new titrimetric method gave a N_2O content varying from 83.14 to 89.83 vol. %. The difference is not due to a failure of the new method, but is probably caused by the presence of triatomic N having phys. properties very similar to those of N_2O. **III. Iodometric measurement of nitrogen trioxide, nitrogen dioxide, and nitric oxide.** *Ibid.* 307-9.—First, pure N gas is led through the app. to remove O. N was purified by passing through a wash-bottle contg. $Na_2S_2O_4$. For the actual binding of NO and NO_2, a quartz reaction tube contg. glass particles mixed with $MnCO_3$ is used. $MnCO_3$ is converted to MnO by elec. heating to 200° when O traces are to be eliminated and to 300° when N oxides are to be bound. It is essential that the amt. of gas sample used should not exceed 0.2-1.0 ml., that the MnO should not have a temp. below 300°, and that the velocity of gas rate should not exceed one bubble per sec. After absorption of the gases, an aq. KI soln. contg. 10% HCl is used to dissolve Mn oxides, and the soln. is titrated with a 0.01 *N* $Na_2S_2O_3$ soln., each ml. of which represents 0.1500 mg. NO, or 0.1150 mg. NO_2. The accuracy was proven by tests with known amts. of N oxides.

István Finály

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CA

Tray and scoop for mercury. Elemér Schulek and Erno Pungor (Eötvös Univ., Budapest). *Magyar Kém. Folyóirat* 56, 400(1950).—The use of a tray with a 5-6 cm. high side wall and a scoop with a deepening where Hg is accumulated makes manipulation of Hg in gas analysis much easier. The tray and scoop are described in detail. István Finály

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

C.A.

Determination of sulfidic sulfur in inorganic compounds. Elemér Schulek and Endre Kovács (Eötvös Univ., Budapest). *Magyar Kém. Folyóirat* 56, 421-8(1950).—Schulek's procedure (*C.A.* 19, 1829) is modified: To 70 ml. of water in a 100-ml. flask, add 1 g. H_3BO_3 + some coarsely powd. pumice. Boil 2-3 min., remove the flame, and add the sample, boil 10 min. more, cool, and titrate with 0.1 *N* HCl in the presence of *p*-ethoxychrysoidine which gives a better end point than does methyl red. One ml. of 0.1 *N* HCl = 1.603 mg. of sulfidic S. Now add an excess of standard KI_3 soln. and after 10 min. titrate the excess I with 0.1 *N* $Na_2S_2O_3$. One ml. of 0.1 *N* I soln. = 1.603 mg. sulfidic S and 6.412 mg. thiosulfate S. In the presence of sulfite, thiosulfate, hydroxyl, or carbonate, it is best to det. sulfidic S by boiling the sample with H_3PO_4, and distg. off the H_2S into Br water which oxidizes it to H_2SO_4. Boil off the Br excess and titrate with standard NaOH soln. If polysulfides and thiosulfates are present, the method should be modified by adding 0.5-1.5 ml. of 10% KCN to the distg. flask before distg. In this case, evap. the contents of the receiver to a very small vol., wash into a small beaker, and evap. again before titrating. Modifications are also described for detg. polysulfide S and thiosulfate S. István Finály

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

Existence and theory of the electromeric form of cyanogen chloride. Theory of the iodometric bromide determination by means of cyanogen bromide. E. Schulek and E. Pungor (Univ. Budapest). *Anal. Chim. Acta* 5, 137-51 (1951) (in German); cf. *C.A.* 43, 65*e*.—CNCl is formed in Schulek's detn. of Br^- by BrCN, dependent on the temp. and the pH. The yellow color of the latter, and its ability to oxidize I^-, disappear after a short while. Reaction-kinetic expts. show that the formation of yellow CNCl, and its reaction with I^-, is a monomol. collision reaction. Yellow CNCl represents the electromeric form in which the Cl has a pos. charge. Calcns. show that the reaction const. diminishes with increase of temp. and pH. **Use of cyanogen halides in quantitative analysis. III. Iodometric determination of hypobromite by hypochlorite.** E. Schulek and P. Endrõi. *Ibid.* 245-51.—The proposed method is based on the fact that when BrO^- and ClO^- are poured into a buffer soln. contg. CN^-, cyanogen halides are formed in which the Br has a pos. character and the Cl a neg. character. CNBr can thus be detd. iodometrically in the presence of CNCl. The formation and hydrolysis of the cyanogen halides are discussed critically. **IV. Reaction mechanism of the oxidation of iodine by means of the hypohalogenites. Iodometric iodine determination.** *Ibid.* 252-9.—Iodides can be oxidized to iodates by hypobromite or hypochlorite. KCN in excess removes the excess of oxidizing agents. The cyanogen halides thus formed disappear by hydrolysis in strong alk. soln. The mechanism of hypobromite formation as the basis for a method for the detn. of Br^- is critically discussed. **V. Iodometric method for the determination of chlorite in the presence of hypochlorites and chlorates.** *Ibid.* 368-74.—The method is based on the fact that in alk. soln. hypochlorites react with cyanide with the formation of a CNCl in which the Cl possesses a certain neg. character. The sample contg. 0.5-5.0 mg. of chlorite ion along with some ClO_3^- and ClO^- is dild. to about 100 ml. in a glass-stoppered Erlenmeyer flask, and shaken with 2-5 ml. of 5% KCN soln. After addn. of KI and acidification with enough H_3PO_4 to make the concn. of the latter about 1.5%, the liberated I is titrated with $Na_2S_2O_3$ soln., and starch as the indicator. Methods for the generation of Cl and ClO_2 from ClO_2^- are discussed critically.

Landon A. Sarver

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C. A.

Potentiometric determination of iodide ions with silver nitrate solution and vice versa with the aid of the hydrogen electrode E. Schulek and E. Pungor (Univ. Budapest). *Anal. Chim. Acta* 5, 422-5(1951); cf. *C.A.* 44, 10575h(in German).—Iodides can be titrated potentiometrically with $AgNO_3$ soln., or Ag^+ with KI, with a H indicator electrode, if *p*-ethoxychrysoidine is added. Landon A. Sarver

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Potentiometric measurement of iodide ion with silver nitrate solution and the potentiometric measurement of silver ion with a potassium iodide solution with a hydrogen electrode. Elemér Schulek and Ernö Pungor (Eötvös Univ., Budapest, Hung.). *Magyar Kém. Folyóirat* 57, 11-13(1951).—When 0.001 *M* KI or $AgNO_3$ solns. are titrated with 0.01 *M* $AgNO_3$ or KI solns., the potentiometric method with the H electrode gave satisfactory results, if 12 drops of a 0.2% EtOH soln. of *p*-ethoxychrysoidine was added per 100 ml. liquid. István Finaly

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SCHULEK, E.

Hungarian Technical Abst.,
Vol. 5 No. 4 1953

9. The analysis of ammonium polysulphide solutions and the examination of some of their properties — *Az ammóniumpoliszulfid-oldat analízise és néhány sajátságának vizsgálata* — E. Schulek and E. Körös. (Hungarian Journal of Chemistry — *Magyar Kémiai Folyóirat* — Vol. 58, 1952, No. 12, pp. 367—369, 2 tabs.)

The article deals with the gravimetric determination of the sulphide sulphur content of ammonium polysulphide solutions. The hydrogen sulphide distilled over from the solution to be analyzed while boiling with boric acid can be absorbed in a 2 to 1 mixture by volume of 10% sodium hydroxyde and 30% hydrogen peroxide and be weighed as barium sulphate. — The reaction of ammonium hydroxyde with sulphur was examined under various test conditions. It could be established that, in a closed system and in the absence of oxygen, the reaction always leads to the formation of ammonium pentasulphide and ammonium thiosulphate independently of the ratio of the components, the temperature and the pressure. The reaction occurs according to the following formula:

$$6\,NH_4OH + 12\,S = 2\,(NH_4)_2S_5 + (NH_4)_2S_2O_3 + 3\,H_2O.$$

The same course of reaction can be observed in case of alkali hydroxides reacting with sulphur in an oxygen-free atmosphere. Experiments have proven that ammonium hydroxide and ammonium polysulphide do not react in aqueous solutions at given test temperatures and pressures.

D. Varsányi

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Analytical Chemistry - 1

Titrimetric determination of boric acid F. Schulek and O. Szakács (L. Eötvös-Univ., Budapest). ~~Z. anal. Chem.~~ 137, 5-7(1952).—It has been customary to fuse insol. samples contg. B with alkali carbonate and after treating the cooled melt with H_2SO_4 and MeOH, distil off the H_3BO_3 ester, treat the distillate with aq. KOH, and evap. off the MeOH. The residue is dissolved in a little water, neutralized to methyl red, and then the H_3BO_3 titrated to phenolphthalein with NaOH after the addn. of mannitol. It is now found that the procedure succeeds best when, for 1.60 mg. H_3BO_3, there is used 100 ml. MeOH, 5-10 ml. of N KOH, and 80-100 ml. of water. Moreover, for the final titration after the addn. of mannitol, α-naphthol-phthalein is a preferable indicator. W. T. Hall

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

Schulek, E.

Determination of sulfidic sulfur in inorganic compounds containing sulfur in various forms of bond [illegible] Schulek [illegible] Acta Chimica [illegible] 1951 [illegible]

On the basis of [illegible] methods for the determination of sulfidic sulfur in water soluble sulfides the process proposed earlier by Schulek consisting in carrying out the examinations in a solution free of oxygen was further developed. Hydrogen sulfide is removed from the solution of sulfide by boiling with boric acid in a suitable distilling apparatus and collected in bromine water where it is oxidized into sulfuric acid under the formation of hydrobromic acid. The amount of acid is measured after removing excess bromine. In the presence of polysulfides the precipitated sulfur can be eliminated in the form of potassium thiocyanate by the addition of potassium cyanide. The process can be carried out in the presence of polysulfides as well provided that an accurately known excess of potassium cyanide is applied and also the content of sulfide can be computed when the amount of polysulfides is known. It is practical to determine the content of sulfidic sulfur in solutions of ammonium polysulfide by gravimetry in the form of barium sulfate.

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Schulek, E.

16. Studies on the mechanism of the formation and decomposition of sulfides, polysulfides, sulfites and thiosulfates (In German) — E. Schulek and E. Körös. (Acta Chimica Academiae Scientiarum Hungaricae o- Vol. 3, 1953, No 1, pp. 125–138)

With the aid of methods described at an earlier date, the following problems have been succesfully cleared up. (1) On dissolving sulfur in sodium hydroxide under heating the solution contains sulfide, polysulfide and thiosulfate. In this reaction mixture sulfite and sulfate were not detectable. (2) On dissolving sulfur in aqueous ammonia the solution contains sulfide, polysulfide and thiosulfate. (3) Solutions of sodium and potassium sulfide are quickly oxidized by atmospheric oxygen under the formation of sulfite and thiosulfate. (4) The earlier observation by Schulek, according to which thiosulfate solutions also contain tetrathionates due to the oxidizing effect of air, was corroborated by measurements of pH values. (5) Polysulfides are oxidized by atmospheric oxygen to thiosulfate. (6) Salt solutions with an alkaline reaction, if not too concentrated (as trisodium phosphate and borax), dissolve small amounts of sulfur.

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SCHULEK, E.

3

Alkalimetric determination of sodium and potassium in the presence of each other. E. Schulek and E. Koros (L. Eötvös Univ., Budapest). *Acta Chim. Acad. Sci. Hung.* 3, 281-7(1953)(in German); cf. *C.A.* 32, 5330[4].—After removal of SO_4^{--} and PO_4^{3-} by pptn. with Ba^{++} under appropriate conditions, the alkali compds. are converted first to nitrates by repeated treatment with HNO_3 and then to borates by appropriate treatment with H_3BO_3. An aq. soln. of the borates is titrated with $HClO_4$, the soln. evapd. to dryness, and the residue extd. with EtOH. The insol. $KClO_4$ is converted to borate and titrated, and the ($NaClO_4$ + H_3BO_3) recovered from the EtOH is also converted into borate and titrated. The method is suggested for the analysis of drinking waters, mineral waters, blood serum, etc. B. P. Block

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SCHULEK, E.

(3)

Reduction of alkali perchlorates and their conversion into borates. E. Schulek and E. Koros (L. Eötvös Univ., Budapest). *Acta Chim. Acad. Sci. Hung.* 3, 229-99(1953) (in German).—Aq. 3% ClO_4^- is not reduced by glucose and HNO_3, NH_2OH, or N_2H_4 and is reduced only in small part by HCl, HBr, or HI. In the solid phase, reduction occurs upon ignition of $MClO_4$ and glucose, $H_2C_2O_4$, Na_2CO_3, or NH_4I, but in no case is the ignition suitable for analytical work. The ignition of a 1:16 mixt. of $MClO_4$ and H_3BO_3 at 800° for 10 min. gives 100% conversion to borate if the mixing is adequate. Evapn. of a soln. of the two gives satisfactory mixing. At 400° a measurable amt. of ClO^- is formed. The path of the mechanism is proposed to be $MClO_4 + H_3BO_3 \rightarrow HClO_4$, $HClO_4 \rightarrow Cl_2$, and $Cl_2 \rightarrow ClO^-$. Any HCl formed reacts with more $HClO_4$ to yield Cl_2. ClO^- is also formed in the reaction between $KClO_3$ and H_3BO_3 at 200°.

B. P. Block

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SCHULEK, E.

Thermoreaction of alkali compounds and boric acid. E. Schulek and E. Koros (L. Eötvös Univ., Budapest). *Acta Chim. Acad. Sci. Hung.* 3, 301-3(1953)(in German). Complete conversion to borate was obtained on 10-min. ignition of a mixt. contg. 8 parts H_3BO_3 to 1 part salt as follows: KNO_3 500°, LiCl 300°, CsCl or RbCl 400°, NaCl or KCl 800-850°, K_2SO_4 1000°. The temps. required parallel the m.ps. for the halides. Investigation of the KCl-H_3BO_3 reaction by chem. analysis, x-ray analysis, and microscopic analysis confirmed that the transformation starts at 450° and is complete at 900°. At lower temps. the product consists of hexagonal crystals; a glass is formed at the higher temps.

B. P. Block

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

SCHULEK, E., KOROS, E.

"The Reduction of Alkali Perchlorates and Their Conversion into Borates." p. 289
(ACTA CHIMICA, Vol. 3, No. 3, 1953) Budapest, Hungary

SO: Monthly List of East European Accessions, Library of Congress, Vol. 3, No. 4, April 1954. Unclassified.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

SCHULEK, E.

Hungary CA: 47:12109

with E. PUNGOR and J. KETHELYI

L. Eotvos Univ., Budapest

"The Volhard halogen determination."

Anal. Chim. Acta 8, 229-34 (1953) (in German).

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

SCHULEK, E.

Hungary CA: 47:11957

with E. PUNGOR and F. CUBA

L. Eotvos Univ., Budapest

"Electron-microscope control of envelope thickness in adsorption phenomena."

Anal. Chim. Acta 8, 261-73 (1953) (in German).

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

SCHULEK, E.; KOROS, E.

Alkalimetric determination of sodium and potassium in the presence of each other. p. 104. (Magyar Kemiai Folyoirat, Budapest, Vol. 59, no. 4, Apr. 1953)

SO: Monthly list of East European Accessions (EEAL), LC Vol 4, No. 6, June 1955, Uncl

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14. Reduction of alkaline perchlorates and their transformation into borates. — *Az alkáliperklorátok redukciójáról és borátta alakításáról* — E. Schulek and E. Körös. (Hungarian Journal of Chemistry — *Magyar Kémiai Folyóirat* — Vol. 59, 1953, No. 4, pp. 107—111, 6 tabs.)

Experiments were carried out to reduce the alkaline perchlorates in an aqueous solution and in a solid state. The reduction of the alkaline perchlorates in an aqueous solution using glucose-nitric acid, hydroxylamine, hydrazine, ascorbic acid, concentrated hydrogen chloride, hydrogen bromide or hydrogen iodide as reducing agents was unsuccessful. In the solid state the reduction of the perchlorates fused with oxalic acid, sodium carbonate, ammonium iodide etc. was incomplete and glow losses occurred. Alkaline perchlorates heated with solid boric acid in an adequate quantity for 8 to 10 minutes were transformed quantitatively into the corresponding borates. Quantitative determination of the borates thus obtained can be realized by known methods.

D. P.

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12. **Investigations on the thermoreaction of alkaline compounds with boric acid** — *Az alkálivegyületek és bórsav termoreakciójának tanulmányozása* — E. Schulek and E. Kőrös. (Hungarian Journal of Chemistry — *Magyar Kémiai Folyóirat* — Vol. 59, 1953, No. 4, pp. 111—11, 1 tab.)

The temperatures for the conversion of alkaline compounds into the corresponding borates were determined. It was found that potassium nitrate was transformed into borate at 500° C, potassium chloride and potassium chlorate at 800° C and potassium sulfate at 1000° C. The temperatures of the complete transformations of the alkaline chlorides into the corresponding borates increase parallel with the melting points of the alkaline chlorides: lithium chloride (mp 614° C) is transformed at 300° C, caesium chloride (mp 642° C) and rubidium chloride (mp 717° C) at 400° C, potassium chloride (mp 770° C) and sodium chloride (mp 800° C) between 820—850° C only. By x-ray and microscopic investigations of the thermochemical reaction between potassium chloride and boric acid it was established that in the melt heated at 350° C optically negative, hexagonal crystals of potassium borate were formed.

D. V.

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SCHULEK, E.

Peroxy compounds. I. Iodometric determination of peroxydisulfuric acid in the presence of hydrogen peroxide [illegible] method). R. Schulek, E. Pungor, and L. Trompler [illegible] Hung.

mination of peroxymonosulfuric acid and hydrogen peroxide in the presence of each other (thiocyanate method). *Ibid.* 417-22.—By taking advantage of the great difference in rates of reaction between KCNS-H_2O_2 and KCNS-H_2SO_4, [illegible] can be detd. together. V. Iodometric [illegible] peroxydisulfuric

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the [illegible] which the name [illegible] Philip S. Baker
H_2O_2, for which the name [illegible]
acid is suggested.

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SCHULEK, E.

HUNG.

613. Peroxy compounds. II. Iodimetric determination of persulphuric acid in the presence of hydrogen peroxide. (Bromine method.) E. Schulek, I. Trompler and E. Pungor (*Acta Chim. Hung.*, 1954, 4 [2–4], 405–410).—The sample (0·7 to 1·4 mg of H_2O_2 or 5 to 10 mg of $H_2S_2O_8$) is diluted to ≃ 20 to 25 ml with water in a glass-stoppered 100-ml Erlenmeyer flask, and shaken with bromine water; excess of Br is removed by adding 1 per cent. hydrazine dropwise. One or two drops of methyl orange are added to the colourless solution, which is then treated gradually with ≃ 0·01 *N* bromine water until the red colour of the indicator disappears. After addition of 1 to 2 drops of 5 per cent. phenol, the mixture is thoroughly shaken. Alternatively, most of the Br can be removed with hydrazine and the remainder immediately with phenol. After 5 min., KI (0·5 g) and $(NH_4)_2SO_4$ (4 g) are added, the solution is acidified with 10 per cent. H_2SO_4 (≃ 0·75 ml), heated at ≃ 50° C for 5 min., cooled, and the separated I is titrated with 0·01 *N* $Na_2S_2O_3$ in the presence of starch. The method is valid for 0·1 *N* solutions. The simultaneous determination of H_2O_2 and $H_2S_2O_8$ is carried out as described in Abstract 612 above.

H. WREN

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SCHULEK, E.

HUNG.

614. Peroxy compounds. III. Iodimetric determination of persulphuric acid in the presence of hydrogen peroxide. (Thiocyanate method.) E. Pungor, E. Schulek and J. Trompler (*Acta Chim. Hung.*, 1954, 4 (2-4), 411–416).—The sample (≃ 0·7 to 1·4 mg of H_2O or 5 to 10 mg of $H_2S_2O_8$) is diluted to ≃ 20 ml with water in a glass-stoppered 100-ml Erlenmeyer flask and treated with 10 per cent. H_2SO_4 (0·2 ml), 0·1 *M* KCNS (≃ 4 ml) and 1 drop of 5 per cent. ammonium molybdate. The liquid is shaken and kept for 3 min. with frequent loosening of the stopper. It is made alkaline for a few seconds with 4 per cent. NaOH (1 ml) and then acidified with 10 per cent. H_2SO_4 (≃ 1 ml). After addition of KI (≃ 0·5 g) and $(NH_4)_2SO_4$ (4 g), the loosely stoppered flask is heated at 50° C for 5 min., then cooled, and the liberated I is titrated with 0·01 *N* $Na_2S_2O_3$ in the presence of starch solution (which is added towards the end of the titration after dilution with ≃ 50 ml of water). The sequence of addition of reagents is important. The use of 0·1 *N* solutions is not recommended. H. WREN

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SCHULEK, E.

HUNG.

615. Peroxy compounds. IV. Iodimetric determination of permonosulphuric (Caro's) acid and hydrogen peroxide in the presence of one another. (Thiocyanate method.) E. Pungor, E. Schulek and I. Trompler (*Acta Chim. Hung.*, 1954, 4 [2-4], 417–422).—The sample (≃ 0·7 to 1·4 mg of H_2O_2, or 0·6 to 6 mg of H_2SO_5) is diluted to ≃ 20 to 25 ml of water in a glass-stoppered 100-ml Erlenmeyer flask, acidified with 10 per cent. H_2SO_4 (≃ 2 ml) and treated with 0·1 *N* KCNS (≃ 0·5 ml). After ≃ 15 sec., KI (≃ 0·2 g) is dissolved in the solution, which is well shaken, and then treated with 1 drop of 5 per cent. ammonium molybdate soln. The liberated I is titrated with 0·01 *N* $Na_2S_2O_3$ in the presence of starch solution (added towards the end of the titration, after dilution with ≃ 50 ml of water). Another sample is similarly acidified, then treated with KI (≃ 0·5 g) and 1 drop of molybdate solution. The I, liberated by H_2O_2 and H_2SO_5, is titrated with 0·01 *N* $Na_2S_2O_3$ in the presence of starch. The method can only be used with 0·01 *N* solutions.

H. WREN

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SCHULEK, E.

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HUNG

610. Peroxy compounds. V. Iodimetric determination of permonosulphuric and persulphuric acid and of hydrogen peroxide in the presence of one another. (Thiocyanate method.) E. Pungor, E. Schulek and J. Trompler (*Acta Chim. Hung.*, 1954, 4 (1-4), 423-428).—For the determination of total H_2SO_5, $H_2S_2O_8$ and H_2O_2, the sample (≃ 1·2 mg of O) is diluted with water to ≃ 20 to 25 ml in a glass-stoppered 100-ml Erlenmeyer flask and acidified with 10 per cent. H_2SO_4 (≃ 1 ml). After addition of KI (0·5 g), $(NH_4)_2SO_4$ (4 g) and one drop of 5 per cent. ammonium molybdate solution, the solution is warmed at ≃ 50° C for 5 min., and the liberated I is titrated in the cooled solution with 0·01 N $Na_2S_2O_3$ in the presence of starch solution. For the determination of $H_2S_2O_8$ plus H_2O_2, the sample, measured and diluted as described above, is shaken after the addition of 10 per cent. H_2SO_4 (≃ 0·2 ml) and 0·1 M KCNS (≃ 0·5 ml). After ≃ 15 sec., KI (0·5 g) is added and the solution is well shaken, treated with 1 drop of 5 per cent. ammonium molybdate solution followed by $(NH_4)_2SO_4$ (4 g), warmed at 50° C and cooled. The liberated I is titrated with 0·01 N $Na_2S_2O_3$ in the presence of starch solution (added towards the end of the titration and after dilution with ≃ 50 ml of water). For

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the determination of $H_2S_2O_8$, the sample, measured and diluted as described above, is treated with one drop of 5 per cent. ammonium molybdate solution and 0·1 *M* KCNS (≃ 4 ml). After 3 min., the solution is made alkaline for a few sec. with 4 per cent. NaOH (1·5 ml) and re-acidified with 10 per cent. H_2SO_4 (≃ 1 ml). Potassium iodide (0·5 g) and $(NH_4)_2SO_4$ (4 g) are dissolved in the mixture, which is heated at ≃ 50° C for ≃ 5 min. The liberated I is titrated in the cooled solution with 0·01 *N* $Na_2S_2O_3$ in the presence of starch solution. The method is only recommended for use with 0·01 *N* solutions. The sequence of addition of the reagents is important. The composition of the anode liquid in H_2O_2 manufacture is thus determined; after 24 hr. the solution contains almost pure H_2SO_4.

H. WREN

E. Pringov

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SCHULEK, E.

HUNG.

19. On the chemistry of peroxy compounds (In German) — E. Schulek, E. Punger, J. Trompler. (Acta Chimica Academiae Scientiarum Hungaricae — Vol. 4, 1954, No. 2-4, pp. 445-456, 5 figs., 3 tabs.)

Analyses carried out by the so-called bromide method developed by the authors for the determination of various peroxy sulphuric acids demonstrated the existence of a new type peroxy sulphuric acid of the formula $H_2SO_5 \cdot H_2O_2$. The authors denominated this compound as "solvate" peroxy monosulphuric acid (Caro's acid). Attempts are being made to find an explanation, based on structural chemistry, for the formation of peroxy monosulphuric acid and "solvate" peroxy monosulphuric acid.

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SCHULEK, E.

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Iodometric determination of chromic ions. E. Schulek and M. Szakács (L. Eötvös Univ., Budapest). *Acta Chim. Acad. Sci. Hung.* 4, 457-60(1954)(English summary). —The microdetn. of Cr^{+++} comprises oxidizing it to CrO_4^{--} in an alk. soln. with H_2O_2, and then after removing the excess H_2O_2 with water and the excess of Cl water with KCN and measuring the CrO_4^{--} iodometrically. P. S. B.

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SCHULEK, E.

~~GEH~~

Morphology of barium sulfate precipitates prepared by the L. W. Winkler method. E. Schulek, E. Pungor, and F. Gubis (L. Eotvos Univ., Budapest). *Anal. Chim. Acta* 10, 506-12(1954)(in German); cf. *C.A.* 47, 11957*e*.—By investigations employing the electron microscope it is shown that an addn. of NH_4Cl at the time of the pptn. of $BaSO_4$ according to W.'s method exerts an influence on the morphology of the ppt.; the latter then filters easily.

Landon A. Sarver

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GERM.

Electron-microscope investigations in the sphere of crystal formation. E. Pungor, E. Schulek, and F. Guba (L. Eötvös Univ., Budapest). *Anal. Chim. Acta* 11, 12-17 (1954)(in German).—The microstructure of NH_4Cl crystals was studied with the electron microscope. The results confirm the accuracy of the Kast-Smekal representation (*C.A.* 22, 912, 3074). Laudon A. Sarver

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SCHULEK, Elemer, Dr. egyetemi tanar, akademikus

Remarks on the 5 edition of the Hungarian pharmacopeia.
Nepegeszsegugy 35 no.9:230-233 Sept 54.
(PHARMACOPEIA
Hungary, 5th edition)

Schulek, Elemer

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Silver iodide surface reactions. Elemér Schulek, Endre Pungor, and Ilona Konkoly Thege. *Magyar Tudományos Akad. Kém. Tudományok Osztályának Közleményei* 5, 661-5 (1955).—Either dried, or a suspension of freshly pptd., AgI reacts with a soln. of 0.1*N* HNO_3 (freshly prepd. from $NaNO_3$ and HNO_3) in the presence of $CaCl_2$. AgI crystals when boiled with $CaCl_2$ soln. react at the surface to form a complex that sets some of the iodide free and this in turn is oxidized by HNO_3 to I. In the presence of excess HNO_3 the extent of the reaction is governed by the surface area of AgI and the concn. of $CaCl_2$. A. Ills

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Schulek, Elmer

Reaction of sulfur with water and formation of polysulfides. Elemér Schulek, Endre Koros, and László Maros (Eötvös Loránd Tudományegyetem, Budapest). *Magyar Tudományos Akad. Kém. Tudományok Osztályának Közleményei* 7, 91-100(1955).—Sulfur reacts with boiling H_2O according to $2S + 2H_2O = H_2S + H_2SO_2$. H_2SO_2 decomp. instantaneously in acid soln. to SO_2 and S, and in alk. soln. to $S_2O_3^{--}$ and H^+. In aq. medium S reacts with OH^- upon warming according to $12S + 6\,OH^- = 2(S.S_4)^{--} + S_2O_3^{--} + 3H_2O$. The polysulfide hydrolyzes slowly when boiled forming $S_2O_3^{--}$ and H_2S. In the reaction between S and OH^-, the polysulfide is only an intermediate product. S_6^{--} is the largest stable polysulfide in aq. soln. D. F.

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Schulek, E.

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24. **Reactions on silver iodide surfaces.** (In German) E. Schulek, E. Pungor, I. Konkoly Thege. *Acta Chimica Academiae Scientiarum Hungaricae.* Vol. 7, 1955, No. 1—2, pp. 149—154, 5 figs.

Investigating the mechanism of the indication reactions of adsorption indicators it was found that in the case of *p*-ethoxy-chrysoidine the functioning of this indicator is the consequence of an acid-base reaction occurring on the surface through the action of excess autogenous (Ag^+ or I^-). According to the adsorption curve obtained by experimental measurements for *p*-ethoxy-chrysoidine the dye adsorption varies as a function of the quality and quantity of the autogenous ions. The slope of the tangent of the adsorption curve remains constant even at the equivalency point where I = Ag. The experiments were conducted with silver iodide precipitates prepared in two different ways. In the first series of experiments a silver iodide prepared in advance by precipitation filtration, washing and drying in the dark was investigated. In the second series the silver iodide precipitated directly in the reaction vessel was examined. Experimental data obtained confirmed that interaction between silver iodide and nitrous acid occurs in the presence of potassium chloride. The reaction proceeds in conformity with the Nernst equation.

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SCHUCEK, E.

Oxidation reactions occurring on the surface of silver iodide. E. Pungor, I. Konkoly Thege, and E. Schulek (L. Eötvös Univ., Budapest). *Acta Chim. Acad. Sci. Hung.* 8, 49-65(1955)(in German)(English summary); cf. *C.A.* [illegible] (5.90 mg.) in a microdistn. app. was [illegible]

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SCHULEK, E.; PAIS, I.; PATAKI, L.

Data on the chemistry of vanadium compounds. p. 282. MAGYAR KEMIAI FOLYOIRAT. Budapest. Vol. 61, no. 9, Sept. 1955.

SOURCE: East European Accessions List (EEAL), LC, Vol. 5, No. 2, Feb. 1956

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

SCHULEK, E.; LOROS, E.

Valence and binding number (oxidation number). p. 321. Vol 61, no.11, Nov. 1955. ACTA ZOOLOGICA, ELET ES TUDOMANY, and MAGYAR KEMIAI FOLYOIRAT. Budapest, Hungary.

So: Eastern European Accession. Vol 5, no. 4, April 1956

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New ideas in gas analysis. I. Tension measurement on a microscopic scale. E. Schulek, B. Pungor, and J. Trompler (Univ. Budapest). ~~Mikrochim.~~ *Acta* 1956, ~~1008-23~~ (in German). ~~After~~ a crit. discussion of the basic principles of gas analysis, a new device is described which provides for taking samples from gases with exactness. The individual constituents of the gases or vapors are deed from separate portions. The usefulness of the procedure was shown by the tension curves of abs. EtOH and MeOH. W. T. Hall

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SCHULEK, E.

New methods in gas analysis. II. Titrimetric analysis of gas mixtures. E. Schulek and E. Pungor (L. Eötvös-Univ., Budapest). Mikrochim. Acta 1956, 1120-35; cf. C.A. 50, 9231d.—Two procedures are given for detg. O in gas mixts. For higher contents the O is made to combine with MnO at 200-250° and the higher oxide formed is detd. iodometrically. The second method is also based on the iodometric detn. of the Mn oxide. The detn. of N_2O_3, or of NO and NO_2, is also made with the aid of an iodometric titration. W. T. H.

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SCHULEK, E.

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800 New methods in gas analysis. I. Measurement of tension by microchemical methods. (Vapour space analysis.. E. Schulek, E. Pungor and J. Trompler (Inst. Anorg. und Anal. Chem. der L. ... Mikrochim. Acta 1956

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gases. The individual [illegible] The procedure
separate portions of material [illegible]
illustrated by analysis of methanol and ethanol.
M. F. C. LADD

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SCHULEK, E.

15. Manganese (II) carbonate and some of its valuable properties for gas analysis. E. Schulek and E. Pungor (Eötvös Univ., Budapest, Hungary): *Mikrochim. Acta*, 1956, (7-8), 1110-1119.—*Preparation of reagent*—Dissolve $MnCl_2.4H_2O$ (25 g) in H_2O (50 ml). Pour into a filtered soln. of $NaHCO_3$ (20 g) in H_2O (200 ml). Filter off the ppt. of $MnCO_3.2H_2O$; wash it with H_2O and then with 98% alcohol (x 3 or 4). Dry under air suction and remove the last traces of H_2O and alcohol with pentane. This prep. remains stable for 12 to 14 days. Water of crystallisation is lost at 70° to 100°, and at 250° to 300° pale-green MnO is formed. This is characterised by its ready absorption at 200°, not only of O, but also of gases that readily release O (NO, NO_2). At 450° to 500° N_2O is absorbed. Thus the prep. may be utilised in gas analysis (*Anal. Abstr.*, 1957, 4, 16) for the removal of traces of O from a number of gases *e.g.* N and H. The surface area may be advantageously increased by mixing the $MnCO_3.2H_2O$ with glass grit that has first been heated with HCl and then dried after washing with alcohol and pentane.

D. F. PHILLIPS

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10. New methods of gas analysis. II. Volumetric determination of gas mixtures. I. Iodimetric determination of oxygen. E. Schulek and E. Pungor (Eötvös Univ., Budapest, Hungary). *Mikrochim. Acta*, 1956, (7–8), 1120–1135.—Methods are described for the determination of oxygen and

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The system hydrogen peroxide-acetic acid. E. Pungor, J. Trompler, Zs. Remport and E. Schulek (*Acta chim. hung.*, 1953, 8, 321—333).—The rate of formation of peracetic acid in the system H_2O_2–acetic acid was measured as a function of acetic acid concn.

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SCHULEK, E.

East Germany/Inorganic Chemistry. Complex Compounds. C

Abs Jour : Referat. Zhurnal Khimiya, No 6, 1957, 18326

Author : E.Schulek E. Koros, L. Maros.
Inst : Academy of Sciences of Hungary
Title : Sulphur Hydrolysis and Chemistry of Polysulfides.

Orig Pub : Acta Chim. Acad. Sci. Hung., 1956, 10, No 1 - 3

Abstract : When fine sulphur powder is boiled in water, hydrolysis is taking place in accordance with the reaction $2S + 2H_2O = H_2S + H_2SO_2$. The forming H_2SO_2 decomposes immediately according to one of the schemes: $2H_2SO_2 = SO_2 + S + 2H_2O$ (at pH < 7), or $2H_2SO_2 = S_2O_3^{2-} + H_2O + 2H^+$ (at pH > 7). The attempts to isolate H_2SO_2 or its salts proved to be unsuccessful. The correctness of the above equations was confirmed only by the ratio of the hydrolysis products. In the discussed solution of $AgClO_4$, the hydrolysis by sulphur proceeds according to the equation $4S + 4H_2O + 6Ag^+ = 3Ag_2S + SO_4^{2-} + 8H^+$. If sulphur is

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East Germany/Inorganic Chemistry Complex Compounds. C

Abs Jour : Referat. Zhurnal Khimiya, No 6, 1957, 18326

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heated in an alkaline solution in a flow of N, polysulfides will result: $12S + 6OH^- = 2(S.S_4)^{2-} + S_2O_3^{2-} + 3H_2O$. In the authors' opinion, first the sulfide is composed, and it binds the free sulphur later. The dialysis experiments showed that the maximum amount of sulphur bound by the Na_2S solution answers the formation of Na_2S_5. Stale polysulfide is hydrolized further: $2(S.S_4)^{2-} + 6H_2O = 2S_2O_3^{2-} + 6H_2S$

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SCHULEK, E.

V E. Schulek, E. [illegible] and [illegible] 2

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Schulek, E

HEGYESSY, Gyula, dr.; BOZSOKY, Sandor, dr.; SCHULEK, Elemer, dr.

Antitetanus antitoxin immunity in connection with typhoid-tetanus vaccination. Nepegeszsegugy 37 no.7:175-178 July 56.

1. Kozlemeny az Orszagos Kozegeszsegugyi Intezetbol (foigazgato: Tako, Jozsef, dr.).

(TETANUS, immunol.
tetanus-typhoid fever vacc., eff. of previous typhoid fever vacc. on tetanus antitoxin immunity (Hun))

(TYPHOID FEVER, prev. & control
typhoid fever - tetanus vacc., eff. of previous typhoid fever vacc. on tetanus antitoxin immunity (Hun))

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

SCHULEK, E

4528. Immunity against tetanus toxin following use of combined typhoid-tetanus vaccine. G. Hegyessy, S. Borsóky, and E. Schulek, jun. *Brit. J. exp. Path.*, 1956, 37, 300—305 (State Inst. of Public Hlth of Hungary, Budapest, Hungary).—A combined typhoid-tetanus prophylactic was given to 2 groups of 12-year-old children, one group having previously been immunised on 3 occasions with typhoid vaccine alone. There was no difference in the tetanus antitoxin response of the 2 groups. R. H. Cowdell

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

SCHULEK, E.

19 Investigation of exchange reactions with the radioactive sulfur isotope (S^{35}). I. Endre Koros, László Matos, István Fehér, and Elemér Schulek. *Magyar Kém. Folyóirat* 63, 213-16(1956).—Various authors have investigated the exchange reaction with polysulfide (I) contg. S^{35} in hot soln. during decompn. with acid. Since in this case S also is pptd., the authors attempted the production of I in an O_2-free atm. without prolonged boiling, transforming the polysulfidic S into thiocyanate by means of KCN, or liberating H_2S by boiling with H_3BO_3, and prepd. $BaSO_4$ from this, after which the activity of the latter was measured. S^{35} was produced from methionine by way of $BaSO_4$. In the microapp. described I was formed within a few min. from Na_2S and S^{35} at low heat, and this was decompd. with KCN and H_3BO_3. The H_2S was boiled out, transformed into $BaSO_4$ by NH_4OH and H_2O_2, the thiocyanate was oxidized in the remaining soln. with Br_2, and $BaSO_4$ was formed. The activity was measured with consideration of the autoabsorption of $BaSO_4$. The S of I was completely exchanged. In addnl. expts. S was dissolved in abs. toluene and put into the test tube together with Na_2S. The Na_2S and the I formed are insol. in toluene; the decompn. showed that the exchange took place also in the solid phase. In the expts. sulfide and thiocyanate were in the soln. simultaneously, and an investigation was therefore made to discover whether a S exchange took place between them. This was not the case. Since in the presence of O_2 the sulfide forms thiosulfate easily, an investigation was made also to discover whether an exchange took place between the thiocyanate and the thiosulfate. These expts. also remained neg. From *C.Z.* 1958, 7057-8. F. ~~X. G.~~

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

SCHULCK, E.

2619. p-Ethoxychrysoidine as an acid - base and redox indicator. E. Tungor and E. Schulck (Inst. Inorg. and Anal. Chem., L. Eötvös Univ., Budapest, Hungary). *Z. anal. Chem.*, 1950, 150 (5), 161 - 166.—From the extinction curves of *p*-ethoxychrysoidine at various pH values, a mechanism is suggested for the colour changes that occur when this compound is used as an acid - base indicator. The formation of quaternary ammonium bases is considered to take place. When used as a redox indicator, *p*-ethoxychrysoidine is oxidised to an azoxy product. The redox potential is 0·76 V when measured against a normal hydrogen electrode.

J. H. WATON

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

SCHULEK, E.

2618. New theory of adsorption indicators. p-Ethoxychrysoidine as an adsorption indicator. E. Pungor and E. Schulek (Inst. Inorg. and Anal. Chem., L. Eötvös Univ., Budapest, Hungary). *Z. anal. Chem.*, 1956, 150 (3), 166–178.—*p*-Ethoxychrysoidine is known to be a suitable adsorption indicator for the determination of I′, but it differs from other similar indicators in not showing a large change in adsorption at the end-point. Experiments have been carried out on the adsorption of indicators on to silver halide surfaces which have led to the replacement of Fajans's theory by a new theory of adsorption indicators. The physico-chemical constants of the adsorbed indicator depend on the nature and amount of the ions adsorbed on to the surface of the ppt. The change of one of these constants (which one must be decided for each indicator) at the end-point of the titration causes a change in colour. When *p*-ethoxychrysoidine is used in the determination of I′, the indicator undergoes an acid - base change at the end-point. In the presence of an excess of I′, adsorbed I′ attract protons so that the indicator assumes the acid form, leaving the soln. alkaline. In the presence of an excess of Ag^+, adsorbed Ag^+ expel protons so that the indicator assumes the alkaline form whilst the soln. becomes acid.

J. H. WATON

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Schulek, E.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

SCHULEK, E.

2076 New methods of gas analysis. III. Physical and chemical properties of alcohol-water systems. E. Schulek, E. Punger and I. Trompler (Eötvös Univ., Budapest, Hungary). Mikrochim. Acta 1967, 1, 85-96 (in German). Measurements are reported of tension, viscosity and other physical constants of various alcohol-water systems. From these results and from literature data, it is concluded that the deviations from ideal conditions that were found are functions of molecular arrangement and that molecular arrangement varies with the component conc. D. F. PHILLIPS

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SHULEK, E ~~BURGER~~

E-3

Hungary / Analytical Chemistry.
Analysis of Organic Substances.

Abs Jour: Ref. Zhur - Khimiya No. 2, 1958, 4364

Author : Shulek, Burger

Title : A New Iodometric Method for the Determination of Hydroquinone.

Orig Pub: Acta pharmac. hung., 1957, 27, No 1-2, 5-7

Abstract: A sample (3-10 mg.) of an aqueous hydroquinone solution (1) is placed into a flask with a ground glass stopper and made up to a volume of 30-40 ml. Bromine water is added dropwise until there is a yellowish coloration in the solution. The flask is shaken, then after 1/2 minute, 5 ml. of 5% phenol solution (11) is added rapidly, agitating vigorously. 0.20 g. of Ki is added and the solution acidified with 5 ml. of 20% HCl. After

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to the determination of quinone and (1) in quinhydrone.

Card 2/2

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SCHULEK E.

HUNGARY/Chemical Technology. Pharmaceutics. Vitamins. Antibiotics. H

Abs Jour: Ref Zhur-Khim., No 24, 1958, 82710.

Author : Schulek E., Maros L.
Inst :
Title : The Data of the Analysis of Some Methan Sulfoacid Derivatives. I. The Iodometric Determination of Novalgine and Melubrin in the Presence of Antipyrine and Pyramidone.

Orig Pub: Acta Pharmac. hung., 1957, 27, No 6, 237-242.

Abstract: No abstract.

Card : 1/1

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

HUNGARY / Physical Chemistry. Kinetics. Combustion. Explosions. Topochemistry. Catalysis. B

Abs Jour: Ref Zhur-Khimiya, No 24, 80725.

Author : Koros E., Maros L., Feher I., Schulek E.
Inst : Not given.
Title : Investigation of the Exchange Reactions Involving Radioactive Sulfur. I. Information Pertaining to Exchange of Sulfur Atoms in Polysulfides.

Orig Pub: Magyar kem. folyoirat, 1957, 63, No 8, 213-216.

Abstract: Previously published works on the atom exchange in polysulfides were thoroughly reviewed. A method of separation of sulfides from polysulfide ions is proposed. The components involved were converted into $BaSO_4$. Activities were determined with the use of G.-M. counters. An

Card 1/2

21

HUNGARY / Physical Chemistry. Kinetics. Combustion. Explosions. Topochemistry. Catalysis. B

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3"

Abs Jour: Ref Zhur-Khimiya, No 24, 1958, 80725

Abstract: overall exchange (even in the solid phase) was observed in every experiment. A method of isolating elementary sulfur from the marked is described. Exchange of sulfur atoms occurring between sulfides and thoicyanate as well as between thiocyanate and thiosulfate was studied. Its existence, however, could not be detected.

35

Card 2/2

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

SCHULEK, E.

Investigating the purity of amino acid preparations.

p. 322. (MAGYAR KEMIAI FOLYOIRAT) Vol. 63, no. 11, Nov. 1957
Budapest, Hungary

SO: Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 3 , March 1958

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

Schulek, E.

4

Purity tests for amino acid preparations. E. Schulek and Z. L. Szabó (L. Eötvös Univ., Budapest). *Z. anal. Chem.* 157, 405–11(1957).—The amino acid(s) (I) sample is chromatographed on paper. Foreign I are detected by the ninhydrin reaction and N is detd. on all spots. The designation "paper chromatographically pure" is suggested for samples with no foreign I present. — E. G. Stone.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

Gas analysis. IV. Microchemical vapor pressure measurement of phenol. E. Schulek, E. Pungor, and I. Trompler (L. Eötvös-Univ., Budapest, Hung.). *Mikrochim. Acta* 1958, 52-9; cf. *C.A.* 51, 11174c.—A previously described app. was used in the detn. of the vapor pressure of pure phenol and of the phenol above phenol-water mixts. between 50 and 70°. The deviation from the av. result was ±1° to 2%. The findings relating to pure phenol are compared with those obtained by Kahlbaum (*Z. physik. Chem.* (Leipzig) 26, 603(1898)) on a phys. basis. The results were in every case greater than Kahlbaum's. The percentage of difference decreased as the exptl. temp. was increased.

H. W. Harvey

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

7 7

Substitutive halogenation of aromatic compounds in aqueous solutions by interhalides. I. Halogenating effect of iodine monochloride, iodine monobromide, and bromine monochloride. E. Schulek and K. Burger (L. Eötvös Univ., Budapest, Hung.). *Talanta* 1, 147-52(1958).—A soln. of BrCl, provided it possesses an appropriate stability, can serve for preparative purposes in org. chemistry or as a standard titrant in analytical chemistry. IBr is unsuitable for this purpose. BrCl acts exclusively as a brominating agent, but BrI acts partly as a brominating agent and partly as a iodating agent, even in aq. solns. contg. Br^-. II. *Ibid.* 219-23.—A new method has been evolved for the prepn. of a BrCl soln. contg. HCl. In a HCl soln., BrO_3^- reacts quantitatively with Br^- to form BrCl, provided that they are present in equiv. amts. A 0.1*N* soln. of BrCl contg. HCl showed less than 3-5% change of titer after storage for 3 months. A new method has been evolved for the detn. of the BrO_3^- content of a BrCl soln. The interaction of BrCl and CN^- yields Cl ions and BrCN, BrCN is basically hydrolyzed to Br^- and CNO^-, then acidified and hydrolyzed to NH_4^+ and CO_2. Subsequently, BrO_3^- can be measured by iodometry. A method has also been evolved for the detn. of the content of elementary Cl in BrCl soln. For the purposes of bromination of excess BrCl, the use of a 0.1*N* soln. of BrO_3^- which contains KBr in an amt. equiv. to BrO_3^- is suggested. III. *Ibid.* 224-37.—Bromination of certain phenols by BrCl was investigated, and the method was applied to quant. measurements. BrCl was prepd. in the bromination flask in a HCl medium from equiv. amts. of BrO_3^- and Br^- 1:2 molar ratio. The application of BrCl does not increase the no. of compds. capable of being brominated, but raises the rate of bromination appreciably.

Beth L. Rosenfelt

6
2-May
2

GW Distr: 4E2c/4E3c

1/1

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

E. SCHULEK

Distr: 4E3d/4E2c(j)

Determination of hydrazine and hydrazine derivatives with bromine as a standard solution. E. Schulek and K. Burger (L. Eötvös Univ., Budapest, Hung.). *Talanta* 1, 344-50(1958).—A method was evolved for the detn. of hydrazine and hydrazine derivs. (such as phenylhydrazide, semicarbazide, isonicotinic hydrazide) with the use of standard BrCl soln. The titration values are not affected by the degree of acidification or by the nature of the acid used.

Bella L. Rosenfeld

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2 May
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APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

SCHULEK, E., and others

Contribution to the chemistry and analysis of elementary sulfur and of some of its compounds. In German. p. 223.

CHEMIA ANALITYCZNA. (Komisja Analityczna Polskiej Akademii Nauk i Naczelan Organizacja Techniczna) Warszawa, Poland, Vol. 3, no. 3/4 1958

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 7, July 1959

Uncl.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

SCHULEK, E.

Distr: 4E3d

The structure of the tribromophenol-bromine adduct. E. Schulek and K. Burger (L. Eötvös Univ., Budapest, Hung.). *Acta Chim. Acad. Sci. Hung.* 17, 211-24(1958) (in German).—The structure of the title compd. (I) was investigated. Chem. reactions indicated that 1 of the 4 Br atoms of the mol. possessed a $\delta +$ charge, and was responsible for the oxidizing ability of the compd. Comparison of the ultraviolet absorption curve of I with those of aromatic and quinoidal compds. of related structures indicated that I was an aromatic, non-quinoidal compd. Infrared absorption curves, however, showed the existence of a quinoidal structure, leading to the conclusion that an equil. existed between the 2 structures. In aq. suspensions, the equil. appeared to shift in favor of the aromatic structure.

Jane N. McShane

MIK

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

7

Distr: 4E2c(j)

Analysis and chemistry of dithionites. Elemer Schulek and Laszlo Maros (L. Eötvös Univ., Budapest). *Acta Chim. Acad. Sci. Hung.* 17, 273-88(1958)(in German); cf. *C.A.* 52, 12675a.—A method is presented for the detn. of dithionite (I), thiosulfate (II), pyrosulfite (III), and SO_3 (or SO_3^{--}) in the presence of each other. The basis of this method is the disproportionation of I into HSO_3^- and II when heated in water at 80-100°. Iodine consumption before disproportionation is governed by the equation $2S_2O_4^{--} + 6I_2 + 8H_2O = 4SO_4^{--} + 12I^- + 16H^+$ and after disproportionation by the equation $S_2O_3^{--} + 2HSO_3^- + 2.5I_2 + 2H_2O = 0.5S_4O_6^{--} + 2SO_4^{--} + 5I^- + 6H^+$. This permits the detn. of I and (II + III + SO_3 + SO_3^{--}). An acidimetric titration after disproportionation by using NaOH soln. and thymolphthalein indicator permits the detn. of III + SO_3. Treatment of the disproportionated dithionite soln. with $AgNO_3$ soln. and H_2O_2 permits the detn. of $S_2O_4^{--}$ + $S_2O_3^{--}$. The reaction here is $S_2O_3^{--} + 2Ag^+ + H_2O = Ag_2S + SO_4^{--} + 2H^+$. After removal of the excess $AgNO_3$ (with KCl) the soln. is titrated with NaOH soln. with methyl red as indicator. The procedure thus consists of two iodometric and two acidimetric titrations and permits the detn. of the various species present to ±0.5%. Whether there is SO_3 or SO_3^{--} present can be detd. from these titrations, but a differentiation of these species is not made. The authors give simplified formulas for the calcn. of the percentage of the various species from the titrations.

Mark M. Jones

4
2 May
1

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

ZMA 1
4E2C(f)

4

Analysis of aldehydes. I. Direct iodometric determination of formaldehyde and acetaldehyde as aldehyde bisulfites.[1] E. Schulek and L. Maros (L. Eötvös Univ., Budapest). *Acta Chim. Acad. Sci. Hung.* 17, 369–75(1958)(in German).—CH_2O and AcH were detd. from a weighed sample by direct I titration. Into a 100-ml. measuring flask 0.4–0.5 g. CH_2O or 0.2–0.25 g. AcH was weighed, H_2O added to 100 ml., a 10-ml. aliquot treated with 3 ml. 5% $NaHSO_3$, and the soln. acidified with HOAc. Then 5 ml. C_6H_{12} was added to prevent air oxidation and loss of SO_2. After 10 min. for CH_2O and 20 min. for AcH, 10 drops of 1% starch soln. was added, and the excess sulfite titrated with 0.1*N* I. Then 3 ml. 20% NaOH and 2 ml. 20% KCN was added; after 3 min. the soln. was acidified with 20% HCl and titrated with slow stirring with 0.1*N* I. The quantity of I used is proportional to the aldehyde, which has an equiv. wt. of half its mol. wt. Results obtained with this method were in agreement with other methods, and the error was ±0.2%.

Claire Bluestein

MMC
1/1

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H

COUNTRY : HUNGARY
CATEGORY : Chemical Technology. Chemical Products and Their Uses. Part 3. Synthetic and Natural*

ABS. JOUR. : RZKhim., No. 1 1960, No. 2149

AUTHOR : Schulek, E.; Laszlovszky, J.
INST. :
TITLE : Simple and Safe Method for Determining the Decomposition of Dimethyl Sulfate and Diethyl Sulfate

ORIG. PUB. : Acta pharmac. hung., 1958, 28, No 3, 89-95

ABSTRACT : A method is proposed for determination of H_2SO_4 and CH_3HSO_4 or $C_2H_5HSO_4$, which are formed during the decomposition of dimethyl sulfates and diethyl sulfates, by titration in $CHCl_3$ with 0.1 n. NaOH in the presence of phenolphthalein. For quantitative determination of dialkyl sul-

*Medicinal Substances. Galenicals and Medicinal Forms

CARD: 1/3

H-50

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3"

H

COUNTRY :
CATEGORY :

ABS. JOUR. : RZKhim., No. 1 1960, No. 2149

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT cont'd : fates, to 20 ml of 0.1 n. KOH solution in C_3H_7OH, 0.12-0.15 g of analyzed sample is added, left standing in the case of $(CH_3)_2SO_4$ for 15-20 min and in the case of $(C_2H_5)SO_4$ for 8-10 hours, and the excess of alkali is titrated with 0.1 n. HCl in the presence of methyl red. A pharmacopeial method of determination is also described, in which saponification is carried out by heating with 0.1 n.

CARD: 2/3

H

COUNTRY :
CATEGORY :

ABS. JOUR. : RZKhim., No. 1 1960, No. 2149

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

n-17

COUNTRY : Hungary
CATEGORY :

ABS. JOUR. : RZKhim., No. 21 1959, No. 75799

AUTHOR : Schulek, E. and Burger, K.
INST. : Not given
TITLE : The Determination of Esters of p-Hydroxybenzoic Acid in the Presence of Reducing Compounds

ORIG. PUB. : Acta Pharmac Hung, 28, No 3, 100-104 (1958)

ABSTRACT : The ester of p-hydroxybenzoic acid (I) is saponified in alkaline medium, the I obtained is brominated with excess Br_2 to give bromophenol, the excess Br_2 is tied up with phenol, and the amount of tribromophenol equivalent to the ester of I is determined iodometrically. 0.08-0.1 gm of the methyl ester of I (Nipagin M) in a mixture of 20 ml 2 N NaOH and 60-80 ml water is refluxed for abour 10 min, cooled, and neutralized; 10 ml of the solution obtained are diluted and brominated.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

SCHULEK, E.

SCIENCE

PERIODICALS: ~~ACTA ZOOLOGICA. Vol. 64, No. 7/8 July/Aug. 1958~~
Magyar Kemiai Folyoirat. Vol. 64, No. 7/8 July/Aug. 1958

Schulek, E. The use of btomine chloride in analytical chemistry as volumetric solution. p. 241

Monthly list of East European Accessions (EEAI) LC, Vol. 8, No. 2
February 1959, Unclass.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

E

HUNGARY / Analytical Chemistry. Organic Analysis.

Abs Jour : Ref Zhur - Khimiya, No 23, 1959, No. 82028

Author : Schulek, Elemir; Maros, Laszlo
Inst : Not given
Title : Analysis of Aldehydes. I. Iodometric Determination of Formaldehyde and Acetaldehyde as -Oxysulfonates (Bisulfite Derivatives of Aldehydes)

Orig Pub : Magyar kem. folyoirat, 1958, 64, No 12, 480-482

Abstract : A method for the determination of HCHO and CH_3CHO, based on the iodometric determination of sulfite formed by the decomposition of the aldehyde-bisulfite compound with cyanide, is described. To the aldehyde solution (0.4-0.5 g HCHO or 0.2-0.25 g CH_3CHO) Na_2SO_3 solution is added, and the liquid is covered by a

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

Interhalogen complexes in aqueous solution. E. Pungor, K. Burger, and E. Schulek (L. Eötvös Univ., Budapest, Hung.). *J. Inorg. & Nuclear Chem.* 11, 56-61(1959).—Ultraviolet absorption and oxidn.-redn. measurements of BrCl in aq. HCl indicates presence of $BrCl_4^{1-}$ with stability const. of $2.0 \pm 1.0 \times 10^3$. Similar ICl_4^{1-} and IBr_4^{1-} ions have consts. of, resp., $4.3 \pm 2.2 \times 10^3$ and $5.0 \pm 1.0 \times 10^3$. I_3^- investigation was used as calibration.

Jack J. Bulloff

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

SCHULEK, E.; MAROS, L.; KORCS, E.

Never data on the chemistry of polysulfides; dislytic investigations. p. 439.

KOSLEMENYEL. Mahyar Tudomanyos Akademia. Kemiai Tudomanyok Osztalye.
Budapest, Hungary. Vol. 11, no. 4, 1959.

Monthly List of East European Accession (EEAI), LC, Vol. 9, no. 2, Feb. 1960

Uncl.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

SCHULEK, E; BURGER, K.

Substitution halogenation of aromatic compounds with interhalogen compounds in aqueous solutions; halogenating effect of iodine chlorine, iodine bromine, and bromine chlorine. p. 1

KOZLEMENYEI. Budapest, Hungary. Vol. 12, no. 1, 1959

Monthly list of East European Accessions (EEAI). IC. Vol. 9, No. 1, Jan., 1960.

Uncl.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

SCHULEK, E; BURGER, K.

Preparation and investigation of a bromine-chlorine volumetric solution. p. 9

KOZLEMENYEI. Budapest, Hungary. Vol. 12, no. 1, 1959

Monthly list of East European Accessions (EEAI). IC. Vol. 9, no. 1, Jan., 1960.

Uncl.

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SCHULEK, ELEMER

Distr: 4E2c(j)/4E3d

Determination of aromatic compounds with BrCl bromination. Elemér Schulek and Kálmán Burger (Eötvös Univ., Budapest, Hung.). *Magyar Tudományos Akad., Kém. Tudományok Osztályának Közleményei* 12, 15-24(1959).—Bromination of phenolic compds. is faster with BrCl than with the known bromination methods. Thus, salicylic acid could be brominated quant. in 2 min. even in the presence of acetylsalicylic acid. 4-Hydroxybenzoic acid, 3-nitrophenol, and *m*-cresol can be quant. brominated in 0.5 min.; *p*-cresol in 3 min. This bromination can be used for the detn. of these compds. Andrew W. Zalay

5
1-gag(NB)
2

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SCHULEK, E.: KOROS, E.

Data on the chemistry of setenium and selenium compounds. I. Iodometric determination of selenium in small quantity through bromocyanogen. (to be contd.). p. 175.

KOZLEMENYEL. Mahyar Tudomanyos Akademia. Kemiaia Tudonmanyok Osztalya. Budapest, Hungary. Vol. 12, no. 2, 1959.

Monthly list of East European Accession (EEAI) LC, Vol. ~~xxxxxxxxxxxxxxxxxx~~ 9, no. 2, Feb. 1960

Uncl.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

SCHULEK, E.: BARCZA, L.

DAta on the chemistry of selenium and selenium compounds. II-IV. (To be contd.). p. 183.

KOZLEMENYEL. Mahyar Tudomanyos Akademia. Kemiaia Tudommaryck Osztalya. Budapest, Hungary. Vol. 12, no. 2, 1959.

Monthly list of East European Accession (EEAI) LC, Vol. ~~XXXXXXXXXXXXXXXX~~ 9, no. 2, Feb. 1960

Uncl.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

SCHULEK, E.; KOROS, E.

Data on the chemistry of selenium. p. 195

KOZLEMENYEL. Mahar Tudimanyos Akademia. Kemiaia Tudonmanyck Osztalya. Budapest, Hungary. Vol. 12, no. 2, 1959.

Monthly list of East European Accession (EEAI) LC, Vol. ~~65 1960~~ 9, no. 2, Feb. 1960

Uncl.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

Distr: 4E2c

Interhalogens. E. Schulek, E. Pungor, and K. Burger (L. Eötvös Univ., Budapest, Hung.). *Chem. zvesti* 13, 669-79(1959)(in German).—It was detd. that in an aq. medium the electroneg. part of the interhalogen compd. always participates in formation of halide complexes. It can be assumed that there is homolytic as well as heterolytic dissocn. of the interhalogen compd. The form of dissocn. or its degree is a function of the dielec. const. of the medium. The existence of halide complexes of interhalogen compds., esp. of BrCl, was proved. Jan ~~Mickr~~

6
1-Jag (NB)
1-Mgc (JA)
1

ep.
1/1
abt

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Distr: 4E3d

Analysis of 1,2-glycols and polyoxy compounds. I. Direct iodometric determination of ethylene glycol, glycerol, and mannitol through formaldehyde formed from these compounds by oxidation with periodate. L. Maros and E. Schulek. *Acta Chim. Acad. Sci. Hung.* 20, 353-61(1959)(in German).—Ethylene glycol, glycerol, and mannitol are oxidized by HIO_4, forming 2 moles of HCHO. The latter is converted into the bisulfite by addn. of H_2SO_3, which also destroys excess oxidant. The excess H_2SO_3 is removed and the formaldehyde bisulfite is decompd. by addn. of KCN. The liberated H_2SO_3 is measured by iodometry.

M. Hanwer

CFK

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

SCHULEK, E.; MAROS, L.

Contributions to the analysis of 1, 2-glycols and polyoxy compounds II. Direct iodometric determination of tartaric acid in the presence of citric acid through a bisulfite compound of glyoxylic acid. In German, p.443

ACTA CHIMICA. (Magyar Tudomanyos Akedemia) Budapest, Hungary. Vol. 20, no. 1, 1959

Monthly list of East European Assessions (EEAI) LC Vol. 9, no. 2, Feb. 1960

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

SCHULEK, E.

19 5

The use of isotope Br^{82} to explain the structure of tribromophenol-bromine. E. Schulek, K. Burger, and E. Koros (L. Eötvös Univ., Budapest). *Acta. Chim. Acad. Sci. Hung.* 21, No. 1, 67–70(1959)(in English); cf. *ibid.* 17, 211(1958).—Previous investigations indicated that tribromophenol-bromine (I) possesses aromatic and quinonoid structures in equil. On the basis of various exchange and conversion reactions using Br^{82} ($t_{1/2}$ = 36 hrs.), all 4 Br atoms of I are equiv. This phenomenon may be due to an equil. of different structures or to an exchange between the Br atoms of I and elementary Br, or bromide ions and I. Therefore, Br^{82} appears unsuitable owing to ambiguous results. —Walter Ding

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

SCHULEK, E.; MAROS, L.

Contributions to the analysis of 1, 2-glycols and polyoxy compounds, III Direct iodometric determination of glucose through the aldehydes formed during oxidation with periodic acid. In German. p. 91.

ACTA CHIMICA. (Magyar Tudomanyos Akademia) Budapest, Hungary. Vol. 21, no. 1, 1959

Monthly list of East European Accessions (EEAI) LC, Vol. 9, no. 2, Feb. 1960

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C

COUNTRY : Hungary
CATEGORY :

ABS. JOUR. : RZKhim, No. 1959, No. 85671

AUTHOR : Marcs, L.; Koros, E.; Feher, I.; Schulek, E.
INST. :
TITLE : Study of Exchange Reactions with Radioactive Isotope of Sulfur S^{35}. II. Investigation of the Structure of Dithionite.
ORIG. PUB. : Magyar kem. folyoirat, 1959, 65, No 2, 58-62

ABSTRACT : By means of radioactive isotope S^{35} a study is made of the question concerning disparity of S atoms in dithionite-ion. The reaction $2HS^*O_3^- + CH_2OHSO_2^- \longrightarrow S^*SO_4^{2-} + CH_2OHSO_3^- + H_2O$ was used to obtain $S^*SO_4^{2-}$ ions which were decomposed by heating to HSO_3^- and $S_2O_3^{2-}$. Then, activity of sulfur was determined in HSO_3^- and Ag_2S, obtained by precipitation with silver from solution containing $S_2^*O_3^{2-}$ ions. Since specific activity of sulfur in sulfite and sulfide is the same, it is concluded that in dithionite-ion both sulfur atoms are equivalent. Communication I see RZhKhim, 1958, No 24, 80725.
Yu. Kharitonov.

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SCHULEK, E.

Distr: 4E3b

Investigation of halide complexes of interhalogen compounds. Erno Pungor, Kálmán Burger, and Elemér Schulek. *Magyar Kém. Folyóirat* 65, 301-5(1959).—Halide complexes of interhalogen compds. were investigated. The central Br atom in the chloride complex of BrCl has the coördination no. 6 and the formula $[Br(HCl)_6]^+$; its stability const. is $2.6 \pm 1.0 \times 10^3$. The central I atom in the chloride complex of ICl has the coördination no. 6, the formula $[I(HCl)_6]^+$, and a stability const. of $4.3 \pm 2.2 \times 10^2$. The central I atom in the bromide complex of IBr has a coördination no. of 4, the formula $[I(HBr)_4]^+$, and a stability const. of $5.0 \pm 1.0 \times 10^2$. Results of investigations of the triiodide complex verified the existence of the presumed complexes. G. Batki

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7

Distr: 4E3d

The analysis of 1,2-glycols and polyoxy compounds. László Maros and Elemér Schulek (Eötvös Lóránd Univ., Budapest, Hung.). *Magyar Kém. Folyóirat* 65, 361-3 (1959).—Polyalcs. are oxidized by periodic acid, and the HCHO formed is measured directly with a H_2S-KCN-iodometric system. The method gives 88.1-88.3% accuracy for ethylene glycol, 96.3-96.5% for glycerol, and 99.2-99.4% for mannitol. The advantage of having only one exact volumetric soln., and the usefulness in solns. of any pH are stressed. The method can be used in the presence of oxidizing and reducing agents. Peter M. Barna.

4

1-99 (NB)

C7K

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001447530013-3

SCHULEK, E.

5

Determination of ammonia, cyanide, nitrite, and nitrate in a mixture. E. Schulek, K. Burger, and M. Feher (L. Eötvös Univ., Budapest). *Z. anal. Chem.* 167, 423-9 (1959).—To analyze a soln. contg. NH_3, CN^-, NO_2^-, and NO_3^-, distil NH_3 + HCN at pH 7.5-8.2 into H_2O. Titrate NH_3 with HCl to methyl red indicator. Oxidize HCN to BrCN with Br_2-H_2O and det. BrCN iodometrically. To the distn. residue, pass CO_2 to remove O, add KI and HCl to reduce HNO_3 to NO, remove NO with CO_2, and det. I with $Na_2S_2O_3$ as a measure of NO_3. To the titrated soln. add Devarda's alloy to reduce NO_3^- to NH_3, and det. the NH_3 by distn. and titration. For 1.5-3 mg. NH_3, 0.2-0.7 mg. CN^-, 0.7-1.5 mg. NO_2^-, and 3 mg. NO_3^- the errors are <1%.

K. G. Stone—

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