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LOBLOVICS, Ivan, dr.; GOMORY, Andras, dr.; HUSVETI, Andor, dr.; KUDASZ, Jozsef, dr.; LENCZ, Laszlo, dr.; MARKOS, Gyorgy, dr.; PAPP, Sandor, dr.; SZABO, Zoltan, dr.; SZANTO, Katalin, dr.

Data on the organization of preoperative preparation in surgery performed with extracorporeal circulation. Magy. sebeszet 14 no.6:337-343 D '61.

1. A Budapesti Orvostudomanyi Egyetem IV sz. Sebeszeti Klinikajanak kozlemenye.

(HEART MECHANICAL)

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PAPP, Sandor, dr.; GOMORY, Andras, dr.; HUSVETI, Sandor, dr.; KUDASZ, Jozsef, dr.; LENCZ, Laszlo, dr.; LOBLOVICS, Ivan, dr.; MARKOS, Gyorgy, dr.; SZABO, Zoltan, dr.; SZANTO, Katalin, dr.

Management of patients during the first 24 hours after the use of extracorporeal circulation. Magy. sebeszet 14 no.6:343-350 D '61.

1. A Budapesti Orvostudomanyi Egyetem IV sz. Sebeszeti Klinikajanak kozlemenye Igazgato: Kudasz Jozsef dr. egyetemi tanar.

(HEART MECHANICAL)

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PUSKAS, Erno, dr.; SZABO, Zoltan, dr.

Examinations of the fundus oculi in newborn infants. Magy. noorv. lap. 24 no.6:334-343 N '61.

1. A Budapesti Orvostudomanyi Egyetem II sz. Noi Klinikajanak (Igazgato: Zoltan Imre dr. egyetemi tanar) es a Budapesti Orvostudomanyi Egyetem I sz. Szemeszeti Klinikajanak (Igazgato: Radnot Magda dr. egyetemi tanar) kozlemenye.

(FUNDUS OCULI) (INFANT, NEWBORN)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Zoltan

Experience with tosmilen eye drops. Szemeszet 98 no.1:7-12 Mr '61.

1. A Budapesti Orvostudomanyi Egyetem I sz. Szemklinikajanak (Igazgato: Radnot Magda egyetemi tanar, az orvostudomanyok doktora) kozlemenye.

(DECAMETHONIUM COMPOUNDS ther)
(GLAUCOMA ther)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

KUDASZ, Jozsef, dr.; GOMORY, Anadras, dr.; HUSVETI, Sandor, dr.; LENCZ, Laszlo, dr.; LOBLOVICS, Ivan, dr.; MARKOS, Gyorgy, dr.; PAPP, Sandor, Dr.; SZABO, Zoltan, dr.; SZANTO, Katalin, dr.

Experience with extracorporeal circulation in 1st 10 intracardiac operations. Orv. hetil. 102 no.48:2263-2268 26 N '61.

1. Budapesti Orvostudomanyi Egyetem IV Sebeszeti Klinika.

(HEART MECHANICAL)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

MARKOS, Gyorgy, dr.; GOMORY, Andras, dr.; HUSVETI, Sandor, dr.; KUDASZ, Jozsef, dr.; LENCZ, Laszlo, dr.; LOBLOVITS, Ivan, dr.; PAPP, Sandor, dr.; SZABO, Zoltan, dr.; SZANTO, Katalin, dr.

Blood coagulation regulation during extracorporeal circulation with protamine sulfate titration. Orv. hetil. 102 no.50:2366-2367 10 D '61.

1. Budapesti Orvostudomanyi Egyetem, IV sz. Sebeszeti Klinika.

(BLOOD COAGULATION) (HEART MECHANICAL)
(SULFATES)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Zoltan

A case of septic retinitis cured with the use of artificial kidney. Szemeszet 99 no.1:55-58 Mr '62.

1. A Budapesti Orvostudomanyi Egyetem I sz. Szemklinikajanak (Igazgato: Radnot Magda egyetemi tanar) kozlemenye.

(RETINITIS ther) (KIDNEY ARTIFICIAL)

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SZABO, Zoltan, dr.; GOMORY, Andras, dr.; HUSVETI, Sandor, dr.; KUDASZ, Jozsef, dr.; LENCZ, Laszlo, dr.; LOBLOVICS, Ivan, dr.; MARKOS, Gyorgy, dr.; PAPP, Sandor, dr.; SZANTO, Katalin, dr.

Intra- and postoperative complications in surgery performed under extracorporeal circulation. Orv. hetil. 103 no.14:638-643 Ap '62.

1. Budapesti Orvostudomanyi Egyetem, IV Sebeszeti Klinika.

(HEART MECHANICAL)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

PAJOR, Rezso, dr.; SZABO, Zoltan, dr.; PUSKAS, Erno, dr.

Three-year follow-up examination of 227 newborn infants with retinal hemorrhage. Orv. hetil. 105 no.17:781-783; 26 Ap'64

1. Budapesti Orvostudomanyi Egyetem, I.Szemeszeti Klinika es II. Noi Klinika.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

BRETAN, Miklos, dr., SZABO, Zoltan, dr., JAKAB, Lajos, dr.; BALAZSI, Imre, dr.

Effect of treatment with nor-androstenolone and decanoate on diabetic retinopathy. Orv. hetil. 105 no.25:1171-1174 21 Je'64

1. Budapesti Orvostudomanyi Egyetem, III. Belklinika es I. Szemeszeti Klinika.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Zoltan, dr.

Glaucoma in a case of pituitary tumor. Orv. hetil. 105 no.34:1610-1612 23 Ag '64.

1. Budapest Orvostudomanyi Egyetem, I. Szemeszeti Klinika.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Z.

Therapeutic effect of potassium thiocyanate in hypertension.
Magy.belorv.arch. 3 no.1:27-29 '50. (CLML 19:3)

1. Clinic for Internal Diseases (Director -- Dr. Janos Angyan), Pecs University.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Z.

Folic acid antagonists. Orv. Hetil., Budap. 92 no.32: 1039-1041 12 Aug 1951. (CIML 20:11)

1. First Internal Clinic (Director -- Prof. Dr. Janos Angyan), Pecs University.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Z.; FARKAS, M.

Streptomycin treatment of Friedlander pneumonia. Orv. hetil. 93 no. 26:764-767 29 June 1952. (CIML 23:3)

1. Doctors. 2. First Internal Clinic (Director -- Prof. Dr. Janos Angyan), Pecs Medical University.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Zoltan, dr.; NAGY, Zoltan, dr.

Changes of arterial pressure, blood volume and peripheral resistance during simultaneous administration of certain Rauwolfia alkaloids. Magy.belorv.arch. 12 no.6:169-171 D '59.

1. A Budapesti Orvostudomanyi Egyetem II. sz. Belgyogyaszati Klinikajanak (Igazgato: Dr. Gomori Pal, egyetemi tanar) kozlemenye.

(RAUWOLFIA pharmacol)
(BLOOD VOLUME pharmacol)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Zoltan, dr.; NAGY, Zoltan dr.

Changes in renal hemodynamics and urinary excretion during simultaneous administration of certain Rauwolfia serpentina alkaloids. Magy.belorv.arch. 12 no.6:171-175 D '59.

1. A budapesti Orvostudomanyi Egyetem II. sz. Belklinikajanak (Igazgato: Dr. Gomori Pal, egyetemi tanar) kozlemenye.
(RAUWOLFIA pharmacol)
(KIDNEYS pharmacol)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Zoltan; ERDELYI, Gabor; NAGY, Zoltan

Changes of the greater circulation and kidneys under the influence of reserpine in dogs. Magy. belorv. arch. 13 no.1:27-31 Mr '60.

1. A Budapesti Orvostudomanyi Egyetem III. sz. Belklinikajanak kozlemenye (igazgato: dr. Gomori, Pal, egyetemi tanar)
(RESERPINE pharmacol.)
(KIDNEYS pharmacol.)
(CARDIOVASCULAR SYSTEM pharmacol.)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Zoltan, dr.; KEREKES, Erno, dr.

Essential hyperlipemia. Orv.hetil. 101 no.5:162-166 Ja '60.

1. Budapesti Orvostudomanyi Egyetem, III. sz. Belklinika.
(LIPIDS blood)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Zoltan, dr.

The effect of reserpine on renal hemodynamics and diuresis in patients with hypertension. Orv.hetil. 101 no.40:1413-1415 2 O '60.

1. Budapesti Orvostudomanyi Egyetem, II. sz. Belklinika.
(HYPERTENSION, ther.)
(RESERPINE pharmacol.)
(KIDNEY physiol.)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

KALDOR, Antal; SZABO, Zoltan

Studies on hypoglycemic effects of vincamin. Kiserletes Orvostud. 12 no.6:627-629 D '60.

1. Budapesti Orvostudomanyi Egyetem II. sz. Belklinikaja.
(BLOOD SUGAR pharmacol)
(ALKALOIDS pharmacol)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

GABOR, Gyorgy, dr.; SZABO, Zoltan, dr.; ERDELYI, Gabor, dr.; JUHASZ, Istvan, dr.

Modifications in the serum-glutamic-oxalic transaminase level in various experimental conditions. Magy belorv. arch. 14 no.3:103-107 Jl '61.

1. A Budapesti Orvostudomanyi Egyetem II sz. Belklinikajanak kozlemenye (Igazgato: Dr. Gomori Pal egyetemi tanar)

(TRANSAMINASES blood)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

PUSHKASH, Yerne [Puskas, Erno]; SABO, Zoltan [Szabo, Zoltan]

Examination of the fundus oculi in newborn infants. Akush. i gin. 38 no.5:76-79 S-O '62. (MIRA 17:11)

1. Iz 2-y akushersko-ginekologicheskoy kliniki (dir. - prof. Imre Zoltan) i 1-y glaznoy kliniki (dir. - prof. Magda Radnot) Budapeshtskogo meditsinskogo universiteta.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Z.; NAGY, Z.

Alterations in renal haemodynamics and urine flow in the dog after administration of vincamine. I. Cor vasa 5 no.2:128-133 '63.

1. Second Department of Medicine, University Medical School, Budapest.
(KIDNEY) (ALKALOIDS) (ANTIHYPERTENSIVE AGENTS)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

NAGY, Z.; KISS, E.; SZABO, Z.

Alterations of renal haemodynamics and urine flow in the dog after administration of vincamine. II. Cor vasa 5 no.2:134-144 '63.

1. Second Department of Internal Medicine, University Medical School, Budapest.

(ALKALOIDS) (ANTIHYPERTENSIVE AGENTS)
(KIDNEY)

Budapest, Kisérletes Orvostudomány, vol XV, no 5, Oct 63, pages 492-496.

Abstract: [Authors' German summary] Dogs anesthetized with Chloralose have been given 0.25 mg/kg Nepresol (1,4-hydrazinophthalazine) intravenously, by the authors. The effective renal blood flow (based on the PAH clearance) the kidney blood flow (kidney vein catheter, direct measurement), the diuresis were measured and the PAH extraction, as well as the renal and the total arterio-venous O_2 ($A-V_{O2}$) difference determined. It has been found that during a drop in the arterial blood pressure, there is a time interval during which the blood flow of the kidneys remains unchanged or increases and the effective renal plasma flow, the PAH extraction and the renal $A-V_{O2}$ decrease significantly. These changes indicate that a certain amount of blood passing through the kidneys flows through shunts. 3 Hungarian, 7 Western references.

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POLYAK, Janos; SZABO, Zoltan, dr.; BESENYEI, Miklos

Forum of the workers of Hungary; questions to be dicussed at the 20th Congress of the Hungarian Trade Unions. Munka 13 no.4:1-4 Ap '63.

1. Vas- es Femipari Dolgozok Szakszervezetenek fotitkara (for Polyak). 2. Orvos-Egeszsegugyi Dolgozok Szakszervezete fotitkara (for Szabo). 3. Postasok Szakszervezetenek fotitkara (for Besenyei).

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Analysis of Balaton water. Z. Szabó. *Magyar Biol. Kut. Int. Munkái* 3, 488-97 (1930).—Twelve analyses of different points of Lake Balaton are published. The range of data is in equiv. %: K 0.43-2.13, Na 19.46-30.10, Al 0.83-1.46, Fe 0.01, Ca 20.26-31.22, Mg 31.30-56.25, Cl^- 3.90-5.12, SO_4^{--} 13.75-17.40, HCO_3^- 71.00-83.05, SiO_2 5.21-7.68%. The O content of the surface water averaged 8.29-9.36 mg. per l.

S. S. de Finály

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7

Recovery of iodine from residues. ISTVÁN NÁRAY-SZABÓ AND ZOLTAN SZABÓ *Magyar Chem. Folyóirat* **38**, 95-8(1932). The residues are treated with 5 cc. satd $NaNO_2$ soln. and 5 cc. concd. H_2SO_4 per l. and the pptd. I is shaken out with 100 cc. CCl_4. The I is dissolved with 10% NaOH and the CCl_4 again used for extn. The I is freed from the NaOH soln. by acid and purified by sublimation. If KI is wanted, KOH is used for extn. and the satd. soln. treated with H_2O_2 to oxidize hypoiodite to iodate and this is converted to iodide. S. S. DE FINALY

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PROCESSES AND PROPERTIES INDEX

Anodic behavior of copper in sodium chloride, potassium chloride, calcium chloride and hydrochloric acid solutions. ZOLTAN SZABÓ *Magyar Chemiai Folyóirat* 39, 1-10 (1933).—In an air-tight app. Cu was electrolytically dissolved in a H atm. in 1.0 *M* solns. of NaCl, KCl, $CaCl_2$ or HCl. Cu thus dissolved forms a complex anion. The potential of the Cu electrode depends on the Cu concn. and the Cl-ion concn. of the soln. From these data the complex anion should be $CuCl_4^{--}$. The law of Lewis was found correct; the activity coeff. of the complex anion is independent of the concn. of complex ion and depends only on the total ion concn. The activity coeff. is calcd. from the formula of Debye-Hückel. The coull. const. is 0.145×10^{-6}. S. S. DE FINÁLY

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES

Diffusion potential and activity coefficient of ions. Zoltán Szabó. *Magyar Chem. Folyóirat* **39**, 145-53 (1933).—A graphic method is published by which the potential of electrolytes at the liquid boundary can be calcd. from the av. activity coeffs. Also the difference between av. and individual activity coeffs. can be calcd. by graphic extrapolation. This latter value is, *e. g.*, for H-ion activity 0.5% lower in 0.1 *M* HCl soln.

S. S. de Finály

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PROCESSES AND PROPERTIES INDEX

Co

2

The transference number of hydrochloric acid ions. Zoltán Szabó. *Magyar Chemiai Folyóirat* 41, 52-5 (1935).—Transference nos. of 0.0119–6.310 *M* HCl solns. were measured by means of galvanic chains: t_{anion} = 0.159–17[illegible], t_{cation} = 0.821–839, T_{+++} = 0.997–1.002.
S. S. de Finály

COMMON ELEMENTS

COMMON VARIABLES INDEX

MATERIALS INDEX

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1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

ionic activity of potassium chloride and sodium chloride. Zoltán Szabó. *Magyar Chem. Folyóirat* 42, 16-24 (1936).—The formula for diffusion potential proposed by Hermans with estn. of effects of interionic forces gave for concns. of 0.0005—0.02 *M* HCl the same values as the equation worked out empirically. For KCl up to a *M* soln. the diffusion potential is a linear function of the log of the concn., the equation being $\epsilon = 1.04\log(m_1/m_2)$. The ion activities were found to be equal even in more concd. solns., the difference being about 0.5% in case of a 4.0 *M* soln. The same relation could be proved for NaCl, the equation then being $\epsilon = 12.31\log(m_1/m_2)$ up to 0.5 *M*. S. S. de Finály

COMMON ELEMENTS

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BC

A-1

Entropy of electrolyte solutions. Z. Szabó (Magyar Chem. Fol., 1936, 42, 49—54; Chem. Zentr., 1937, I, 1646—1647).—The entropy of an electrolyte solution of concn. Σm_i is given by $S = \Sigma m_i(C_{pi} \log T - R \log a_i + k_i)$, in which C_{pi} is the partial mol. heat and a_i the activity, taken as unity for the pure substance. The const. k_i depends on the units and the nature of the substance. The calc. S changes on dilution of HCl solutions are in accord with experimental data. A. J. E. W.

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CA

Some remarks on the decomposition of ozone catalyzed by chlorine Zoltán G. Szabó (Univ. Szeged, Hung.). *Acta Univ. Szegediensis, Acta Chem. et Phys.* 3, 20-4(1950)(in English).—The relation between ClO and ClO_2 is considered, and the replacing of ClO_2 by ClO in reaction schemes is discussed. The decompn. of O_3 under the same conditions, as stated by Bodenstein, *et al.* (*C.A.* 24, 5581), can be described by the following mechanism: (1) $Cl_2 + O_3 = ClO + ClO_2$, (2) $ClO_2 + O_3 = ClO + 2O_2$, (3) $ClO + O_3 = ClO + O_2$, (4) $ClO + ClO = Cl_2 + O_2$, (5) $Cl + O_3 = ClO + O_2$, and (6) $Cl + ClO_2 = 2ClO = Cl_2 + O_2$. Reaction (5) plays only an insignificant role in the conversion, and after certain simplification the following equation was evolved for the reaction rate: $-d[O_3]/dt = [2k_6(2k_1)^{1/2}[Cl]^{1/2}[O_3]^{3/2}]/[1 + (k_6/k_3)K^{1/2}[Cl]^{1/2}/[O_3]]$. Recalcg. the data of Hamann and Schumacher (*C.A.* 26, 4231) on the basis of this equation, consts. independent of Cl concn. are obtained without dropping their value during the expt. For $(k_6/k_3)/K^{1/2} = a$ values of 2-5 were obtained independently of the temp.; the ratio of the consts. was highest at 35°. The ratio of the constants of the inhibitory and competing reactions was independent of the temp. 9 references.

István Finály

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CA

2

The scientific activity of N. Semenoff. Zoltán G. Szabó (Univ., Szeged, Hung.). *Magyar Kém. Lapja* 5, 338-40 (1950). The work on chain reactions is summarized.

I. Finály

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1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

Magyar Kemiai Folyoirat
Hungarina Jo rnal of Chemistry
vol. 46 1950
no. 11 no ember

I. Szabó
and I. Hartha
On the mechanism of the redu... of nitrates by means of ferrous hydroxide catalysed by silver 389 391

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C. A.

7

Determination of nitrate. Zoltán Szabó and Lajos Bartha (Univ. Szeged, Hung.). *Magyar Kém. Folyóirat* 56, 81-3(1950).—Dil. the soln. to be analyzed with water to 80 ml. Add 10 ml. 30% NaOH, boil for 5-6 min. to remove O_2, add slowly 10 ml. $[Ag(NH_3)_2]_2SO_4$ soln. (prepd. from satd. Ag_2SO_4 soln.) and 10 ml. 19% $Fe(NH_4)(SO_4)_2$ soln. Boil until red litmus paper remains unchanged in the vapors, add cautiously 40 ml. 30% H_2SO_4, boil until the liquid clarifies, cool, and titrate the excess Fe^{++} with 0.1 N $KMnO_4$. Run a blank on an equal amt. of distd. water. The presence of Cl^- and Br^- does not disturb the titration. Pt(II), Hg(II), Bi(III), Sb(III), Sb(V), and Cr(III) must be removed with $BaCl_2$ and Ag_2SO_4. Eight mols. of $Fe(OH)_2$ are needed to reduce 1 mol. nitrate. István Finály

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C. 4.

24

The decomposition of chlorine monoxide, a characteristic explosion process. Zoltán G. Szabó (Univ., Szeged, Hung.) *Magyar Kém. Folyóirat* 56, 109-11 (1950).—Data of expts. on the homogeneous thermic decompn. are summarized. The decompn. of chlorine monoxide as a chem. reaction seems to begin with an induction period which shows an inverse correlation to the beginning concn. The beginning velocity depends on the purity of the materials, on the dimensions of the containers, and on the temp. When the latter is increased, the velocity also rises with an explosion occurring above 120°. A series of chem. equations was worked out to explain the mechanism where alternately Cl and ClO are the chain carriers. The theoretical discussion of the scheme of non stathonary reactions led to a velocity formula by means of which the approx. curve velocity/time could be calcd. for the case of decompn. of Cl_2O.

I. Finály

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C. A.

Iodometric determination of the bromine ion. Zoltán G. Szabó and László Csányi (Univ. Szeged, Hung.). *Magyar Kém. Folyóirat* 56, 112-14(1950).—The presence of Pb, Fe, As, Sb, Co, Ni, Mn, Cr, V, ferrocyanide, and ferricyanide causes pos. error but Cu, Fe, Hg, Mo, OH^-, OCl^-, $S_2O_3^{2-}$, S^{2-}, SO_3^{2-}, SCN^-, oxalate, and tartrate act negatively. Treatment with Na_2CO_3 removes most disturbing ions except Pb, As, and Mo. Another method is to treat with $KMnO_4$ and distil off Br into dil. alkali hydroxide. Add 1 g. $KHCO_3$ to the soln., neutralize with dil. KOH, add excess Cl, evap. to 5-10 ml., add 50-60 ml. of water, remove excess Cl with 10 ml. of 5% phenol soln., add KI, and titrate the liberated I with $Na_2S_2O_3$. I. Finály

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7

Determination of sulfur in organic compounds. Zoltan G. Szabó and Sandor Ozsvár (Univ. Szeged, Hung.). *Magyar Kém. Folyóirat* 56, 173-4(1950). Oxidize the sample with 2 g. $KClO_3$ and 20 ml. concd. HNO_3 in a 110-ml. Erlenmeyer flask, applying a special glass funnel to stop spraying and to secure a permanent Cl atm. in the flask. The sulfate formed is detd. gravimetrically by the Winkler method as $BaSO_4$. This method is suitable for analyzing aromatic sulfonic acids, their derivs., sulfonated azo dyes, compds. with bivalent S where S is not linked to the aliphatic radical, aromatic sulfides, aromatic sulfones, and thio ethers. Istvan Finaly

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2

The examination of a system carbon and hydrogen in the temperature range 1100-2000°. Zoltán Szabó (Univ., Szeged, Hung.). *J. Am. Chem. Soc.* 72, 3497-3500 (1950).—The reaction of C and H_2 was investigated between 1100 and 2000°. The concn. of CH_4 as a function of temps. shows a min. at 1450° and a max. at 2000°. C_2H_2 and C_2H_4 are also obtained above 2000°. The results indicate that above 1450° some lower hydride, probably CH_3 or CH_2, is present at higher concn. on the surface of hot C rod than in CH_4. Harry H. Sisler

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A

7

Titrimetric determination of nitrates. Zoltán G. Szabó and Lajos Bartha (Univ., Szeged, Hung.). *Nature* **166**, 300(1950).—Fe^{2+} salts in an acid soln. reduce NO_3^- to NO but in an alk. soln. NH_3 is formed. Cotte and Kahane (*C.A.* **41**, 5051*h*) found that Ag_2SO_4 catalyzes the last reaction. The NH_3 evolved can be caught in a measured vol. of standard acid and the excess titrated with standard NaOH soln. In the proposed method, the reduction is accomplished in boiling 3% NaOH soln. to which ammoniacal Ag_2SO_4 has been added, by $Fe(OH)_2$ formed from a measured vol. of standard $Fe(NH_4)_2(SO_4)_2$ soln. When the reduction of nitrate is complete, H_2SO_4 is added and excess Fe^{2+} is titrated with $KMnO_4$. The reaction is $NO_3^- + 8Fe^{++} + 15OH^- + 6H_2O = NH_3 + 8Fe(OH)_3$. Because there is some atm. oxidation of the Fe^{2+} it is necessary to apply a correction. M. M.

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7

Catalysis in analytical chemistry. I. Silver catalysts in the reduction of nitrates by ferrous hydroxide. Zoltán G. Szabó and Lajos Bartha (Univ. Szeged, Hung.). *Acta Chim. Hung.* 1, 116-23(1951)(in German); cf. *C.A.* 44, 10605b.—A soln. contg. 2-20 mg. in nitrate is dild. with 10 ml. 30% NaOH and water to 90 ml., boiled 5-6 min. to remove absorbed oxygen, and 10 ml. Ag diammine sulfate soln. and 10 ml. 19% $Fe(NH_4)_2(SO_4)_2$ soln. are added. The reduction is complete in 5-15 min., then 40 ml. 30% H_2SO_4 is added to dissolve the black ferrous ferric hydroxide formed. The mixt. is cooled and unoxidized Fe(II) ions are titrated with 0.1 *N* KMnO. A blank test is made similarly, and the difference shows the amount of ferrous salt required for the reduction of nitrate. The reduction process takes place in 2 steps. First nitrates react with $Fe(OH)_2$ to form $Fe(OH)_3$ and nitrite, and as a 2nd step the nitrite and $Fe(OH)_2$ react to give $Fe(OH)_3$, NH_3, and alkali hydroxide. The 2nd reaction is rapid, whereas the 1st step is rather slow. The 1st reaction is accelerated by Ag catalysts. The catalytic effect of Ag is not influenced by the presence of Cd^{2+}, As^{3+}, Sn^{2+}, Sn^{4+}, Al^{3+}, Co^{2+}, Ni^{2+}, Mn^{2+}, Zn^{2+}, Mg^{2+}, U^{4+}, V^{5+}, W^{6+}, Mo^{6+}, Cl^-, Br^-, ClO^-, BrO^-, ClO_3^-, BrO_3^-, CO_3^{2-}, SO_3^{2-}, BO_3^-, F^-, CH_3COO^-, $S_2O_3^{2-}$, ClO_4^-, or PO_4^{3-}. When, however, Pb^{2+}, Hg_2^{2+}, Hg^{2+}, Bi^{3+}, Sb^{3+}, Sb^{5+}, Cr^{3+}, CN^-, SCN^-, $Fe(CN)_6^{4-}$, $Fe(CN)_6^{3-}$, or CrO_4^{2-} are present, colloidal $Fe(OH)_3$ is formed and acts as a catalyst poison because of the formation of Ag ferrite. In the presence of I^-, IO^-, or IO_3^- AgI forms, and in the presence of S^{2-} and $S_2O_3^{2-}$ Ag_2S forms, both of which adsorb Ag ions and reduce the catalytic activity. The mechanism of the catalysis is the formation of metallic Ag pptg. from homogeneous soln. in a colloidal form and reacting with the nitrate instantaneously. The Ag sol has, however, no catalytic activity above a certain particle size.

István Finály

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SZABO, Z. 1951

(Chem. Inst. U. of Szeged)

"A Model Experiment for Elucidation of the Gastric Secretion of HCI."

Acta Physiol (Budapest), 1951, 2/1 suppl (3738)
No abst. in Exc. Med.

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CA

A new titrimetric method for the determination of nitrate
on. Zoltan G. Szabó and Lajos Bartha (Univ. Szeged, Hung.). *Anal. Chim. Acta* 5, 33-45(1951)(in English).—Nitrate can be reduced quantitatively by $Fe(OH)_2$ at an NaOH concn. of 3%, in the presence of Ag diammine sulfate as catalyst. In the detn., the reduced soln. is acidified and the excess Fe^{++} is back-titrated with $KMnO_4$ soln. The most common ions accompanying nitrate do not interfere, while the few interfering ones can easily be made non-interfering. Landon A. Sarver

1951

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7

Volumetric determination of very small quantities of nitrate. Zoltán G. Szabó and Lajos Bartha (Univ. Szeged, Hung.). *Mikrochemie ver. Mikrochim. Acta* **38**, 413-18 (1951); cf. *C.A.* **45**, 10123*c*.—In a slightly basic soln. with Ag^+ as catalyzer, NO_3^- is reduced to NH_3 by $Fe(OH)_3$. After the reduction the excess Fe^{++} is titrated with 0.01 *N* $K_2Cr_2O_7$ after treatment with acid. Cf. *C.A.* **46**, 857*a*.

W. T. Hall

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X SZABO Z.

5. New method for the alkalimetric determination of aluminum--Uj Modszer az aluminium alkalimetrias meghatarozasara--by M. Beck and Z. Szabo. (Hungarian Journal of Chemistry--Magyar Kemiai Folyoirat--Vol. 57, No. 5, pp. 143--145, May 1951, 3 tabs.)

Various researchers have often advanced very contradictory prescriptions for the alkalimetric determination of aluminium. A critical analysis of the methods proposed thus far has led to the elaboration of a new process in which the titration for the determination of the aluminium ions is effected in an alkaline medium and two measurements are executed. One aliquot portion of the aluminate stock solution is titrated with 0.1 n hydrochloric acid until the aluminium hydroxide is completely precipitated. This is registered by the colour change of the neutral red indicator. Another part of the stock solution is treated with an alkaline fluoride solution and titrated to the same pH. By multiplying the difference between the two titrations with 0.899 the aluminium ion content of the solution is obtained in mg. With the exception of silicon ions, no other ions generally accompanying the aluminium have a disturbing effect on determination. Therefore, it is advisable to perform the titration in paraffin treated flasks and to store the required reagents in paraffin lined containers.

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SZABO, Z.

Hungarian Technical Abst.
Vol. 5 No. 2
1953

541.127

2. **Investigation of complex processes** — *Komplex folyamatok vizsgálata* — Z. Szabó (Proceedings of the Chemical Science Department of the Hungarian Academy of Sciences — *A Magyar Tudományos Akadémia Kémiai Osztályának Közleményei* — Vol. 1, No. 1, 1952, pp. 11—21.)

Calculation of the *velocity-time* or of the *velocity-concentration* function may be effected theoretically by means of a general reaction schedule drawn up for homogeneous complex processes. Relations between velocity constants pertaining to the various main steps of the schedule lead to diverse differential equations. The application of the above considerations to the decomposition of chlorine oxide as a model process yields identical results with those obtained through experiments. *I. Fonáy*

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7

Iodometric determination of the bromide ion. Zoltán G. Szabó and Laszlo Csányi (Univ. Szeged, Hung.). *Anal. Chim. Acta* 6, 208–16(1952)(in English).—The oxidation of Br^- effected by Cl occurs in 2 steps: (1) at pH 6.5–7.5 the Br^+-OH^- electromer HBrO forms; (2) this leads on further oxidation to BrCl, which gives bromate by hydrolysis. At pH 8.5–9.0 the hydrolysis occurs at such a rate that it can be used for analytical purposes. Detns. of 0.1–25.0 mg. of Br^- can be carried out rapidly and accurately. Besides oxidizing substances, only Fe, Cu, Hg, and Mo interfere; these can be eliminated by treatment with Na_2CO_3 and H_2S or by the distn. of Br. Landon A. Sarver

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7

Stannometry. Volumetry determination of iron (III), vanadate, dichromate, iodate, bromate, ferricyanide ions, and iodine. Zoltán [illegible] and Edith Sugár (Univ. Szeged, Hung.). *Anal. Chim. Acta* 6, 303-315(1952)(in English).—A generally applicable reductive method is elaborated by means of which numerous substances can be detd. having oxidation potentials exceeding 0.3 v. A 0.1 *N* $SnCl_2$ soln. is used. The procedure has been employed for detg. Fe^{3+}, Fe^{2+}, $Cr_2O_7^{2-}$, VO_3^-, BrO_3^-, IO_3^-, $Fe(CN)_6^{3-}$, and I.

Landon A. Sarver

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7

Alkalimetric determination of aluminum. Michael Beck and Zoltán G. Szabó (Univ. Szeged, Hung.). *Anal. Chim. Acta* 6, 316-21(1952)(in English).—In detg. Al^{3+}, the titration is carried out from the alk. side and 2 measurements are performed. An aliquot of the aluminate stock soln. is titrated with 0.1 *N* HCl to complete pptn. of $Al(OH)_3$, as indicated by the color change of neutral red. Another aliquot of the stock soln. is mixed with alkali fluoride and titrated to the same pH. The difference of the 2 titrations, multiplied by 0.899, gives the mg. of Al^{3+}. L. A. S.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Z.

(3)

Hungarian Technical Abst.
Vol. 5 No. 4 1953

7. Approximative solution of differential equations describing complex chemical processes — *Összetett kémiai folyamatok differenciálegyenleteinek közelítő megoldása* — Z. Szabó, P. Huhn and A. Bergh. (Hungarian Journal of Chemistry — *Magyar Kémiai Folyóirat* — Vol. 58, 1952, No. 12, pp. 370—379, 9 figs.)

The reaction kinetics of complex chemical reactions were investigated. Instead of simultaneously considering all the chemical processes, only the steps determining the rate of the elementary reactions involved — starting, propagating, branching and rupturing reactions — were taken into account ("four-stage mechanism"). By this method the process may be characterized by two differential equations: one relating to the conversion of the starting material and the other determining the rate of the change in the concentration of the active centres. If the rate constants of the elementary reactions are known, the explicit solution of the differential equations is possible by approximative numerical integration e. g. by the *Euler-Cauchy* polygon method. If these constants are unknown, it is possible to find through trials a quartet of values by which the solution of the differential equations corresponds with the experimental data. *D. Varsányi*

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7

Catalytic studies in analytical chemistry. II. Iodometric determination of the persulfate anion with the help of mixed catalysers. Z. G. Szabó, L. Cséányi, and Helene Galibra (Univ. Szeged, Hung.). *Z. anal. Chem.* 135, 269-75(1952); cf. *C.A.* 45, 10123c.—As catalyst dissolve 1.245 g. of Mohr's salt and 4.91 g. of $CuSO_4$ in 250 ml. of water. Transfer 1.0 ml. of the catalyst to a 200-ml. flask and add a few pieces of crushed marble, 15 ml. of 2.8 *N* HCl and 1.5 g. KI. Add the persulfate soln. (7-270 mg. of $K_2S_2O_8$), mix, and titrate the liberated I with $Na_2S_2O_3$. Run a blank with the catalyst soln., acid, and KI to find how much I is liberated by the added Cu^{++}. The results of 10 titrations agreed within 0.1% av.

W. T. Hall

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SZABÓ, ZOLTÁN G. Hungarian CA: 47:10978

(Univ. Szeged, Hung.)

"Stabilization of free radicals -- its importance in reaction kinetics."

Nature 170, 246-7 (1952)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, ZOLTAN G. Hungary CA: 47:11914

Univ. Szeged

"Stabilization of free radicals; its importance in reaction kinetics."

Acta Chim. Acad. Sci. Hung. 3, 139-56 (1953) (in English); cf. C.A. 45, 2351h; 47, 10978c.

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SZABO Z.

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6. On the melting points of transition metals — *Az átmeneti fémek olvadáspontjairól* — Z. Szabó. (Proceedings of the Chemical Science Class of the Hungarian Academy of Sciences — *A Magyar Tudományos Akadémia Kémiai Tudományok Osztályának Közleményei* — Vol. 3, 1953, No. 1, pp. 153–159, 2 figs.)

The melting points of the transition metals (where the *d* orbital completes itself) are represented by curves with two maxima within each period. The equation is linear within a column if the quantum number is chosen as the independent variable. If the tangentials of these column equations are plotted against the number of unpaired *d* electrons, a bell-shaped curve results. It is shown for the first time in literature through these correlations that even the macroscopic physical properties are strictly periodic functions depending on the finer distribution of the electrons. Consequently it is possible to make deductions based on the melting points — i. e. on macroscopically determined physical properties — concerning the finer structure of the electrons. Since the melting points depend on the metallic bonding energies as well, the mentioned correlations show that the binding energies of the metallic bonds are functions of the number of unpaired electrons.

I. F.

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1

[illegible] determination of the nitrate ion

[illegible] G. Partha and J. Ember.

[illegible] Academiae Scientiarum Hungaricae

[illegible] 231 – 236]

The method [illegible] determining the nitrate ion [illegible] based on [illegible] ferrous ha lide and the [illegible] of [illegible]

[illegible] end point [illegible] applying a two-color indication. The modification increased the speed and accuracy of the method.

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SZABO, ZOLTAN, G.

3

The status of researches in the field of reaction kinetics in the world and in Hungary. Zoltán G. Szabó. *Magyar Tudomanyos Akad. Kém. Tudomanyok Osztályának Közleményei* 3, 487-500(1953).—Current work in Hungary centers on (1) the theoretical study of mechanisms and (2) optimum conditions for industrial development. Under (1) are included the investigation of the morphology of Pd catalysts, gel catalysts, aging of gels and sols, adsorption catalysis, catalytic decompn. of EtOH, effect of carriers in autoxidation, study of ion-exchange resins, calcn. of reaction activation entropies, investigation of the mechanism of partial oxidation of methane for acetylene production from natural gas, the role of O in stabilizing free radicals of Cl-O compds., the study of the formation and branching of reaction chains, the noncatalytic burning of hydrocarbons, and catalysis in halogenation reactions. The practical part of the work is coördinated with the current aims of the national economic development. Francois Kertesz

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SZABO, Z

"High-temperature steam heating with diphenyl mixture." p. 166. (Magyar Kemikusok Lapja, Vol. 8, no. 6, June 1953, Budapest)
"Mercurialism causes mental troubles." p. 171. (Magyar Kemikusok Lapja, Vol. 8, no. 6, June 1953, Budapest)

SO: Monthly List of East European Accessions, Vol 3 No 2 Library of Congress Feb 54 Uncl

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SZABO, Z.

Hungarian Technical Abst.
Vol. 6 No. 1
1954

8-31-54

(1) Chem 4

546.175.001 : 543.22

8. The stannometric determination of nitrates — *A nitrátok sztannometrás meghatározása* — Z. Szabó and I. Simon Fiala. (Hungarian Journal of Chemistry — *Magyar Kémiai Folyóirat* — Vol. 59, 1953, No. 2, pp. 42—44, 1 fig., 3 tab.)

The quantity of nitrates present when reducing them with hydroxide could be computed by the volumetric determination of the formed ferric ions. At first the solution to be tested was boiled with sodium hydroxide and then with silver diamine sulfate and ferrous ammonium sulfate in order to reduce the nitrates. Ammonium chloride and hydrochloric acid were added to the mixture and the ferric ions were titrated while hot with an 0.1 *n* stannous chloride solution. The end point of titration was established either by a potentiometric method or by the use of indicators. The former method yielded better results. If indicators were used for the end point determination the titration was at first carried out in the presence of potassium thiocyanate until a yellow colour appeared, and then continued after the addition of dibasic sodium phosphate in the presence of ammonium molybdate until a light blue colour was reached. Error lies within 1 per cent if the nitrate content of the solution is between 1 to 20 mg. The advantages of the method are rapidity and relatively small error.

D. V.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Z.

8. Determination of the solubility product of metal hydroxides, I. The reaction of aluminium and hydroxyl ions — *A fémhidroxid csapadékok oldékonysági szorzatának meghatározása, I. Alumínium- és hidroxil-ionok reakciójáról* — Z. Szabó, L. Csányi and M. Kávai. (Hungarian Journal of Chemistry — *Magyar Kémiai Folyóirat* — Vol. 59, 1953, No. 10, pp. 310—317, 3 figs., 5 tabs.)

On titrating a metal salt solution potentiometrically with the aid of an antimony electrode and with alkali hydroxide, then by controlling the beginning of the precipitation of hydroxide, useful data can be obtained for calculating the solubility product of metal hydroxides. The evaluation of the experimental results proved that the graphic extrapolation method is not precise. Instead of this method the authors suggest that the determination of the maximum point of the first difference quotient be used on the basis of theoretical considerations. In applying the advocated method to aluminium hydroxide the following values can be established:

$L_{Al(OH)_3}$ at 20° C: $1.25 \cdot 10^{-33}$; at 30° C: $1.92 \cdot 10^{-33}$

$L_{[AlO_2^-][H^+]}$ at 20° C: $1.80 \cdot 10^{-18}$; at 30° C: $1.34 \cdot 10^{-18}$.

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Szabó, Z. G.

2

New form of the periodic table and new periodic functions.

Z. G. Szabó and B. Lakatos. *Acta Chim. Acad. Sci. Hung.* 4 [illegible]

[illegible] The present [illegible]

[illegible]

[illegible] properties as functions of the line distribution of the electrons instead of the atomic numbers. Melting point, boiling point, and heat of sublimation are [illegible] figures. 31 references.

M. Ha.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Z. G.

309. **Studies on the reaction aluminium - morin. I. A new method for the colorimetric determination of aluminium ions.** Z. G. Szabó and M. T. Beck (*Acta Chim. Acad. Sci. Hung.*, 1954, 4 [2–4], 211–222).—The fluorescence and absorption spectra of the Al - morin complex have been established, and the effects of different factors (temp., alcohol, etc.) on the extinction values, fluorescence and turbidity have been examined. Colorimetric determination in a medium of 96 per cent. ethanol can be carried out easily and accurately. The ratio of Al to morin in the complex is 1 to 1 and not 1 to 3 as assumed by Schantl (*Mikrochem.*, 1924, 2, 174). The substance to be analysed is dissolved in ethanol and, after separation by chromatography, is eluted with ethanol; the eluate is transferred to a 25-ml calibrated flask, 5 ml of 3×10^{-4} *M* per litre soln. of morin in ethanol is added, and the vol. is made up to 25 ml with ethanol. The colour is measured in a colorimeter, a S 42 filter being used, with a 6×10^{-5} *M* soln. of morin in ethanol to compensate for the colour of the reagent. N. E.

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SZABO, ZOLTAN

The mechanism of the ozone decomposition catalyzed by chlorine. Péter Huhn, Ferenc Jordán, and Zoltán Szabó (Univ. Szeged, Hung.). *Magyar Tudományos Akad. Kém. Osztályának Közleményei* 5, 409-18(1954).—The 4-stage mechanism, which was successfully applied to the thermal decompn. of Cl_2O (*C.A.* 47, 5225*c*) and to the photochem. reaction of CO, Cl, and O (*C.A.* 50, 65*h*), was valid also for the analysis of stationary, nonbranching reactions, such as the Cl-catalyzed decompn. of O_3. The following scheme (*C.A.* 45, 8386*g*) was used as the basis of calcn.: $Cl_2 + O_3 \rightarrow Cl + ClO + O_2$ (k_1); $Cl + O_3 \rightarrow ClO + O_2$; $ClO + O_3 \rightarrow Cl + 2O_2$ (k_2); $ClO + ClO \rightarrow Cl_2 + O_2$; $Cl + Cl + M \rightarrow Cl_2 + M$ (k'_4), where the k values are the consts. of velocity of the elementary reactions and M a partner in the triple collision. M may be O, affecting the quantum yield of the reaction, but to a lesser degree than Cl. The proposed scheme of stabilization of radicals is more generalized than the principle suggested by Bodenstein, *et al.* (*C.A.* 24, 5581). The role of ClO_3 in the mechanism of the stabilization may be due to 2 nearly thermoneutral reactions: $ClO + O_2 \rightleftharpoons ClO_3$ ($\Delta H = +0.7$ kcal.) and $ClO_3 + ClO_3 \rightleftharpoons Cl_2O_6$ ($\Delta H = -1.5$ cal.). F. K.

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SZABO, Z.

Magyar Kemikusok Lapja - Vol. 10, no. 3, Mar. 1955.

Nalbandian and Voevodskii's Mechanism of the Oxidation and Combustion of Hydrogen; a book review. p. 92.

SO: Monthly list of East European Accessions, (EEAL), LC, Vol. 4, No. 9, Sept. 1955
Uncl.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Z. G. Hungary

Annual meeting of the Chemical Society in the German Democratic Republic from 19-22 October 1955.

"Mechanismus der homogenen Kettenkatalyse und Inhibition"

SO: Chemische Technik, Feb 1956, Unclassified.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Z.

Kinetics of the decomposition of ammonia on a quartz surface. p. 313.

MAGYAR TUDOMANYOS AKADEMIA VOL. 7, no. 3/4, 1955

Budapest, Hungary

so. EAST EUROPEAN ACCESSIONS LIST VOL. 5, No. 7, July 1956

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Z.

"Noncatalytic" oxidation of ammonia. P. 325 MAGYAR TUDOMANYOS AKEDEMIA Budapest, Hungary Vol. 7, no. 3/4, 1955

SOURCE: EEAL LC Vol. 5, no. 7, July 1956

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Z.

Research on the kinetics of the ozidation of hydrocarbons. I. General remarks; experimental methods. II. Noncatalytic oxidation of ethane III. Effect of water and iodine on the oxidation of ethane. IV. Effect of methylamine and nitrogen dioxide on the oxidation of ethylene. VI. Effect of homogeneous catalyzers on the oxidation of ethylene. V. Noncatalytic oxidation of ethylene. VII. Oxidation of acetylene and the effect of homogeneous catalyzers on the oxidation. P. 379.

MAGYAR TUDOMANYOS AKADEMIA VOL. 7 no. 3/4 1955

Budapest, Hungary

So. EAST EUROPEAN ACCESSIONS LIST VOL. 5, no. 7, July 1956.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Z

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62. **Extraction of iodine from domestic natural waters.** Z. Szabó, M. Beck. *Magyar Kémikusok Lapja*. Vol. 10, 1955, No. 10, pp. 317--318

Several methods were examined from the technological and economical points of view for the extraction of iodine in extremely low concentrations from domestic natural waters. Based on these investigations the following procedure was found the most satisfactory: after establishing the iodine content of the water to be processed freshly prepared mercurous chloride was added in amounts approximately 25% in excess, at the original pH of the water. The following precipitate exchange reaction took place: $Hg_2Cl_2 + 2J^- = Hg_2J_2 + 2Cl^-$. The mercurous iodide produced by this reaction was treated after settling and filtration with hydrogen sulphide in order to liberate the halogen acid, $Hg_2X_2 + H_2S = Hg + HgS + 2HX$ (X = halogen). By using the appropriate quantities of mercurous chloride enrichment is not confined to iodine alone but may extend to bromine as well and after the hydrogen sulphide treatment all three halogen acids may be produced in predetermined concentrations. The halogens may be separated from this mixture of halogen acids by selective oxidation procedures. The metallic mercury and mercuric sulphide produced during the hydrogen sulphide treatment were dissolved in nitric acid and the mercurous nitrate thus obtained was converted to supply fresh mercurous chloride for the process. For the removal of the mercury contained in the effluents an alkaline sulphide treatment followed by filtration through a sand layer is recommended.

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SZABO, ZOLTAN G.

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Processing of natural gas. Zoltán G. Szabó. *Magyar Kém. Lapja* 10, 335-40(1955). — Natural gas is thermally decompd. at over 1200°, at which temp. the free energy of C_2H_2 is less than that of CH_4, so that the former develops. The reaction product is cooled rapidly to avoid decompn. of C_2H_2. It contains C_2H_2, CO, and H in oil form. Concg. is done by adsorption or solvents. Arval

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABÓ, Z. G.

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CH

Four-step mechanisms; the solution of the kinetics of complex reactions. Zoltán G. Stabó (Univ. Szeged, Hung.). *Z. Elektrochem.* 59, ~~1033-9(1955).~~ By classification of the elementary reactions and a broadening of the concept of rate-detg. processes it is possible to simplify the set of differential equations describing the kinetics of any complex set of reactions sufficiently for a solution always to be obtained by numerical integration. H. H. Jaffé

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Z.

33. The mechanism of homogeneous chain catalysis and inhibition — Z. Szabó, P. Huhn, A. Bergh. (*Magyar Kémiai Folyóirat* — Vol. 61, 1955, No. 5, pp. 137—145, 7 figs., 2 tabs.)

CH

The uniform and general mechanism of homogeneous catalysis may be interpreted by the principles of free radical stabilization. It is known that a substance will have opposite effects on the same radicals depending entirely on the relative concentrations of the reactants, subject to the interaction occurring between the stabilized radicals and the starting material or between the stabilized radicals and the unstabilized radicals. Difficulties encountered in the mathematical formulation of this extremely complex process were solved successfully by employing the principles of the "four-stage mechanism" developed by the authors. To test the validity of the equations obtained by theoretical derivation the nitrous oxide-catalyzed or inhibited decomposition of propyl aldehyde was studied as a function of the nitrous oxide concentration.

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SZABO, Z.

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38. Structure and reaction of the dinitrogen tetroxide molecule — Z. Szabó, L. Bartha, B. Lakatos. (Magyar Kémiai Folyóirat — Vol. 61, 1955, No. 6, pp. 161—176, 5 figs., 10 tabs.)

CH

The reaction between dinitrogen tetroxide molecules and iodide ions as a function of the iodide ion concentration, temperature and pressure was investigated. Based upon the experimental findings it was concluded that besides the well-known symmetric $O_2N \cdot NO_2$ molecule and its thermally dissociated fragment NO_2, a dinitrogen tetroxide molecule of different structure must be present. The structural, kinetic and energetic considerations justified the assumption that the structure of this unknown modification is identical with the ring-type tetroxide molecule proposed by Longuet-Higgins. The other alternative structure *i.e.* the nitrosyl nitrate, which might be taken into account for the building up of the tetroxide ring, can only be considered a transient stage brought about in the course of the reaction since due to the action of heteropolar or strongly polar reactants the ring molecule yields by way of nitrosyl nitrate nitrosyl and nitrate ions. Recombination of these ions produces nitrosyl nitrate as intermediate followed by ring closure yielding the Longuet-Higgins type molecule as end product. The results obtained by the kinetic study of the reaction led to the conclusion that the nitrogen dioxide dissociated from the dinitrogen tetroxide molecule determines the overall velocity of the whole process by the following two stages:

$$NO_2 + N_2O_4 \underset{k_1}{\overset{K_1}{\rightleftharpoons}} ONO_2NO + NO_2 \quad \text{and}$$

$$NO_2 + J^- \rightarrow NO_2^- + \tfrac{1}{2} J_2.$$

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

Szabó, Z. G.

55 **Determination of the solubility product of metal hydroxide precipitates. I. Reaction of aluminium ions with the hydroxyl ion.** Z. G. Szabó, L. J. Csányi and M. Kávai (Univ. Szeged, Hungary) (*Z. anal. Chem.*, 1955, 146 [6], 401–414).—The solubility product of metal hydroxides is calculated from results of potentiometric titrations of the salt solutions with alkali hydroxides using an antimony electrode, the initial pH being potentiometrically controlled. The earlier graphical extrapolation method is not quite accurate for evaluating the results; determination of the limiting value of the first differential quotient curve is preferred. The values of the solubility products thus obtained for $Al(OH)_3$ are $1{\cdot}36 \times 10^{-34}$ at 20° C and $1{\cdot}82 \times$ [illegible] at 30° C, and for [illegible] are [illegible] at 20° C and $1{\cdot}34 \times 10^{-32}$ at 30° C.

D. R. [illegible]

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~~Szabó~~, ZOLTAN G.

Szabo, Z.G.

The structure and reactions of dinitrogen tetroxide. Zoltán G. Szabó, Lajos G. Barthá, and Béla Lakatos (Univ. Szeged, Hung.). *J. Chem. Soc.* 1956, 1784-95.—The reaction between N_2O_4 and I ion shows that in addn. to symmetrical $O_2N.NO_2$ and its monomer, there is also present a tetroxide having the ring structure suggested by Longuet-Higgins (*C.A.* 38, 5741[3]). Equilibrium equations are given for the reactions among the types of mols. Equations for reaction rates with nitrosonium ion intermediates are discussed. Lester D. Shubin

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HUNGARY/Physical Chemistry. Kinetics. Combustion. Explosions. Topochemistry. Catalysis. B-9

Abs Jour: Ref Zhur-Khim., No 13, 1958, 42630.

Author : Szabo Zoltan, Ordogh Maria
Inst :
Title : Kinetics of Dissociation of Ammonia at the Surface of Quartz.

Orig Pub: Magyar tud. akad. Kem. tud. oszt. kozl., 1956, 7, No 3-4, 313-324.

Abstract: A study of the kinetics of decomposition of NH at the surface of quartz, at 740 and 640° and initital NH_3 -pressure po 50-200 mm Hg. It was ascertained that the resulting N_2 does not affect decomposition of NH_3, while H_2, which is strongly adsorbed at the quartz surface, decelerates this reaction. The fol-

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

HUNGARY / Physical Chemistry. Kinetics. Combustion. Explosives. Topochemistry. Catalysis. B-9

Abs Jour: Ref Zhur-Khimiya, No 23, 1958, 76694.

Author : Oerdoegh, M. and Szabo, Z.
Inst : Not given.
Title : The 'Noncatalytic' Oxidation of Ammonia.

Orig Pub: Magyar Tud Akad Kem Tud Oszt Koezl, 7, No 3-4, 325-336 (1956) (in Hungarian).

Abstract: The oxidation was carried out in quartz vessels. When a large amount of NH_3 and a relatively large amount of O_2 is used, the reaction is inhibited. A reduction in the NH_3 content from 50 to 40% results in a marked increase in the reaction rate. In clean annealed reaction vessels the reaction is first inhibited, i.e. active reaction centers are absent in the pure annealed walls. On fur-

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HUNGARY / Physical Chemistry. Kinetics. Combustion. Explosives. Topochemistry. Catalysis. B-9

Abs Jour: Ref Zhur-Khimiya, No 23, 1958, 76694.

Abstract: ther adsorption of the final reaction products, primarily H_2O, the rate of recombination of the active centers is reduced and as a result, the reaction proceeds at an increasing rate. The authors are of the opinion that the first stage in the oxidation reaction is the decomposition of the NH_3 molecules at the walls.

Card 2/2

SZABO Z

Kinetics. Combustion. B

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

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

Abs Jour: Ref Zhur-Khimiya, No 17, 1958, 56758.

Abstract: ation of C_2H_4 at 410 - 420°C. At pressures P_o 154 - 267 millimeters of the mercury column, the relations $\tau_{10} = KP_o - x$ and $\varphi = KP_o y$ where τ_{10} - variation of pressure, 10 minutes after the start of reaction, φ - bifurcation factor; x = 3.3, y = 3.7) are observed. The activation energy calculated from the temperature dependence of τ_{10} (31.2 kilocalories per mole) approximates the value obtained from φ (27.9 kilocalories per mole).

VI. The addition of H_2O (20.5 millimeters of the mercury column) does not affect the oxidation kinetics of C_2H_4 at 416°C and P_o = 265 millimeters of the mercury column. The experi-

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Z.

SZABO, Z. Results of inorganic chemical research during 1954-1955. P. 157.

Vol. 8, No. 1, 1956
KOZLEMENYEI
SCIENCE
Budapest, Hungary

So: East European Accession, Vol, 2, Feb. 1957

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, G.

Chemical use of natural gas. p. 335 MAGYAR KEMIKUSOK LAPJA. (Magyar Kemikusok Egyesulete) Budapest. Vol. 10. No. 11. Nov. 1956

SOURCE: East European Accessions List (EEAL) Library of Congress Vol. 5, No. 6, June 1956

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

Szabo, Z. G.

Kinetics of the thermal decomposition of silver oxalate. Z. G. Szabó and E. Biró-Sugár (Univ. Szeged, Hung.). ~~Z. Elektrochem.~~ 60, 869-74(1956).—The thermal decompn. of highly pure and homodispersed prepns. of $Ag_2C_2O_4$ was investigated under different conditions and in the presence of different gases. The kinetic curves were approximated by a 4-step mechanism. The decompn. is a branched-chain reaction that is propagated principally by material chain propagators. H. H. Jaffé

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

Stolz Z.

The decomposition of persulphate ions was studied at different pH values partly by following the oxidation potential of the persulphuric acid formed and partly by analytical methods. The results obtained were compared with reactions observed in the presence of Mn(II) and Ag(I) ions as catalysts. The order of the ions was established as follows:

in 10-N H_2SO_4: $Fe^{3+} > Mn^{2+} > Ag^{+} > Cu^{2+}$
in 1.0-N H_2SO_4: $Ag^{+} > Cu^{2+} > Mn^{2+} > Fe^{3+}$
in 0.1-N H_2SO_4: $Ag^{+} > Fe^{3+} > Mn^{2+} > Cu^{2+}$
in 1.0-N KOH: $Cu^{2+} > Ag^{+} > Fe^{3+} > Mn^{2+}$

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Slide 2

On comparing the catalytical effects of various ions it was found that the acceleration of the reaction between peroxy disulphate and iodide ions observable in the simultaneous presence of Cu^{2+} and Fe^{2+} ions is due only to a slight degree to the hydrolysis of peroxy disulphate into peroxy sulphate. The higher rate of

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SZABO, Z.

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Catalysis of the reactions of peroxydisulfuric acid. I. Catalytic decomposition of peroxydisulfuric acid. Helene Galiba, L. J. Csányi, and Z. G. Szabó (Univ. Szeged, Hung.). *Z. anorg. u. allgem. Chem.* 287, 152-68 (1956). The decompn. of $S_2O_8^{--}$ was followed qualitatively by measuring oxidation potential vs. time for solns. containing various catalysts and by analyzing the solns. at intervals of time. The half life of $S_2O_8^{--}$ is given for solns. 10N, 1N, and 0.1N in H_2SO_4 and 1N in KOH with 1, 10, or 50 mg./100 ml. of Ag^+, Cu^{++}, Mn^{++}, and Fe^{++} present as a catalyst. Fe(II) is the most effective catalyst in 10N H_2SO_4, Ag(I) in 1N or 0.1N H_2SO_4, and Cu(II) in 1N KOH. In general, decompn. to H_2SO_4 is the most rapid reaction. The effectiveness of Ag(I) and Cu(II) is attributed to the formation of higher oxidation states of the cations. Mo(VI) and W(VI) are less effective in acid soln. than are the other ions. The shapes of the potential vs. time curves are in qual. agreement with the analytical results. B. P. Block

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Szabo, Z. G.

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HUNGARY / Physical Chemistry. Kinetics. Combustion. B-9
Explosions. Topochemistry. Catalysis.

Abs Jour: Ref Zhur-Khimiya, No 7, 1959, 22586.

Author : Szabo, Z. G., Ordogh, M.
Inst : Not given.
Title : On the Kinetics of the Decomposition of Ammonia on Quartz Surface.

Orig Pub: Acta phys. et chem. Szeged, 1957, 3, No 1-4, 69-77.

Abstract: The decomposition of NH_3 in a quartz vessel was studied in a static system at 640 and 740° and under initial pressures of NH_3 of 50 to 200 mm of mercury column. N_2 has no noticeable effect on the rate v of the reaction, but H_2 decreases it very much. v may be expressed by the equation $v = kp_{NH_3} \cdot p_o/(b_{NH_3}p_{NH_3} + b_{H_2}p_{H_2})$, where p_o

Card 1/2

HUNGARY / Physical Chemistry. Kinetics. Combust- B-9
ion. Explosions. Topochemistry. Catalysis.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8"

Abs Jour: Ref Zhur-Khimiya, No 7, 1959, 22586.

Abstract: is the initial pressure, p_{NH_3} and p_{H_2} are the partial pressures of the components in the course of the reaction, and k, b_{NH_3} and b_{H_2} are constants. The authors remark that this equation agrees with the assumption of a strong adsorption of hydrogen and NH_3 on the surface of quartz. A preliminary treatment of the quartz vessel with steam has no noticeable effect on the rate of the reaction, and a preliminary reatment with O_2 even increases the rate somewhat, which the authors attribute to the oxidation of deleterious admixtures on the surface of quartz. The reaction rate decreases, if O_2 is added to the reaction mixture in the course of the reaction. -- S. Kiperman.

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SZABO, ZOLTAN

B.

HUNGARY/Physical Chemistry - Kinetics, Combustion, Explosions, Topochemistry, Catalysis.

Abs Jour : Ref Zhur - Khimiya, No 14, 1958, 46011

Author : Zoltan Szabo, Tibor Berces.

Inst : Academy of Sciences of Hungary.

Title : Mechanism of Thermal Dissociation of Sulfuryl Chloride.

Orig Pub : Magyar tud. akad. Kemi tud. ösztl kozl. 1957, 9, No 2, 155-178

Abstract : The kinetics of the thermal dissociation of SO_2Cl_2 (I) was studied at 275 to 320° under initial pressures of I from 40 to 100 mm of Hg column, at various concentrations (of I, Cl and SO_2) and in various reaction vessels (of quartz, Jena glass and soda glass). Contrary to the results of earlier investigations (see Schumacher H.J., Schott C., Z. Phys. Chem., 1944, 193, 343),

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

Distr: 4E3d

Mechanism of homogeneous chain catalysis and inhibition. Z. G. Szabó, P. Huhn, and A. Bergh (Univ. Szeged, Hung.). ~~Advances~~ in Catalysis 9, 343-52(1957).—The principle of the stabilization of free radicals is used in interpreting the mechanism of catalyzed and inhibited chem. reactions. Math. details are given and applied to data for the decompn. of propylaldehyde and the decompn. of Et_2O as influenced by NO. Paul H. Emmett

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Z. G.

Kinetics of oxidation of hydrocarbons. I. General experimental technique. II. Non-catalysed oxidation of ethane. Z. G. Szabó and D. Gál. [illegible] 1957 10 [illegible] 395-411 — [illegible] investigations were carried out on C_2H_6, C_3H_8 and C_4H_{10} without catalysts and using NO_2 and methylamine as catalysts. The apparatus and [illegible] of the measurements are described. [illegible] references.

[illegible] of the initial pressure P_0 [illegible] 400 mm. Hg: oxidation proceeds only [illegible] change [illegible] running-up time and total pressure with composition of mixture indicates different behaviour below and above [illegible] content. The two regions differ also in effect of P_0 on [illegible] time and on the value of branching factor [illegible] the apparent activation energies. The latter are higher than previously reported. Identity of temp. coeff. of branching factors for the two regions and transformation of curves indicate that the difference between the regions exists in the starting or chain-propagating steps. (17 references.) (In English.)

H. Sawistowski

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Z , Gal, D.

On the kinetics of the oxidation of hydrocarbons. III. Effect of water and iodine on the oxidation of ethane. IV. Effect of methylamine and nitrogen dioxide on the oxidation of ethane. V. The non-catalytic oxidation of ethylene. VI. Effect of homogeneous catalysts on the oxidation of ethylene. VII. Oxidation of acetylene and the effect of homogeneous catalysts on the oxidation. In English. p. 205.
(ACTA CHIMICA. Vol. 11, no. 3/4, 1957. Hungary)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, no. 12, Dec. 1957. Uncl.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654330010-8

SZABO, Z. G.

27 21

Effect of inert gases on the thermal decomposition of silver oxalate. Z. G. Szabó and E. Bíró-Sugár. Naturwissenschaften 44, 502(1957); cf. C.A. 52, 5944f.—The acceleration of the thermal decompn. of $Ag_2C_2O_4$ by H, He, Ne, N, A, Kr, CO_2, and Xe is detd. The effect is approx. proportional to $1/M^{1/2}$, where M is at. or mol. wt. Kr and CO_2 have no effect on the rate and Xe decreases it. The acceleration is caused by displacement of the CO_2 formed in interstices of the $Ag_2C_2O_4$ by the added gas. G. L. C.

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Szabó 2 G

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The effect of neighboring groups on the strength of bonds. Z. G. Szabó (Univ. Szeged, Hung.). *Z. Elektrochem.* 61, [illegible] 195[illegible]. S. develops a consistent scheme for the [illegible] energies by adding a basic value A for a [illegible] [illegible] nated for H, F, Cl, Br, I, O, [illegible], N, Me, CH_3, CH_2 [illegible] Ar, Ph, and 15 more complicated org. radicals. These values are used to calc. bond energies of a total of 84 C-C, [illegible] C-B, C-I, S-H, S-S, O-O, and C-S [illegible] values shows a max [illegible] deviation of [illegible] and a mean [illegible] deviation of [illegible] H. H. Pope

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Distr: 4E3d

27

Hydrolysis of dinitrogen tetroxide. Lajos Bartha and Zoltán G. Szabó (Univ. Szeged, Hung.). *Magyar Kém. Folyóirat* 62, 204-6(1957).—The results of a previously published investigation (*C.A.* 50, 12718g) are substantiated. It is shown that the hydrolysis of N_2O_4 is much slower than its reaction with I^- and that the NO_2 mol. does not take part in the hydrolysis of the tetroxide. F. J. Schmidt

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SZABO, Z; KAMIT, E.

A Many-sided torsion balance used in chemical laboratories.

p. 15 (Magyar Kemiai Folyoirat) Budapest Vol 63. No 6/7 June/July 1957

SO: Monthly Index of East European Acessions (AEEI) Vol 6, No. 11 November 1957

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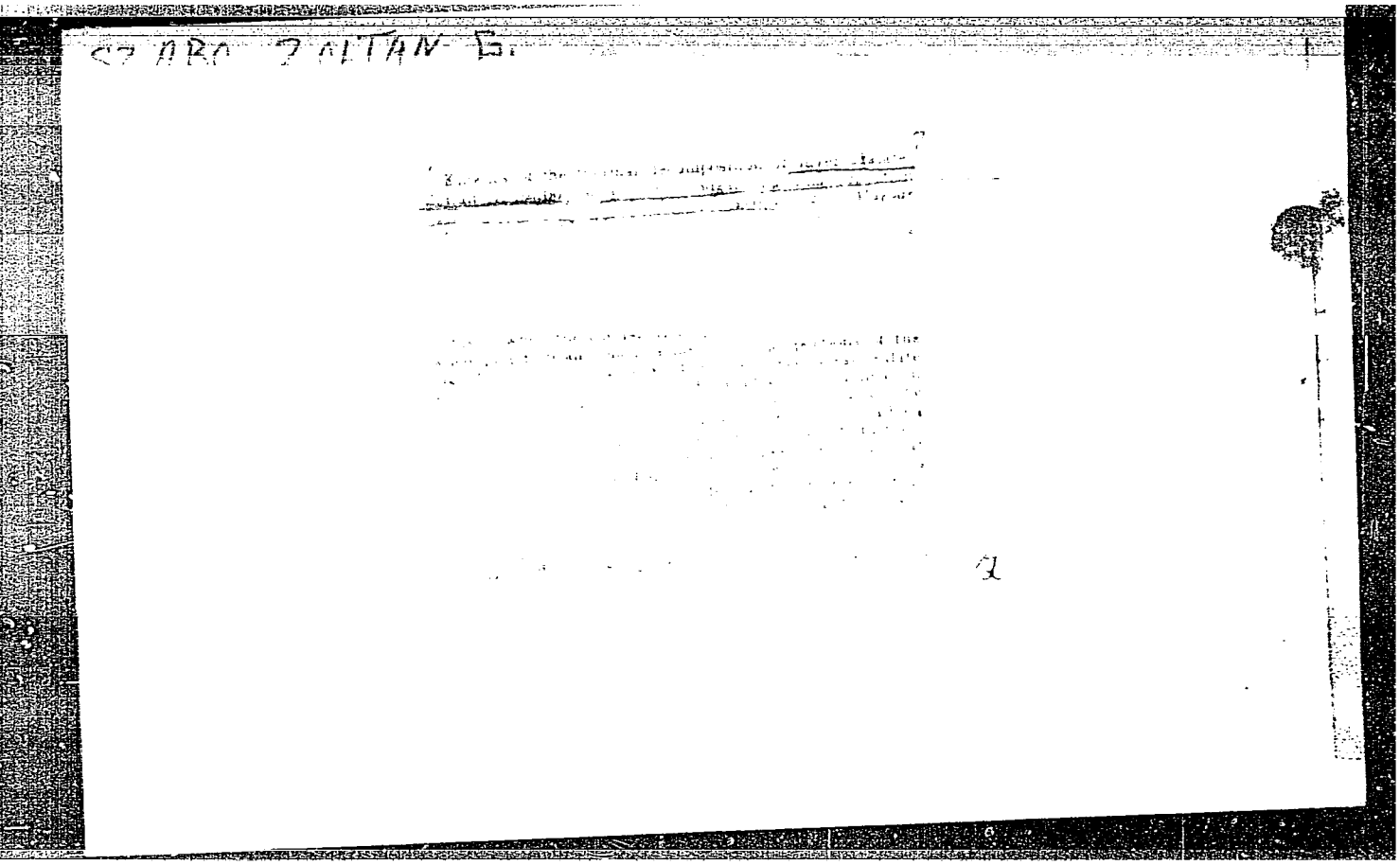

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Colorimetric determination of the fluoride ion based on interference with extractability. Z. G. Szabó, M. T. Beck, and K. Tóth (Univ. Szeged, Hung.). *Mikrochim. Acta.* 1958, 181-5(in English).—Fluoride added to colored metal complexes form colorless fluoro-complexes. The decrease in the extinction is often used as a measure of the F concn. If the color is extd. with an org. solvent such as AmOH the color is concd. and the sensitivity is increased. This procedure was studied by using the ferric thiocyanate and the silicofluoride methods. In the thiocyanate procedure 10 γ/50 ml. F can be detd. in a soln. of pH 2.9. The interfering effects of Ca, Mg, SO_4, Cl, PO_4, and Al were studied also. H. W. Harvey

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Szabo, Z.G.

HUNGARY/Physical Chemistry - Kinetics. Combustion. Explosions. Topochemistry. Catalysis B-9

Abs Jour: Referat Zhur - Khim, No. 9, 1959, 30507

Author : Gal, D., Szabo, Z.G.

Inst : Hungarian Academy of Sciences

Title : On the Kinetics of the Oxidation of Hydrocarbons. IX. Conditions for the Transition of Degenerated Explosions to Real Explosions. X. Formal Kinetic Study and Mechanism of Cold Flame Propagation.

Orig Pub: Acta Chim Acad Sci Hung, No 1, 1958, 21-28; Magyar Tud Akad Kem Tud Oszt Koezl, 1958, No 2-3, 317-323; Acta Chim Acad Sci Hung, 1958, No 1, 29-38.

Abstract: IX. It has been shown that in the region of low-temperature oxidation of hydrocarbons the degenerated-to real explosion transition [deflagration-

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HUNGARY/Physical Chemistry - Kinetics. Combustion. Explosions. Topochemistry. Catalysis B-9

Abs Jour: Referat Zhur - Khim, No. 9, 1959, 30507

to-detonation transition] does not take place under purely thermal regime. It is assumed that the course of the reaction is determined by a change in the value of the branching factor φ. In the opinion of the authors the relation $w_c = A\exp(\varphi t)$ (1) (N. N. Semenov, Tsepn'ye Reaktsii [Chemical Kinetics and Chain Reactions, Oxford] 1935) and the relation, derived from it $\tau_{max} =$ const (2), where w_c is the critical velocity at which the transition to detonation takes place and τ_{max} is the time required for the attainment of w_{max}) P_o is the initial pressure; in addition, $\varphi = CP_o^{+y} \exp(-E_\varphi/RT)$, $\tau_{max} = CP_o^{-x} \exp(E_\tau/RT)$, is a sufficient condition for detonation only for the case when $x \approx y$ (3) and $E_\varphi \approx E_\tau$ (4). If conditions (3) and (4) are not met, then the

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