

МАМОНОВСКИЕ, И.С.; ПРИС, О.А.

История и география городов и поселков: Ист. географ.  
замет. 30 no.12:1314-1328 1964 (ИЗДА 1964)

1. Днепропетровский государственный университет и Львовский  
государственный университет.

PRIB, O A

✓ Molecular-weight determination of associated substances.  
in solution. E. E. Cherkashin and O. A. Prib. *Nauk.*  
Zapiski L'viv. Derzhav. Univ. im. I. Franka 14, Ser. Khim.  
No. 4, 91-7 (1955) (in Russian). —Math. A. P. Katiobv

2

MT

CHERKASHIN, Ye.Ye.; PRIB, O.A.

Determination of molecular weights of associated substances in  
solutions. Nauk.zap.L'viv.un. 34:91-97 '55. (MLRA 9:10)

(Molecular weights)

S/079/63/033/002/009/009  
D205/D307

AUTHORS: Prib, O.A. and Malinovskiy, M.S.

TITLE: Propargyl esters of arylsulfonic acids and some of their reactions

PERIODICAL: Zhurnal obshchey khimii, v. 33, no. 2, 1963, 653 - 657

TEXT: Propargyl esters of benzene-, p-toluene-, p-chlorobenzene-, and 4-chloro-3-nitrobenzenesulfonic acids were prepared, for the first time, by reacting equimolar quantities of the corresponding sulfochlorides and propargyl alcohol in absolute ether, below - 50°C, in the presence of finely ground KOH. The resulting esters could be brominated under uv illumination to give a mixture of cis and trans isomers rich in trans. Cis-isomers could be obtained by bromination in direct sunlight, at 30°C. By reacting the benzene-, p-toluene, and 4-chlorobenzenesulfonic esters, as prepared above, with aniline, p-toluidine, and compounds  $(RO)_2P(S)SK$  (where R = n-Pr, iso-Fr, n-Bu, n-Am, and 4-ClC<sub>6</sub>H<sub>4</sub>), the  
Card 1/2

Propargyl esters of ...

S/079/63/033/002/009/009  
D205/D307

authors obtained at room temperature propargylaniline, propargyl-  
p-toluidine, and the propargyl esters of O,O-di-N-propyl-, O,O-di-  
iso-propyl-, O,O-di-n-butyl-, O,O-di-n-amyl and O,O-di-p-chloro-  
phenyldithiophosphoric acid in 80 -95 % yields. The propargyl esters  
of aryl sulfonic acids are thus alkylating compounds. There are 2  
tables.

ASSOCIATION: L'vovskiy gosudarstvennyy universitet imeni I. Franko  
(Lvov State University imeni I. Franko)

SUBMITTED: February 26, 1962

Card 2/2

PRIB, O.A.; VASIL'KEVICH, I.M.; GALIBEY, V.I.

Synthesis of esters of 4-chlorobenzenesulfonic acid. Ukr. khim.  
zhur. 26 no.6:750-752 '60. (MIRA 14:1)

1. L'vovskiy gosudarstvennyy universitet.  
(Benzenesulfonic acid)

VIZGERT, R.V.; SAVCHUK, Ye.K.; PRIB, O.A.

Reactions of esters of aromatic sulfonic acids. Part 11: Alkaline  
and neutral hydrolysis of nitro substituted phenyl benzoyl sulfonates.  
Zhur. ob. khim. 31 no.1:194-198 Ja '61. (MIRA 14:1)

1. L'vovskiy politekhnicheskij institut.  
(Sulfonic acid)

ZEMLYANSKIY, N.I.; PRIB, O.A.; DRACH, B.S.

Reaction of potassium O,O-dialkyldithiophosphates with aromatic  
sulfonyl chlorides. Zhur. ob. khim. 31 no.3:880-883 Mr '61.

(MIRA 14:3)

1. L'vovskiy gosudarstvennyy universitet.

(Sulfonyl chloride)

(Phosphorodithioic acid)



L 06512-67 EWT(m)/EWP(j) RM

ACC NR: AP7000480

SOURCE CODE: UR/0079/66/036/006/1118/1121

AUTHOR: Zemlyanskiy, N. I.; Prib, O. A.; Glushkova, L. V.

ORG: L'vov State University (L'vovskiy gosudarstvennyy universitet)

20  
B

TITLE: Arylation of O,O-dialkyldithiophosphates ↑

SOURCE: Zhurnal obshchey khimii, v. 36, no. 6, 1966, 1118-1121

TOPIC TAGS: benzene derivative, sulfonic acid, ester

ABSTRACT: The reaction of certain aryl esters of benzenesulfonic acid with potassium salts of O,O-dialkyldithiophosphoric acids was studied in an effort to expand the methods of producing O,O-dialkyl-S-aryldithiophosphates, promising pesticides with low toxicity for warm-blooded animals and man. Potassium O,O-dialkyldithiophosphates in acetone solution react readily with 2,4- and 2,6-dinitrophenyl esters of benzenesulfonic acid at room temperature, producing good yields of O,O-dialkyl-S-dinitrophenyl esters of dithiophosphoric acids. The potassium O,O-dialkyldithiophosphates do not react with phenyl and mononitro- and monochlorophenyl esters of p-chloro- and p-methylbenzenesulfonic acids even with prolonged heating. Orig. art. has: 1 table. [JPRS: 37,023]

SUB CODE: 07 / SUBM DATE: 06Jul65 / ORIG REF: 004 / OTH REF: 003

Card 1/1 LS

UDC: 547.26\*118 -

1. PRIB, O. A.: ZEMLYANSKIY, N. I.; SHARYPKINA, M. Ya.
2. USSR (600)
4. Hydrocarbons
7. Oxidation of hydrocarbons with air oxygen induced by chlorine.  
Zhur.ob.khim. 22 no. 10 1952

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

SOBOTKA, Jaroslav; PRIB, Stanislav, inz.

Prefabricated parts for steam pipeline canals. Poz stavby 12 no.5:  
199-203 '64.

1. Pozemni stavby, Ceske Budejovice.

KALENSKY, J.; PRIBANOVA J.

Soap and its effect on the skin. Cesk. dermat. 38 no.4:232-239  
Ag '63.

1. II dermato-venerologicka klinika fakulty vseobecneho  
lekarstvi KU v Praze prednosta prof. dr. J. Obrtel, DrSc.  
(SOAPS) (SKIN) (DERMATITIS, CONTACT)

CHEKANOVSKIY, M.I.; KALVIN, M.V.; KAMIN, M.V.; KAMIN, M.V.; KAMIN, M.V.

Pneumatic charging of coke into the firing hearth of a sintering furnace. Metallurg 9 no.514-5 50 1964. (MIRA 14 9)

1. Metallurgicheskiy kombinat im. Serova.

ПРИБАВК НА, R.A.

Intensity of  $P^{32}$  uptake into the tissues of apple and pear trees  
of different rates of ripening. Nauch. dokl. vys. shkoly; biol.  
nauki no.1:95-98 '65. (MIRA 18:2)

1. Rekomendovana kafedroy genetiki i selektsii Moskovskogo gosu-  
darstvennogo universiteta.

USSR/Cultivated Plants - Fr its. Berries.

M

Abs Jour : Ref Zhur Biol., No 18, 1958, 82496

Author : Pribavkina, R.A.

Inst : Saratovsk Agricul tural Institute

Title : Experiments on the Determination of Economic Characteris-  
tics in Apple Tree Seedlings at the Early Stages of Life

Orig Pub : Tr. Saratovsk. s.-kh. in-ta, 1957, 10, 169-175

Abstract : Studies of some physical-biochemical processes in 5-year  
old hybrid seedlings of Bel'fler Krasnyy with Papirovska  
were carried out at the Department of Plant Physiology  
of Saratov Institute of Agriculture. In seedlings with  
a longer vegetation period the accumulation of organic  
carbon was taking place less intensively. Photosynthe-  
sis proceeded less intensively in seedlings with more of  
the cultivated morphological characteristics but to them

Card 1/2

USSR/Cultivated Plants -- Fruits. Berries.

M

Abs Jour : Ref Zhur Biol., No 18, 1958, 82496

a lesser intensity of respiration was peculiar. Seedlings which deviated to the side of the fast maturing Papirovka variety showed a heightened catalase activity. The catalase activity and intensity of respiration changed in the hybrid seedling under the influence of a mentor. The character of these changes is similar to the character of the fermentative tendency and dissimilation processes of the mentor itself. -- A.Ch. Kelli

Card 2/2

- 120 -



Prilavkina, R. A.

✓ Changes in ripening dates of fruit and direction of enzymic activity in hybrid seedlings of apple under the action of the mentor (root stalk). P. V. Shatilov and R. A. Prilavkina (Agr. Inst., Saratov). *Fiziol. Rastenii* 7, 451-5 (1933).  
Young hybrid apple seedlings show a direct correlation of enzymic (invertase) activity with dates of fruit ripening; the early-ripening plants show less vigorous formation of sucrose. An analogous action is produced by grafting of mentor plants of relatively poor quality onto the expl. plants.  
G. M. Kosolapoff

①

PRIBAVKINA, R.A., kandidat sel'skokhozyaystvennykh nauk.

Formation of apple seedlings selected before fruiting. *Agrobiologiya*  
no.3:114-116 My-Je '56. (MLRA 9:9)

1.Saratovskiy sel'skokhozyaystvennyy institut.  
(Apple) (Grafting)

BOGDANOV, S. and PRIBEGIN, A.

Vazhneishie voprosy raboty Moskovskogo uzla. [Important questions of operation  
of the Moscow railway junction]. (Zhel-dor. transport, 1948, no. 11, p. 60-64).  
DLC: HE7.75

SO: SOVIET TRANSPORTATION AND COMMUNICATIONS, A BIBLIOGRAPHY, Library of Congress  
Reference Department, Washington, 1952, Unclassified.

PRIBEGIN, A. I.

Za ekonomiiu i berezhivost'; iz opyta Moskovsko-Okruzhnoi zhel-dor. [ For economy  
and thrift; from the experience of the Moscow Circuit railway ]. [ Broshuru  
napisal A. I. Pribegin, pri uchastii N. M. Chekmeneva i dr. ]. Moskva Gos. transp.  
zhel-dor, izd-vo, 1949. 85 p. diagrs. DLC: TF86.M6P7

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

PRIEGIN, A. I.

Economy and thrift; experience of the Moscow Oblast railroad. Moskva, Gos.  
transp. zhel-dor. izd-vo, 1949. 65 p. (50-15772)

TF86. M6P7

PRIBELA, A.

Apparatus for quantitative evaluation of paper chromatograms.  
Chem zvesti 17 no.9:689-692 '63.

1. Katedra chemickej technologicie uhlohydratov, Slovenska vy-  
soka skola technicka, Bratislava.

FRIBEL, A.

Dosing and gasifying device for gas chromatograph. Chem  
zvesti 19 no.4:310-315 '65.

1. Chair of Saccharide and Food Chemistry and Technology of  
the Slovak Higher School of Technology, Bratislava.

PRIMELA, A.

Aromatic substances used in the canning industry. p. 197

PRYMSL, POTRAVIN. Praha, Czechoslovakia, Vol. 10, no. 4, April 1959.

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



PRIEELA, Alexander, inz.; ROHANEK, Pavel, inz.

Changes of aromatic substances in various methods of fruit syrup production. Prum potravín 16 no.4:199-201 Ap '65.

1. Chair of Chemistry and Technology of Saccharides and Food of the Slovak Higher School of Technology, Bratislava. Submitted July 14, 1964.

PRIBELA, Alexander, inz.

Determination of alcohols by gas chromatography. Kvasny  
prum 10 no. 2: 31-35 F '64.

1. Katedra chemickej technologicie uhlohydratov, Slovenska  
vysoka skola technicka, Bratislava.

PRIBELA, Alexander, inz.

Comparison of the photometric evaluation of chromatograms in reflected and transient light. Chem zvesti 17 no.10/11:816-822 '63.

1. Katedra chemickej technologie uhlohydratov, Slovenska vysoka technicka, Bratislava, Kollarovo namesti 2.

PRIBELA, Alexander

Study of volatile substances in fruits. Biologia (Bratisl) 20  
no.3:173-180 '65.

1. Katedra chemie a technologie sacharidov a potravín Slovenskej  
vysokej školy technickej v Bratislave.

L 35271-66

ACC NR: AP6024802

SOURCE CODE: CZ/0049/66/000/003/0183/0193

AUTHOR: Pribela, Alexander (Engineer; Bratislava); Schunova, Vlasta--Shunova, V. (Engineer; Bratislava) 16  
B

ORG: Department of Chemistry and of Sugar and Food Technology, Slovak Technical University, Bratislava (Katedra chemie a technologie sacharidov a potravin Slovenskej vysokej skoly technickej)

TITLE: Chromatographic determination of organic acids in fruit

SOURCE: Biologia, no. 3, 1966, 183-193

TOPIC TAGS: food chemistry, organic acid, paper chromatography, titrimetry

ABSTRACT: The acids were absorbed in a column filled with Dowex 1 anion exchanger, impurities washed out by distilled water and a 6M solution of formic acid. Individual fractions were separated by paper chromatography; the developing solution consisted of tertiary amyl alcohol, n-butanol, and 98% formic acid and water in proportions of 5:15:6:6, containing 0.02% of bromphenol blue. Oxalic acid which interferes with this type of determination is separated by this method. The total content of the acids was determined by titration. The evaluation of individual acids is made directly from the chromatographic paper by an objective densitometer. Content of various acids in several kinds of fruit is given. Orig. art. has: 7 figures and 3 tables. [JPRS: 35,814]

SUB CODE: 06 / SUBM DATE: 22Oct65 / ORIG REF: 004 / SOV REF: 001 / OTH REF: 016

Card 1/1 *llk*

L 10830-66

ACC NR: AP6004447

SOURCE CODE: CZ/0043/65/000/004/0310/0315

AUTHOR: Eribela, Alexander

31  
B

ORG: Department of Chemistry and Technology of Saccharides and Foods, Slovak Technical University, Bratislava (Katedra chemie a technologie sacharidov a potravín Slovenskej vysokej školy technickej)

TITLE: Dosimetric and gasification apparatus for gas chromatograph Chrom I

SOURCE: Chemicke zvesti, no. 4, 1965, 310-315

TOPIC TAGS: chemical laboratory apparatus, gas chromatography, gas analyzer

ABSTRACT: The apparatus was designed for use with the Czechoslovak Chromatograph Chrom I. It allows to measure liquid samples by means of a micropipette or of an injection needle with a piston operated by a micrometer. The gasification block uses a 25W heater. Instructions for attaching the arrangement to the chromatograph are given. It is suitable for temperatures up to 150°C. The equipment was prepared in the Workshop for Scientific Research of the Chemical Faculty SVST. For technical advice and remarks, the author thanks the Head of the Workshop, S. Safcik, and for the taking of the dosimetry, E. Kratky. Orig. art. has: 6 figures. [JPRS]

SUB CODE: 07 / SUBM DATE: 20Apr64 / ORIG REF: 006 / OTH REF: 004

Card 1/1

PRIBEL'SKI, D. [Pribelszky, G.]

Distortion analysis of FM radio channels under general conditions. Acta techn Hung 42 no.1/3:21-30 '63.

1. Nauchno-issledovatel'skiy institut svyazi, Budapesht

BOGNAR, Geza; CSIBI, Sandor; PRIBELSZKY, Gyorgy

Hungarian research results in the field of wide-band microwave radio connections; also, remarks by S.Csibi and Gy.Pribelszky. Muszaki kozl MTA 26 no.1/4:9-24 '60. (EFAI 9:10)

1. A Magyar Tudomanyos Akademia tagja, Tavkozlesi Kutato Intezet  
(for Bognar)  
(Hungary--Radio)  
(Microwaves)



8410

S/123/59/000/006/001/025  
A005/A001

1.2100

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1959, No. 6, p. 14,  
# 20212

AUTHORS: Mishin, Ye. V., Pridantsev, S. A.

TITLE: Comparative Investigations of Steels for Bolts of Hot Connections in Aircraft

PERIODICAL: Tr. Kazansk. aviats. in-ta, 1958, Vol. 41, pp. 55-60

TEXT: Physicomechanical comparative investigations were carried out of three brands of steel 30XГСА (30KhGSA), X18H11Б (Kh18N11B), and 18XHBA (18KhNVA). The effect of repeated heating was determined at 500°C on  $a_K$ , as well as the effect of the test temperature (20-650°C) on  $\sigma_b$ ,  $\delta$ ,  $\psi$ ,  $a_K$ , the linear expansion coefficient, and the strength of the bolts at expansion with skewing. It is recommended, on the basis of the data obtained, to use steel 18KhNVA for bolts operating at high temperatures.

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

PRIEZENTSEYEV, V. A.

20692. Pritezentsyev, V.A. Metlody ispytaniy eralirovannoy troleolki. [Sokr.  
izlozheniye doklada na zasidaniy Vsesoyuz. byuro elektr. izolyatsii VNITOE. Mart.  
1949g.] Vestnik elektroprom - sti, 1949, No. 6, s. 15-20

SO: LETOPIS ZHURNAL STATEY - Vol. 28, Moskva, 1949

*Fig. 5*

✓ Economic Production of Steel Castings for Armatures.  
J. Fiala. Reports of Czechoslovak Foundry Research, MG  
~~Strojarska Strojarnice~~ 1955, 3, 41. (In Czech. Details  
are given of improved methods of pouring and chilling.

*Handwritten initials*

PRIBIC, L.

Areas inhabited by some mammals and birds of our hairy and feathered wildlife in inaccessible and hitherto unregulated hunting grounds in Serbia and Kosovo-Metohija. p. 381, (GLASNIK, No. 5/6, 1953, Belgrade, Yugoslavia)

SO: Monthly list of East European Accessions, (EEAL), LC, Vol. 4, No. 1, Jan. 1955, Uncl.

PRIBICEVIC, S.  
SURNAME (in caps); Given Names

Country: Yugoslavia

Academic Degrees: [not given]

Affiliation: [not given]

Source: Belgrade, Veterinarski glasnik, No 5, 1961, pp 432-433.

Data: News: "Meeting of the Commission for Professional Activity of the Federation of Associations of Veterinarians and Veterinary Technicians of the Federal People's Republic of Yugoslavia."

PRIBICEVIC, S.  
SURNAME (in caps); Given Names

Country: Yugoslavia

Academic Degree: /not given/

Affiliation: not given/

Source: Belgrade, Veterinarski glasnik, No 7, 1961, p. 611.

Data: Book Review: "Animal Food Supplies of Yugoslavia", by Obradovic, M.  
and Stosic, D.. (Yugoslav).

GAL, O.; PRIBICEVIC, S.; KONSTANTINOVIC, S.; DRAGANIC, I.

Radiation dosimetry of the RA reactor at Vinca. Measurements by chemical dosimeters. Bul Inst Nucl 13 no.1:53-75 Ap '62.

1. The Boris Kidrich Institute of Nuclear Sciences, Department of Radiation Chemistry, Vinca.

PRIBICEVIC, S. Dr. (Simeon)

"Ass. Prof. & chief of Inst. of domestic Animals Feeding, Vet. Fac., Beograd.  
Coclebur (Xanthium Saccharatum) Poisoning in Pigs."

Vet. 1 : 34-48, 1954  
Vet. 1 : 69-80, 1954



HERGESIC, B.; FERBER, E.; MAVER, H.; PANTAZIJEVIC, D.; DIVANOVIC, B.; TODOROVIC,  
P.; VRACARIC, B.; SIMIC, B.; BOGOJEVSKI, D.; KLINC, L.; RAMZIN, S.;  
PETROVIC, D.; DAJA, A.; MILIC-KRIVODOLJANIN, B.; PRIBICEVIC, S. (Beograd);  
ZEREMSKI, D. (Beograd); VAJIC, V.

Review of periodicals; nutrition. Bul sc Youg 9 no.4/5:147-148  
Ag-0 '64.

L 31753-66 ENP(w) IJP(c) EM

SOURCE CODE: CZ/0032/65/015/008/0570/0574

ACC NR: AP6021662

AUTHOR: Pribik, J. (Engineer); Vencovsky, J. (Engineer; Candidate of sciences)

55  
B

ORG: Geskomoravska-Kolben-Danek, National Enterprise, Prague (CKD)

TITLE: Calculation of stress conditions in the drum barrels of hoisting machines with a digital computer

SOURCE: Strojirenstvi, v. 15, no. 8, 1965, 570-574

TOPIC TAGS: hoisting equipment, digital computer, computer calculation, stress analysis, solid mechanical property, cyclic load

ABSTRACT: The article presents an example of time-saving application of a digital computer to calculate stress conditions in the drum barrels of hoisting machines, taking into account the elasticity of the cable and drum. The following values are analyzed mathematically: the forces acting in individual coils of cable lying in two layers, deflection of the drum, its derivative, bending moment, shearing force, loads on the supporting construction, and the mean stress. This article was presented by Engineer S. Sindelar, Candidate of Sciences. Orig. art. has: 5 figures and 17 formulas. [Based on authors' Eng. abstract] [JPRS]

SUB CODE: 13, 20, 09 / SUBM DATE: none / ORIG REF: 001 / OTH REF: 001

LS

Card 1/1

UDC: 622.673.1:681.142-83

GOTZ, Jiri; PRIBIK, Radko

Thermal flow of the surface of glass. Silikaty 5 no.3:  
203-219 '61.

1. Vyzkumny ustav uzitkoveho skla a bizuterie, Jablonec nad  
Nisou.

Instruments and Equipment

CZECHOSLOVAKIA

PRIBIK, V: Physiological Institute, Czechoslovak Academy of Sciences (Fysiologicky Ustav CSAV), Prague.

"Circular Counter with Prosetting and Numerical Indication."

Prague, Ceskoslovenska Fysiologie, Vol 15, No 2, Feb 66, pp 126-127

Abstract: The counter was developed for work in biology for automation of experiments, and classification and evaluation of the data collected. It is a transistorized apparatus with printed circuits. Diagram of the apparatus and its detailed description are presented. 1 Figure, no references. Submitted at "16 Days of Physiology" at Kosice, 28 Sep 65.

1/1

CZECHOSLOVAKIA

PRIBIK, V.; [Affiliation not given].

"Modelling in Cybernetics by KLIR, JIRI and VALACH MIROSLAV."

Prague, Coskoslovenska Fysiologie, Vol 15, No 2, Feb 66, p 162

Abstract: The article reviews a book published by the SNTL and SVTL publishing institution at Prague in 1965. The book has 256 pages and sells for 21.50 Kcs. The book is destined for readers who are familiar with the basic concepts of cybernetics. In the first part of the book the principle of modelling is discussed, and abstract and technical means of modelling are described. The second part deals with biological systems whose modelling appears to have advantages. Problems of modelling of the homeostasis, neurons and neuron networks are discussed. The last part is concerned with modelling of psychic aspects of higher living organisms using mechanical means for the modelling. No references.

1/1

PRIBIK, V.; MARTINEK, Z.

Device for automatic control and programming of experiments with  
"situational" conditioned reflexes in dogs. *Physiol. Bohemoslov.*  
14 no.4:390-398 '65.

1. Institute of Physiology, Czechoslovak Academy of Sciences,  
Prague. Submitted December 12, 1964.

DOUBT

9587. Complexometric titrations. (Chelatometry).  
 XIX. Spectroscopic and determination of  
 mercury.<sup>24</sup> Kórbí and J. Píbil (Res. Inst. Phys.  
 and Biophys., Prague, Czechoslovakia). *Chem.  
 Listy*, 1957, 51 (4), 857-871. — Thiousemicarbazide (II)  
 has been found to be suitable for masking Hg,  
 yielding colorless and water-sol. complexes. With  
 the use of I, the complexometric determination of  
 Bi, Pb, Cd and Zn can be carried out in the presence  
 of a large excess of Hg. The reaction between I  
 and the complex of Hg with EDTA was used for  
 specific indirect determination of Hg and Bi or Hg  
 and Pb in the presence of each other. *Procedure for  
 Bi in the presence of Hg*—To an acid soln. (pH 1  
 to 2) add 0.1 M I (5 to 25 ml), dilute to between  
 100 and 200 ml with water, add Xylenol orange  
 indicator and titrate with 0.05 M EDTA (disodium  
 salt) (II) till the colour changes from red to yellow.  
 When titrating Pb, previous neutralisation with  
 hexamine to a pH of 5 to 6 is necessary. In the  
 same manner the titration of Cd and Zn can be  
 carried out. For the titration of Hg in the presence  
 of Zn, Pb or Cd, the total amount of metals at pH 5  
 to 6 is first determined, and after the addition of  
 I the demasked II is titrated with a soln. of Pb or  
 Zn. A similar procedure is suitable for mixtures of  
 Bi and Hg; the total amount is determined in an  
 acid soln. (pH 2) but hexamine must be added  
 before the equiv. point is reached. J. Zizka.

M. Lee

PRIBILLA, Walther, Dr.; HUNSKI, Miran, dr.

The treatment of polycythemia vera with radioactive phosphorus.  
Lijec. vjes. 77 no.5-7:321-325 May-July 55.

1. Iz Medicinske poliklinike Univerziteta u Kolnu i Medicinske  
klinike gradskih bolnica Koln-Merheim. Aus der Medizinischen  
Poliklinik der Universitat, Koln und der Stadtischen Krankenanstalt  
Koln-Merheim.

(POLYCYTHEMIA VERA, ther.  
radiophosphorus (Ser))

(PHOSPHORUS, radioactive,  
ther. of polycythemia vera (Ser))

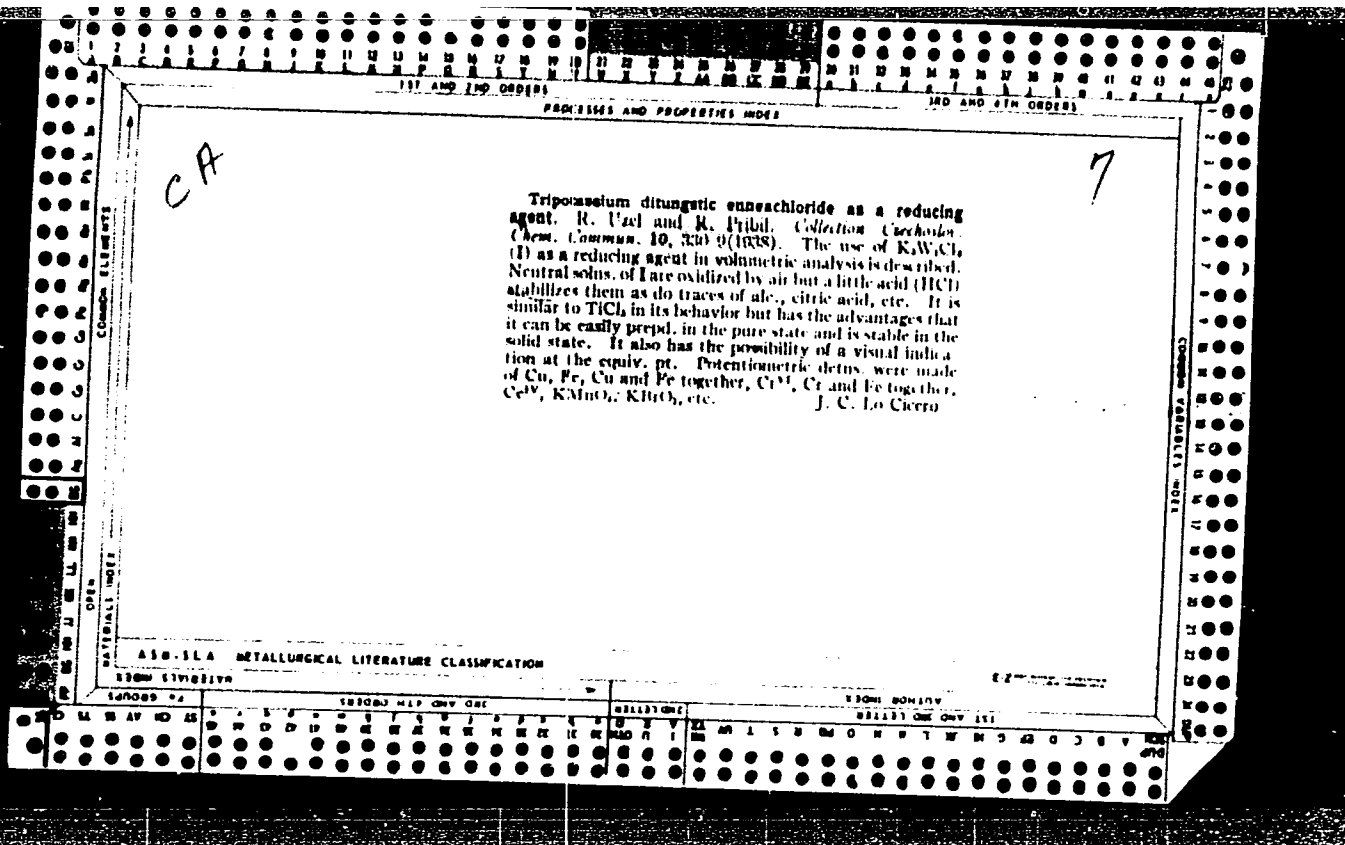


2

CA

**Mercuric cyanide and mercuric oxycyanide electrodes.**  
 O. Tomáček and R. Hájek. *Collection Czechoslov. Chem. Communications* 7, 10-24(1965).--Theoretical discussion of the potentials of Hg|Hg(CN)<sub>2</sub> and Hg|Hg(CN)<sub>2</sub>.HgO electrodes. Predictions of potential change in acid and basic solns. are made from the theoretical considerations. Measurements of H-ion concn. were made with the electrodes and they were used as indicating electrodes in acidimetric titrations. For H-ion detn. a soln. with large buffer capacity was used, consisting of a mixt. of 0.01 M H<sub>2</sub>PO<sub>4</sub>, AcOH and H<sub>2</sub>BO<sub>3</sub> known as Britton's soln. Fifty cc. of this soln. was pipetted out and titrated with 0.2 N NaOH. The said. KCl calomel electrode was used for reference. The electrodes consisted of perfectly amalgamated Pt spirals which were placed in the measured soln. in which the resp. substances were dissolved. Reproducible values of potentials corresponding to the H-ion concn. are obtained in acid solns. with Hg|Hg(CN)<sub>2</sub> electrode and in alk. solns. with Hg|Hg(CN)<sub>2</sub>.HgO electrode under certain concns. of Hg(CN)<sub>2</sub>, HCN and Hg(CN)<sub>2</sub>.HgO. As indicator electrode, in weak acids titration gives one max. inflection point, but with strong acids two maxima appear, the smaller one being the correct end point.  
 W. H. Bruckner \

ASB-516 METALLURGICAL LITERATURE CLASSIFICATION



CA

7

**Cerimetric determination of arsenic and antimony.**  
Rudolf Pribil. *Chem. Listy* 37, 205-7, 227-31 (1943).—  
As<sup>+++</sup> and Sb<sup>+++</sup> were titrated potentiometrically with  
Ce(SO<sub>4</sub>)<sub>2</sub> by using Pt and HgCl<sub>2</sub> electrodes. A CO<sub>2</sub> stream  
was bubbled through the soln. Sb<sup>+++</sup> can be titrated in  
a slightly acidic soln. in the presence of a little As<sup>+++</sup>,  
and the latter can then be titrated after addn. of ICl.  
If the As exceeds that of Sb (up to 30 times), the titration  
is carried out in the presence of ICl, 20% vol. H<sub>2</sub>SO<sub>4</sub>,  
and 40% vol. HCl. Procedure: Dissolve 0.5-1 g. sample  
in 20 ml. hot concd. H<sub>2</sub>SO<sub>4</sub> and boil. Add 60 ml. H<sub>2</sub>O  
and 15-20 ml. concd. HCl, and titrate the Sb<sup>+++</sup> at room  
temp. Pb, Si, Cu, Cd, Zn, and other constituents of  
alloys do not interfere. After the oxidation of Sb, dil.  
the soln. to 25 ml., add to a 60 ml. aliquot 10 ml. 0.005  
M ICl and 20 ml. concd. HCl, and titrate the As<sup>+++</sup> with  
Ce(SO<sub>4</sub>)<sub>2</sub>.  
Milos Hudlicky

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**Colorimetric study. II. Visual titrations of arsenic and antimony.** Rudolf Pihl. *Chem. Listy* 30, 10 24(1945); *cf. C.A.* 44, 5750d.—The method of Willard and Young (*C.A.* 27, 440d), which is based on the use of ferroin (Fe complex of *o*-phenanthroline) as indicator was found unfit for the formation of the Sb(V) complex of *o*-phenanthroline. *o,o'*-Dipyridyl was also unfit as an indicator. Sb was titrated successfully with  $Ce(SO_4)_2$  with methyl orange with or without small amts. of ICl as an indicator. Arsenic was titrated with both ferroin or methyl orange. In the mixt. of As and Sb, Sb is titrated first.  $Sb(V) + As(III) \rightarrow Sb(III) + As(V)$ . (1) *Large excess of Sb over As:* Titrate a 100-ml. sample contg. 30 ml. concd. HCl with methyl orange as indicator and note the Sb content. Add a few drops ICl soln. and titrate with methyl orange the Sb according to the above equation. (2) *Equal amts. of As and Sb:* Titrate a 100-ml. sample contg. 30 ml. HCl and 2.5 ml. concd.  $H_2SO_4$  (methyl orange). Add ICl and titrate again (methyl orange). (3) *Large excess of As over Sb:* Titrate a 100-ml. sample contg. 20 ml. concd.  $H_2SO_4$  and 10 ml. concd. HCl in the presence of ICl (methyl orange). Potentiometric titration is more satisfactory. M. Hudlický

PROCEDURES AND PREPARATION NOTES

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*Ch*

Calometric determination of copper and antimony. R. Mihal and T. Chlebovský (Charles Univ., Prague). *Collection Czechoslov. Chem. Commun.* 12, 485-511(1947)(in English).—Cu<sup>2+</sup> in 5-6 N HCl soln. is reduced to Cu<sup>+</sup> with a slight excess of CrCl<sub>2</sub> and the resulting soln. is titrated with Ce(SO<sub>4</sub>)<sub>2</sub>. The reduction and oxidation are followed potentiometrically with a Pt and a calomel electrode. To the CuSO<sub>4</sub> soln. add 40 ml. concd. HCl per 100 ml. of resulting soln. Bubble CO<sub>2</sub> for several min., then add freshly reduced CrCl<sub>2</sub> soln. dropwise. The potential will fall to -100 to -200 mv. After 5 min., titrate with Ce(SO<sub>4</sub>)<sub>2</sub>. The first jump in potential, which occurs after the addn. of a few drops, indicates oxidation of the remaining Cr<sup>2+</sup>; the second jump indicates oxidation of the Cu. Sb, Pb, Ni, Mn, Zn, Co, and As do not interfere. Sn interferes if the Cu:Sn ratio is greater than 7:1. HNO<sub>3</sub> should be removed. If Sb is present and is to be detd., the soln. before reduction should contain 20 ml. concd. H<sub>2</sub>O<sub>2</sub> + 40 ml. concd. HCl per 100 ml. soln. After oxidation of the Cu, add 10 ml. 0.005 M ICl soln. per 100 ml. soln. and titrate to the next potential jump.

David Lewis

METALLURGICAL LITERATURE CLASSIFICATION

*Be cho.*

*C-1 Inorganic, Case 4  
1971*

2193. Gravimetric studies. III. Determination of copper and antimony. R. P[il] and T. Chlebovsky (*Chem. Listy*, 1947, **61**, 149-154).—Slight excess of aq.  $\text{CeCl}_3$  is added to a solution of  $\text{Cu}^{II}$  in 8-10%  $\text{HCl}$  to reduce  $\text{Cu}^{II}$  to  $\text{Cu}^I$ , and the solution is titrated potentiometrically with 0.1N  $\text{Ce}(\text{SO}_4)_2$ , when sharp breaks in the titration curve indicate the end-points of titration of  $\text{Cr}^{II}$  and  $\text{Cu}^I$ ; Ni, Co, Mn, Zn, Pb, Sb, As, and  $\text{SO}_3^{II}$  do not interfere. Cu and Sb present in the same solution may be determined by a single titration, when the solution contains 40 ml. of conc.  $\text{HCl}$  and 20 ml. of conc.  $\text{H}_2\text{SO}_4$  per 100 ml., and using  $\text{ICl}$  as a catalyst for oxidation of  $\text{Sb}^{III}$ .  
R. Tuzecov.

*B. Ab.*

*Gen. Reagents and Japan  
(Gen. - Miscellaneous)*

4122. Use of Complexones in chemical analysis. I. R. Pribl  
 (Coll. Trav. chim. Tchécosl., 1949, 2A, 320-323).—Derivatives of  
 aminodiacetic acid, such as nitrilotriacetic acid, uramidodiacetic  
 acid, and ethylenediaminetetra-acetic acid, and derivatives of  
 phenylamino-diacetic acid, form very stable complexes with a no.  
 of cations. Such complexes of cations which form oxidation-  
 reduction systems (Fe, Co, Mn) have low redox potentials and the  
 potentiometric determination of Co and Mn is possible by using  
 $\text{Ce}(\text{SO}_4)_2$  in acid solution, and  $\text{K}_3[\text{Fe}(\text{CN})_6]$  in alkaline medium,  
 respectively. By using hot  $\text{K}_2\text{Cr}_2\text{O}_7$  in neutral or weakly acid  
 solution to oxidize complexes with the  $\text{Na}_2$  salt of ethylenediamine-  
 tetra-acetic acid ("Complexone III"), Mn can be determined in  
 presence of Co and other metals. The determination of  $\text{Mn}^{III}$  in  
 presence of other metals is also possible by reduction of the complex  
 with  $\text{FeSO}_4$  or  $\text{K}_3[\text{Fe}(\text{CN})_6]$ ; either potentiometrically or visually.  
 Oxidation in the trivalent state is carried out with  $\text{PbO}_2$  or Na  
 bismuthate. Co can be determined in a similar manner; it is  
 oxidized when hot with  $\text{K}_2\text{Cr}_2\text{O}_7$ , the complex with  $\text{Mn}^{III}$  being  
 quantitatively decomposed. The reduction is carried out at 60°  
 with  $\text{CoCl}_2$  or  $\text{TiCl}_3$ . Ethylenediaminetetra-acetic acid can be used  
 for the colorimetric determination of Cr, Co, Fe, Ti, and Mn. By a  
 method of differential photo-colorimetry Mn, Co, and Cr can be  
 determined in presence of each other. The application of "Com-  
 plexones III" to microchemical reactions is discussed; in weakly  
 ammoniacal media Co can be detected in presence of Ni. Similarly  
 $\text{H}_2\text{O}_2$  oxidizes Co and Ni in presence of "Complexone III" so that  
 Mn can be detected. Special interest attaches to Mg. In presence  
 of Cd, Ni, Co, Cr, or Mn,  $\text{Mg}(\text{OH})_2$  only is pptd. after addition of  
 $\text{KOH}$  and  $\text{BaCl}_2$  or  $\text{SrCl}_2$ . The presence of such  $\text{Mg}(\text{OH})_2$   
 is conveniently demonstrated by the use of Ti-yellow, which is  
 strongly adsorbed. Complexones can also be used in gravimetric  
 analysis, tungstates and molybdates are not held as complexes and  
 can be pptd. with 8-hydroxyquinoline in presence of various  
 cations. U (as uranyl salt) does not form a complex, and Be is  
 pptd. quantitatively as hydroxide or phosphate. I. R. Pribl.

CA

Use of complex ions in chemical analysis. II. Ceri-  
metric determination of cobalt. R. Pihl and V. Malický  
(Charles Univ., Prague, Czech.). *Collection Czechoslov.  
Chem. Commun.* 14, 413-26(1949); *C.A.* 44, 909d.—  
Titrate a neutral soln. contg. less than 30-5 mg. Co/100  
ml., 0.5% [ $-\text{CH}_2\text{N}(\text{CH}_2\text{CO}_2\text{H})(\text{CH}_2\text{CO}_2\text{Na})_2$ ], and 1%  
Ca(OAc)<sub>2</sub> potentiometrically with 0.1 N Ce(SO<sub>4</sub>)<sub>2</sub>, mea-  
suring the potential 2 min. after each addn. for large and  
4-5 min. for small amts. of Co. Cu, Cr, Zn, Al, Fe<sup>+++</sup>,  
Mg, and Ca do not interfere; Ni and Mn do.

Use of complex ions in chemical analysis. III. Oxidi-  
metric determination of manganese by ferricyanide. R.  
Pihl and V. Simon (Charles Univ., Prague). *Collection  
Czechoslov. Chem. Commun.* 14, 454-68(1949)(in Eng-  
lish); cf. *C.A.* 44, 2433k.—Mn is detd. by adding soln.  
A under the C<sub>6</sub>H<sub>6</sub> layer of soln. B and potentiometrically  
titrating with 0.1 N K<sub>3</sub>Fe(CN)<sub>6</sub>. Vanadate ions interfere;  
Ni, Cd, Zn, Cr, Al, Ti, Mg, Mo, W, Co, and the alk.  
earth metals do not. Cu must be removed by H<sub>2</sub>S or Fe  
first. Soln. A: To unknown add 5-10 ml. NH<sub>4</sub>SO<sub>4</sub>, 10-20  
ml. 5% di-Na salt of (CH<sub>3</sub>N(CH<sub>2</sub>CO<sub>2</sub>H)<sub>2</sub>)<sub>2</sub>, 10-20 ml.  
0.1 N K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>. Boil and cool. If Fe is present, reduce  
the Fe<sup>+++</sup> with Zn and filter. If both Fe and Co, add 1-  
1.5 g. Na<sub>2</sub>SO<sub>3</sub> before cooling, boil with NaHCO<sub>3</sub>, and cool.  
Soln. B: Mix 20 ml. 10% NH<sub>4</sub>Cl, 50 ml. concd. NH<sub>4</sub>OH,  
5 g. CaCl<sub>2</sub>. Cover with C<sub>6</sub>H<sub>6</sub> and pass N through for  
15 min. Add 2 g. KCN to a little H<sub>2</sub>O. J. H. S.



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Use of complex ions in chemical analysis IV. Reductometric determination of trivalent manganese. R. Pbil and J. Horáček (Charles Univ., Prague). *Collection Czechoslov. Chem. Commun.* 14, 626-44 (1949) (in English); cf. *C.A.* 44, 7185j. —To an unknown soln. of trivalent manganese add 1-2 g. di-Na salt of  $(\text{CH}_3\text{N}(\text{CH}_2\text{CO}_2\text{H})_2)_2$  (D), 10 ml. HOAc, 0.5 g.  $\text{Ca}(\text{OAc})_2$ , and make up to 60 ml. Mix well with 0.5-1 g.  $\text{PbO}_2$  for 1-1.5 min. and filter quickly through a sintered-glass filter. Transfer to a glass-stoppered flask, add 1.2 g. KI and after 5-10 min. in the dark titrate with  $\text{Na}_2\text{S}_2\text{O}_4$ .  $\text{Cu}^{2+}$ ,  $\text{Fe}^{3+}$ , Al, Mg, Pb, and Zn ions do not interfere. Small amts. of Co do not conceal the endpoint. The filtered soln. can be rapidly titrated with  $\text{Fe}(\text{NH}_4)_2(\text{SO}_4)_2$  potentiometrically. Alkali,  $\text{Cl}^-$ ,  $\text{NO}_3^-$ , Cu, Pb, Zn, Ni, Al, and  $\text{Cr}^{3+}$  do not interfere;  $\text{Fe}^-$ , W, Mo, V, Co, and large amts. of  $\text{SO}_4^{2-}$  and  $\text{PO}_4^{3-}$  do. Larger amts. of I minimize several of these interferences. John Howe Scott

*Original Method  
J. L. ...*

3010. Use of complexes in chemical analysis. V. The chromometric determination of trivalent cobalt. R. Páruš and J. Svoboda (*Coll. Czech. Chem. Commun.*, 15, 31, 1950). The influence of reducing agents on the complex of  $Co^{3+}$  with ethylenediamine tetra acetic acid was investigated. It was found that this complex is quantitatively reduced to the corresponding  $Co^{2+}$  complex by  $CoCl_2$  in acid. On the basis of this reduction a new potentiometric method for the determination of Co has been worked out. This method is applicable in the presence of elements not reduced by  $CoCl_2$  under the conditions of the expt., e.g. Mn, Ni, Zn, Cr, Al. Procedures for the determination of both Co and Fe in one sample have been worked out. (5 tables)

3009. Use of complexes in chemical analysis. VI. Colorimetric determination of chromium. R. Páruš and J. Křiváková (*Coll. Czech. Chem. Commun.*, 15, 42, 1950). A new colorimetric method for the determination of Cr has been worked out based on the formation of a purple red complex between  $Cr^{3+}$  and ethylenediamine tetra acetic acid. The determination is best carried out photolorimetrically on a Lange colorimeter or spectrophotometrically on a Coleman spectrophotometer at a wavelength of 550 m $\mu$ . Accurate determinations of Cr may be carried out by this method in the relatively wide range of concentrations from 0.1 mg. to 8.0 mg. of Cr/100 ml. soln. Elements such as Zn, Al, Mg and Mn, which do not form colored complexes with ethylenediamine tetra acetic acid, do not interfere with the determination. A procedure for carrying out this determination of Cr in the presence of Fe, Ni and Co has been worked out. (2 figs., 3 tables)

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Complexons in chemical analysis. VII. Determination of molybdenum by means of 8-hydroxyquinoline. R. Pihl and M. Malát (Charles Univ., Prague). *Collection Czechoslov. Chem. Commun.* 15, 120-31(1950)(in English); cf. C.A. 44, 10507i; following abstr. - Mo (VI) is pptd. by 8-hydroxyquinoline (I) in a soln. contg. the di-Na salt of  $(CH_3N(CH_2CO_2H)_2)_2$  (II) and a buffer prepd. from 3 pts. 50%  $NH_4OAc$  and 4 pts. 50%  $HOAc$ .  $Fe^{+++}$ , Al, Be, Zn, Ni, Co, Mn, Pb, Cd, Bi, Cu, and Hg<sup>++</sup> do not interfere.  $Cu^{++}$  and  $Fe^{+++}$  can be detd. also by addn. of more I after making alk. with  $NH_3$ . Ti must be removed as the hydroxide before detg. Mo. W, V, and U interfere with the detn. Mo in the presence of U is pptd. by I and  $NaOH$ ;  $HOAc$  contg. II, then the U is pptd. by more I and  $NaOH$ ; only W and V interfere. VIII. Gravimetric estimation of beryllium. R. Pihl and K. Kucharský. *Ibid.* 132-40.— Add  $NH_3$  to 80-120 ml. of a soln. contg. 50-80 mg. of Be and any amt. of Al until pptn. of hydroxides begins, dissolve the ppt. with  $HCl$ , add 0.5 g.  $NH_4Cl$  and, for each 27 mg. of Al, 2 ml. of a soln. prepd. by dissolving 29.21 g.  $(CH_3N(CH_2CO_2H)_2)_2$  (I) in 40 ml.  $H_2O$  and making alk. to methyl red with  $NH_3$ . Ppt. the  $Be(OH)_2$  with 15-20 ml. 14%  $NH_4OH$ , allow to stand 2-3 hrs., filter, and wash with 100-150 ml. hot  $NH_4NO_3$  made neutral with  $NH_3$ . Al is detd. in the filtrate by addn. of  $HCl$  and  $KClO_4$  to destroy I, boiling out the Cl, and pptn. with  $NH_4OH$ . Phosphate is first pptd. with  $(NH_4)_2MoO_4$ . Both metals in mixts. of Be with Fe or Cr can be detd. in the same manner except the complexn. must be boiled and cooled to ensure complete complexing. Ti. Large amts. of V interfere while Pb, Bi, Cu, Cd, Co, Ni, Mn, and Zn do not. J. H. Scott

1957

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**\*Use of Complexones in Chemical Analysis. VIII.—The Gravimetric Estimation of Beryllium.** R. Píbil and J. Kucharáky (*Coll. Tráv. Čhim. Technol.*, 1950, 15, (3/4), 132-145).—[In English]. Cf. *ibid.*, p. 120; *Met. Abs.*, this vol., p. 203. The influence of  $\text{NH}_4\text{OH}$  on metal complexes with complexone (ethylenediamine tetra-acetic acid) has been studied, and it has been found that the one formed by Be is unstable, the  $\text{Be}(\text{OH})_2$  being quantitatively precipitated. This fact enables Be to be readily separated from Cu, Pb, Cd, Bi, Fe, Al, Cr, Mn, Zn, Ni, and Co. 20 references. —F. M. L.

6 Nov. 1953

BC.

Use of complexes in chemical analysis. X. Colorimetric determination of manganese. R. Pfabl and R. Hornychová (Charles Univ., Prague). *Collection Czech. Chem. Commun.* 15, 426-62 (1950) (in English).—See C.A. 45, 5064f.  
 Alfred Hoffman

1033. Use of complexes in chemical analysis. XI. Gravimetric determination of titanium. R. Pfabl and P. Schneider (*Coll. Trav. Chim. Technol.*, 1950, 15, 596-602).—Ti is determined gravimetrically as  $TiO_2$  by pptn. with aq.  $NH_3$  in presence of complexone III (ethylenediaminetetra-acetic acid). The stable complexes formed by Fe, Al, and other heavy metals (except Ti) with complexone are not precipitated with aq.  $NH_3$ . Presence of Mn necessitates a double pptn., whilst Cr should be present as alkali chromate. A procedure for determining Ti, Fe, and Al simultaneously in bauxite is detailed.  
 W. J. BAKER

CA

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**Bromometric determination of arsenic and antimony.**  
R. Píbil and J. Čihálik (Charles Univ., Prague). *Chem. Listy* **44**: 224-6 (1950); cf. *C.I.* **44**, 6750J. - Arsenic and Sb are both oxidized by  $KBrO_3$  in acidic soln. In the presence of  $HCl$  As is titrated preferentially. A sample of As and Sb(III) is acidified with  $HCl$  so as to contain 25-30 ml. concd.  $HCl$  in 100 ml. soln., 10 ml. of 0.005  $M$   $HCl$  is added, and the soln. is titrated with 0.1  $N$   $KBrO_3$ .  $H_2SO_4$  interferes slightly at concns. higher than 10 ml. per 100 ml. of soln., and it is recommended that the excess be neutralized. The method is suitable for detg. As and Sb in alloys.  
M. Hudlíček

13922\* Use of Complexones in Chemical Analysis. (In English.) Part XII. Determination of Tungsten by Means of 8-Hydroxyquinoline. R. Pribil and V. Sedla. Part XIII. Potentiometric Determination of Certain Cations by Means of "Complexone III" Solution. R. Pribil, Z. Koudela, and B. Matyska. Part XIV. Review of Some New Methods of Separation and Estimation. R. Pribil. *Collection of Czechoslovak Chemical Communications*, v. 16, Feb. 1, 1951, p. 69-91.

Part XII deals with the determination of tungsten as the oxinate and its separation from other elements. Part XIII describes direct potentiometric titration of ferric iron and an indirect titration of Al, Cd, Pb, Zn, Cu, and Bi. A procedure is given for the complexometric estimation of Fe and Al in the presence of each other. Part XIV describes reactions with some common compounds. Advantages of complexing reagents in quantitative analysis are demonstrated. 20 ref.

ASAC-31A METALLURGICAL LITERATURE CLASSIFICATION

13922

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**The use of complexes in chemical analysis XIII.**  
**Gravimetric determination of titanium.** Rudolf Pšibil and Petr Schneider (Charles Univ., Prague, Czech.). *Chem. Listy* 45, 7-10(1951); cf. *C.A.* 45, 6120. — Ti can be quantitatively pptd. with  $\text{NH}_3$  in the presence of complexon III [di-Na salt of  $(\text{HO}_2\text{CC})_2\text{N}(\text{CH}_2)_2\text{N}(\text{CH}_2\text{CO}_2\text{H})_2$ ] (I) from solns. contg.  $\text{Ti}^{IV}$ , Al, and  $\text{Fe}^{III}$ . Pptn. is carried out in the cold in the presence of  $\text{NH}_4\text{Cl}$  and requires 0.5-5 hrs. Fe and Al are detd. after the pptn. of  $\text{Ti}(\text{OH})_3$  and removal of the complexon with an equiv. amt. of  $\text{Ca}(\text{NO}_3)_2$ . Mn and Cr coppt. Hg, Cu, Pb, Bi, Cd, and Ni do not interfere. **Analysis of bauxite:** Fuse 0.5 g. bauxite with 3 g.  $\text{Na}_2\text{CO}_3$ , dissolve in HCl, remove  $\text{SiO}_2$ , add the complexon and neutralize the soln. with  $\text{NH}_3$ . Filter  $\text{Ti}(\text{OH})_3$  and ignite to  $\text{TiO}_2$ . **XIV. A survey of some new methods of determination and separation.** Rudolf Pšibil (Charles Univ., Prague, Czech.). *Ibid.* 85-7. — Applications of I and complexon I [ $\text{N}(\text{CH}_2\text{C}_4\text{H}_9)_2$ ] (II) in quant. sepn. of elements are described. Pb is held in complex with I in weakly acidic soln., while other elements are pptd. with  $\text{H}_2\text{S}$ . **Detn. of impurities in Pb.** From the soln. contg. I in AcOH, only Ag and Tl are pptd. with  $\text{I}^-$  while Pb, Bi, Cu, and  $\text{Fe}^{III}$  are held in complexes. Be, Ti, and  $\text{UO}_2$  are

pptd. with  $\text{NH}_3$  from the solns. contg. I. Mn can be sepl. from Ni, Zn, and Co after the pptn. from solns. contg. II,  $\text{H}_2\text{O}_2$ , and  $\text{Sr}^{++}$ . Ba and Ca are pptd. as  $\text{BaSO}_4$  and  $\text{Ca}(\text{CO}_3)_2$ , resp., from solns. contg. I and AcOH. Zn is sepl. from Ni and Mn by  $(\text{NH}_4)_2\text{S}$  pptn. from the solns. contg. II. A soln. contg. Zn, Ni, and Mn is treated with excess  $\text{NH}_3$ , salt of II, excess  $(\text{NH}_4)_2\text{S}$ , 3-5 ml.  $\text{C}_6\text{H}_5\text{N}_2\text{HCl}$ , and 0.5 g.  $\text{NH}_4\text{SCN}$ , boiled, allowed to stand 2 hrs., and the  $\text{ZnS}$  is filtered. **Sepn. of Zn from Ni and Co:** A soln. of Zn, Ni, and Co is treated with an excess of I,  $\text{NH}_3$ , and  $\text{H}_2\text{O}_2$ , boiled, cooled, treated with 0.5-1.0 g.  $\text{NH}_4\text{OH}$ , HCl,  $\text{NH}_3$ , and satd. with  $\text{H}_2\text{S}$ .  $\text{SrCl}_2\text{-ZnS}$  is redissolved and detd. as a pyrophosphate. **Sepn. of Zn, Mn, and Co from Ni:** A soln. contg. Ni, Co, Zn, or Mn is treated with 0.2-0.5 g.  $\text{NiH}_2\text{H}_2\text{O}$ , excess I, 5-10 ml. 10%  $\text{NH}_3$ , and satd. with  $\text{H}_2\text{S}$ .  $\text{CoS}$  is pptd. by the addn. of  $\text{CaCl}_2$  or  $\text{SrCl}_2$  and filtered after 30 min. Formation of complexes with I changes the half-wave potentials of metals. This fact is used for masking some elements, and permits the detn. of Tl in the presence of Pb and Cu by the polarographic method. M. Hudlická

1957



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Complexones in chemical analysis. XVa. Amperometric determination of bismuth and certain other metals. R. Pfabl and B. Matyska (Charles Univ., Prague). *Collection Czechoslov. Chem. Commun.* 16, 130-50 (1951) (in English); *C. I.* 45, 375k, 1012M; 46, 1380g. K. G. Stone

1952

CA

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**New possibilities of qualitative semimicroanalysis.** Rudolf Pjibil (Charles Univ., Prague, Czech.). *Chem. Listy* 45, 57-62 (1951).—In the presence of complexon III (di-Na salt of  $[(HO_2C)_2NCH_2]_4$ ) various cations at different pH are pptd. with  $Cl_2$ ,  $I_2$ ,  $CrO_4^{--}$ ,  $SO_4^{--}$ ,  $(COO)_2^{--}$ ,  $NH_3$ ,  $NaOH$ ,  $H_2S$ ,  $(NH_4)_2S$ ,  $Na_2S$ , and org. reagents such as *duhonor*, *Asquimolol*, *5-mercapto-3-phenyl-1,3,4-thiadiazol-2(1H)-thione*, and *Na diethyldithiocarbamate*. Procedures are given for the detection of Hg, Ag, Fl, Hg, Cu, Bi, Pb, Sb, W, Cd, Zn, As, Cr, Co, and Mn. M. Hudlicky

1957

PRIBL, Rudolf

CZECH

Use of complexons in chemical analysis. XVIII. Colorimetric determination of cobalt. Rudolf Pribl and Jih. Malik (Charles Univ., Prague). *Chem. Listy* 43, 237-9 (1951); cf. C.A. 45, 11823k. — A colorimetric detn. of Co is based on the formation of a purple complex of Co with complexon  $[\text{CH}_2\text{N}(\text{CH}_2\text{CO}_2\text{H})_3]$ . To a neutral soln. containg 0.1-0.5 mg. Co add some 5% soln. of complexon, 6 ml. 0.1N KOH, and 2 ml. 30%  $\text{H}_2\text{O}_2$ . Boil for 1 min., cool, dil. to 100 ml., and measure the absorption on a Coleman photometer at 540  $\text{m}\mu$ . In the presence of Mn, add 5 ml. of 10%  $\text{H}_3\text{PO}_4$  right after the boiling with  $\text{H}_2\text{O}_2$ . Cu, Ni, Cr, Fe interfere and have to be removed. N. F.

*[Handwritten initials]*

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Prof. Oldřich Tomálek. R. Phibil. *Chem. Listy* 45,  
425-7(1951).—A profile with portrait and bibliography of  
65 papers. M. Hudlický -

PRIBIL, RUDOLPH

Complexometric titrations (chelation). XXXI. Estimation of calcium ethylenediaminetetraacetate. Prantler, Huber, and Rudolph. Prakt. Chem. 1951, 24, 51, 1115a. Evaluation of  $(C_{10}H_{16}N_2O_8)_2Ca$  ( $Ca$  ethylenediamine) (I) is based on the detn. of  $H_2O$  by the thermogravimetric method or by titration according to K. Fischer, and an chelometric titration which allows the detn. of free  $Ca$ , total amt. of  $Ca$ , and total amt. of I with methyl thymol blue (II) as indicator. Two-hundred-309 mg. I is dissolved in 10 ml.  $H_2O$ , 3-5 drops 0.1% aq. soln. of II, and 5 ml. 0.1M NaOH are added. If free  $Ca$  is present, the original yellow color turns blue. In this case, 0.01M I is added until a smoky-gray color is reached. If free  $Ca$  is absent, the blue color is obtained immediately after the addn. of NaOH. For that case,  $(C_{10}H_{16}N_2O_8)_2Ca \cdot H_2N_2$  (III) is detn. by titration with 0.01M  $CaCl_2$  to blue coloration.  $NH_4CO_3$  (0.5 ml.) then is added followed by 0.20 g.  $(C_{10}H_{16}N_2O_8)_2Ca$  and the lemon yellow soln. is titrated with 0.05M  $Et_3CNH_2$  until a blue color is reached (detn. of I). To det. total  $Ca$ , 1 drop 0.05M III is added which changes the blue color back to yellow, 10 ml. 20%  $NH_4OH$  is added, and  $Ca$  is titrated with 0.05M III until blue changes to smoky gray.

M. Hudlitzky

6

Prantler, Huber, and Rudolph

PRIBIL, R.

Pribil, R. Zaklady chemické analýzy kvalitativní. (Dotisk 1. vyd.) Praha, Státní pedagogické nakl., 1952. 110 p. (Foundations of chemical qualitative analysis. Tables)

SO: Monthly List of East European Accessions, L C, Vol. 3 No. 1 Jan. '54; Uncl.

PEIBL, R.

Spectrophotometric determination of cobalt. R. Prilal and J. Jenik (Charles Univ., Prague); *Šrobník Československé Pražské Konf. Anal. Chem.* 1, 82-4 (1962) (Pub. 1963).

Co is detd. by pptn. with diethylthiocarbamate (I), extd. with EtOAc, and colorimetry of EtOAc layer at 410 m $\mu$  read with a Coleman spectrophotometer or a Fisher filter photometer. Pyrocatechol-3,5-disulfonic acid (II) was used to mask Fe, Ti, Cr, Al; and Na<sub>2</sub>P<sub>2</sub>O<sub>7</sub> to mask Mn. The interference of Cu and Ni can be removed by extn. with KCN soln., or better with HgCl<sub>2</sub> soln.; Hg displaces Cu, but not Co, from its colored complex with I, forming a white Hg complex. Mo, W, V, and U do not interfere. The procedure is as follows: After dissolving the sample, the soln. is made up to 250 ml. Then 2 ml. is pipetted into a separatory funnel. Four ml. of a 2% soln. of II is added, 1 ml. 12% Na<sub>2</sub>P<sub>2</sub>O<sub>7</sub>, a few drops NH<sub>4</sub>OH to make just alk., and 3 ml. 5% soln. of I. This is extd. with 25 ml. EtOAc. The EtOAc layer is washed with H<sub>2</sub>O, then with H<sub>2</sub>O to which has been added 1.5 ml. 2.5% HgCl<sub>2</sub>. The EtOAc layer is made up to 25 ml. with EtOH, and its color read.

H. Newcombe

PH

SMW

PRIBIL, R.

8

~~CH~~ Reductometric determination and proof of silver. R. Pribil, V. Simon, and I. Doležal (Inst. Anal. Chem., Kármánova Univ., Prague), Sborník V. Československé Konf. Anal. Chemiků (Prague) 1952, 60-5 (Pub. 1953).—The  $Pc^{++}$  complex with ethylenediaminetetraacetic acid (I) at pH 4-6 reduces Ag salts to elemental Ag. This reaction has been used for potentiometric, polarographic, and spot-test detn. of Ag in concn. above 0.001M. Best results are obtained with Ag/I ratios 1-2. Hg(I), Hg(II), Au(III), Pt(IV), and Pd(II) interfere. Herbert Morawetz

AA  
PM



PRIBIL, R.

CH <sup>V</sup> Polarographic determination of vanadium. R. Pribil and  
 M. Kopanica (Karlova Univ., Prague). *Sborník Československé  
 akademie věd, Přírodní vědy, Chemie (Prague)* (1952), 74-81  
 (Pá). - 1953). - Ethylenediaminetetraacetic acid (I) does  
 not complex V(V) in ammoniacal soln. and this permits the  
 polarographic detn. of V (cathodic half-wave potential  
 -0.17 and -1.25 v. against a satd. calomel) in the presence  
 of heavy metals complexed with I. In high concn. I slightly  
 reduces the height of the V half-wave and the use of 1,2-  
 diam. nocyklohexane-*N,N,N',N'*-tetraacetic acid (II) is,  
 therefore, preferred. In borate buffers, the polarographic  
 reduction proceeds in 2 distinct steps V(V) → V(IV) → V(III)  
 at -1.25 and -1.55 v. Addn. of I does not alter the twin-  
 wave character, but with II reduction takes place in a single  
 step (-1.22 v.). Pb salts in borate contg. II show 2 re-  
 duction waves (-1.45 and -1.82 v.) probably due to  
 Pb-borate-II complexes. The use of pyrocatechol-3,5-di-  
 sulfonic acid (III) does not permit the detn. of V in the pres-  
 ence of Fe in ammoniacal soln., but in strong alkali V can  
 be detd. in the presence of a 30-fold excess of Fe complexed  
 with III at the anodic half-wave potential -0.43 v. char-  
 acterizin; V(IV) → V(V).  
 Herbert Morawetz

Handwritten initials or marks.

Příbil, R.

6

✓ Complexometric titrations in pharmaceutical analysis.  
R. Příbil, J. Čihálek, I. Doležal, V. Šimon, and J. Zýka.  
*Práce Ústavu Průmysl. Konf. Anal. Chemiků* 1, 217-20 (1962) (Pub. 1953); cf. *C.A.* 49, 2985c.—Zn, Mg, and Ca salts are directly titrated in solns. contg. sufficient  $\text{NH}_4\text{Cl}$  and  $\text{NH}_4\text{OH}$  with di-Na ethylenediaminetetraacetate (I) with Eriochrome Black T as an indicator. Hg and Al salts are dissolved in excess of I. The unreacted I is titrated with  $\text{ZnSO}_4$ .  
Nicholas Feldman

4

PRIBEL, R.

4  
4E3A  
4E4

4748  
Czechoslovakia  
The Use of Complexones in  
Chemical Analysis  
Determination of Calcium<sup>2+</sup>  
Chem. Listy, 46, 331-337, 1932  
R. Prihel  
L. Fiala

NS  
MB

11

Electrochemistry - 4

CA

New complex-forming compounds in polarography. I.  
1,2-Diaminocyclohexane - *N,N,N',N'*-tetracetic acid.  
Rudolf Pflügl, Zdeněk Roubal, and Jindřich Svátek (Charles  
Univ., Prague; Czech.). *Chem. Listy* 46, 320-400 (1952).—  
Half-wave potentials of Pb, Cu<sup>2+</sup>, Bi, Cd, Tl<sup>+</sup>, As<sup>3+</sup>, Sb<sup>3+</sup>,  
Sn<sup>2+</sup>, Mo<sup>6+</sup>, Zn, Ni, Co, Mn, Fe<sup>3+</sup>, Cr, W<sup>6+</sup>, Ti<sup>3+</sup>, and UO<sub>2</sub>  
were detd. in various solns. in the presence of 1,2-diamino-  
cyclohexane-*N,N,N',N'*-tetracetic acid. The half-wave po-  
tential shifts can be used for masking some cations in the  
polarographic detas. Cu, Bi, and Tl can thus be detd. in  
the presence of excess Pb without removing the Pb chemi-  
cally. M. Hudlický

CA

*Pharmaceuticals, Cosmetic  
Perfumes '7*

Polarographic determination of zinc in insulin. R. Pital

and Z. Roubal (Pharm. and Biochem. Research Inst., Prague, Czech.). *Chem. Listy* 46, 492-3(1952).—Zn can be detd. polarographically in 4 N NH<sub>4</sub>OH solns. of insulin. Cryst. insulin 0.1 g. is dissolved in 4 N aq. NH<sub>4</sub>OH, the soln. dild. to 25 ml., 5 ml. aliquot pipetted into the Kalousek cell, dild. with 4 N NH<sub>4</sub>OH to 10 ml., 2 drops of 0.5% gelatin soln. are added, and, after passing N<sub>2</sub> through the soln., the soln. is polarographed. M. Hudlický

FRIBIL, R.

2

Chemical Abstracts  
Vol. 48 No. 5  
Mar. 10, 1954  
Pharmaceuticals, Cosmetics, and  
Perfumes

The complexometric titrations in pharmaceutical analysis.  
I. The determination of mercury. R. Frihl, et al. (Univ. Prague). *Českoslov. farm.* 2, 38-43(1953).—Hg was transformed to a solid complex with an excess of di-Na ethylene diaminetetraacetate (I). The excess of I was titrated with ZnSO<sub>4</sub>, Eriochrome Black T was used as indicator. Various Hg salts were estd. in pharmaceuticals. II. The determination of mercury. *Ibid.* 2, 76-7.—Further Hg salts were detd. The detn. of Hg in mercuric oxycyanide was unsuccessful. III. Determination of zinc. *Ibid.* 113-15.—Zn salts were titrated with 0.1M I; Eriochrome Black was used as indicator. IV. Determination of calcium. *Ibid.* 2, 147-9.—Ca<sup>++</sup>, easily forming a complex with I, was directly titrated by the same method as Zn. D. Hubřková

*PRIBIL, R.*

*CZECH PRIBIL, R.*

757. Compleximetric titrations in pharmaceutical analysis. V. Determination of magnesium. R. Pribil, J. Čihálik, J. Doležal, V. Šimon and J. Zýka. *Česká Farmac.*, 1953, 2 (6), 184-185; *Referativnyi Zh. Khim.*, 1954, Abstr. No. 20,359).—Magnesium sulphate or chloride is dissolved in water and, after the addition of 5 to 8 ml of buffer soln. at pH 10 and Eriochrome black T indicator, titrated with 0.1 M soln. of complexone III to a steel-blue colour. Magnesium hydroxide is dissolved in excess of buffer soln.; MgO and MgCO<sub>3</sub> are dissolved in the minimum quantity of conc. HCl, and the buffer and indicator are then added. Magnesium can be determined in mixtures with Na<sub>2</sub>SO<sub>4</sub>, NaCl, Na<sub>2</sub>CO<sub>3</sub>, sucrose or citric acid; the error is ± 0.80 per cent.

E. HAVES

*MA  
TNET*

*CHARLES UNIV., PRAGUE*

PRIBIL, R

✓ Complexometric titrations in pharmaceutical analysis.  
VI. Determination of aluminum. R. Pribil, et al. (Univ. Prague). *Českoslov. farm.* 2, 225 (1957); cf. *C.A.* 48, 2985e.—Salts which contain 30–150 mg. Al are dissolved in 20 ml. of water and an excess of complexon III (disodium salt of ethylenediaminetetraacetic acid) in 0.1N soln. is added, followed by 1 drop of methyl red. The soln. is neutralized with  $\text{NH}_3$  and 2–3 ml. of a buffer soln. pH 10 ( $\text{NH}_4\text{OH}$  and  $\text{NH}_4\text{Cl}$ ) is added; the excess of complexon is back-titrated with 0.1N  $\text{ZnSO}_4$  to a red color with Eriochrome Black T as indicator. A blank must be titrated. Hubik

med



PRIBIL, R.

PRIBIL, R.; ROUBAL, Z.; SVATEK, E.

New complex-forming reagents in polarography. Part 1. 1,2-diaminocyclohexane-N,N,N',N'-tetra-acetic acid. Introduction [in English with summary in Russian]. Sbor.Cekh.khim.rab. 18 no.1:43-52 F '53. (MLRA 7:6)

1. Department of Analytical Chemistry, Charles University, and Pharmaceutical and Biochemical Research Institute, Prague.  
(Polarograph and polarography) (Chemical tests and reagents)  
(Acetic acid)

PRIBIL, R.

Polarographic determination of zinc in Insulla. R. c  
Přibil and Z. Roubal (Pharm. Biochem. Research Inst.,  
Prague), Collection Czech. Chem. Commun. 18, 346-9  
(1953).—See C.A. 46, 11580i. B. H.

PRIBIL, R.

Metallurgical Abstracts  
July 1954  
Analysis

Dept. Analytical Chem., Charles V. Praeger

5

③  
\*Use of Complexones in Chemical Analysis. XXXVI.—A  
New Qualitative Test for Silver. R. Pribil, J. Doležal, and V.  
Simon. *Coll. Czechoslov. Chem. Commun.*, 1953, 18, (6), 780-  
782.—[In English]. Cf. *ibid.*, 1951, 16, 673; *M.A.*, 20, 882.  
A spot test is described for the detection of Ag. The reducing  
power of FeSO<sub>4</sub> is increased by the addn. of a soln. of Na<sub>2</sub>  
ethylenediaminetetraacetate (complexone III), the complex  
formed between the latter and Fe<sup>3+</sup> ions being much more  
stable than the corresponding complex formed with Fe<sup>2+</sup> ions,  
the most favourable conditions being at pH 3-5. One or two  
drops of complexone III are placed on a spotting plate, one  
or two drops of Na acetate added as a buffer, one drop of the  
soln. to be tested, and finally one drop of FeSO<sub>4</sub> soln. A  
black or grey coloration indicates Ag. Limit of detection—  
~1 γ Ag.—L. D. H

*Pribil, R.*

2

**COMPLEXOMETRIC TITRATIONS (CHELATOMETRY).**

**1. INTRODUCTION AND REVIEW.** R. Pribil. Translated from Collection Czechoslov. Chem. Commun. 18, 783-97 (1953). 13p. (AERE-Trans-11/3/5/428)

(Ethylenediamine)tetraacetic acid can be used for the determination of Mg, Zn, Ni, Pb, Cd, Bi, and Al. The question of selective "masking" with KCN and "demasking" with chloral hydrate is discussed. Na diethyldithiocarbamate is used for selective precipitation before the complex formation. Some stepwise volumetric determinations are given as examples. (U.S.R.)

PRIBYL R.

Use of complexones in chemical analysis. XXXVII. Polarographical determination of calcium in biological material. p.189  
(Chemicke Listy. Vol. 47, no. 2, Feb. 1953) Czechoslovakia

SO: Monthly List of East European Accessions, Vol. 2, #8, Library of Congress,  
August 1953, Incl.

PRIBIL, R.

1884. Use of complexes in chemical analysis.  
XXXX. Colorimetric determination of cobalt in  
nickel and nickel salts. R. Pribil, M. Kobrnyk and  
J. Jenik, *Chem. Listy*, 1952, 86, 842-845.—  
The previously described method for the colorimetric  
determination of Co in the form of an ethyl  
acetate extract of Co diethyldithiocarbamate  
(Pribil *et al.*, *Chem. Listy*, 1952, 86, 803) has been  
adapted for the determination of Co in Ni and Ni  
salts. In the procedure,  $Ca^{++}$  liberates Co from  
the complex of Ni and Co exclusively; the Co is  
then pptd. with Ni diethyldithiocarbamate, extracted  
with ethyl acetate and determined colorimetrically  
at 425  $\mu$ . Procedure—Dissolve the Ni  
salt in a small amount of water, add an excess of  
5 per cent. soln. of complexone III, make alkaline

with  $NH_3$  and add 0.1 M  $Ca(NO_3)_2$  followed by freshly  
prepared 2 per cent. Na diethyldithiocarbamate  
(2 ml). Bring the soln. to the boil, extract the ppt.  
after cooling with 2 portions (15 and 10 ml) of  
ethyl acetate, wash the organic layer with a little  
water containing 2 per cent.  $HgCl_2$  (1 ml) in order  
to remove traces of Ni diethyldithiocarbamate,  
and make up to 25 ml with ethanol. G. GLAZER

Pribil, R.

1925. Use of complexones in chemical analysis.  
XL. Redoximetric determination of silver. R.  
Pribil, J. Dolal and V. Simon (*Chem. Listy*, 1925, 1017-1022). — Silver is determined potentiometrically and polarographically at pH 4 to 6.5 (at which the redox potential of the system  $Fe^{3+}/Fe^{2+}$  is 0.117 V) with  $FeSO_4$  in the presence of complexone III (D). *Procedure*—To 5 to 100 mg of Ag, add 0.1 M I in an amount corresponding to a Ag to I ratio of 1 to 1. Adjust the pH to 5 with an acetate buffer (5 to 10 ml), dil. to a Ag<sup>+</sup> concn. of 0.005 M and titrate with 0.1 M  $FeSO_4$ . Up to 200 mg of Pb, 80 mg of Cu, 80 mg of Bi and 50 mg of Cd do not interfere, provided sufficient I is added to bind these metals.  
G. GLAZER

FRIBIL, Rudolf

Chemical Abst.  
Vol. 48  
Apr. 10, 1954  
Analytical Chemistry

(2)  
Complexometric titrations (chelation). I. Survey and introduction. Rudolf Frišl (Farm. biochem. vřzkumaf řstav, Prague, Czech). -- *Chem. Listy* 47. 1173-83 (1953). -- A review. II. Screening of aluminum, iron, and manganese in titrations to murexide as indicator. *Ibid.* 1333-7. -- In the complexometric titrations of Ni and Ca with murexide as indicator,  $N(CH_2CH_2OH)_4$  (I) is used for screening Al, Fe, and small amts. of Mn. To a sample contg. Ni, Al, Fe, and Mn add 5-10 ml. 33% soln. of I, 30 ml. concd.  $NH_4OH$ , murexide, and titrate the soln. with 0.05N complexon III. To det. Ca in the presence of Fe, Al, Mn, and Mg, add 10-20 ml. I and 10 ml. 0.5N NaOH to slightly acidic sample freed from  $NH_4$  salts, before the titration with complexon. M. Hudlická



PRIBIL, Rudolf

Chemical Abst.  
Vol. 48 No. 8  
Apr. 25, 1954  
Analytical Chemistry

New complex-forming reagents in polarography. II. Pyrocatechol-3,5-disulfonic acid. Emil Svátek, Zdeněk Rouhal, and Rudolf Pribil (Farm. biochem. vězkumné ústav. Ústav. Czechoslov. Chem. Listy 47, 1472-5 (1953); cf. C.A. 46, 10900d. — Pyrocatechol-3,5-disulfonic acid (Tiron) is a suitable reagent for screening  $Fe^{2+}$  and  $Cu^{2+}$  in the polarographic detn. of other cations, e.g. Cu and Pb, in the presence of Fe, or Bi in the presence of Cu or Pb in the presence of Cu and Fe. Half-wave potentials of some metal complexes of 0.05M Tiron in 0.2N NH<sub>4</sub>OH and in 0.25N NaOH are given. M. Hudlický

CZECH

2641. Compleximetric titration in pharmaceutical analysis. VII. Determination of lead. R. Píbil, J. Čihálek, J. Doležal, V. Šimón and J. Zýva. *Czechoslov. Farmac.*, 1964, 3 (3), 84-88; *Referativnyi Zh. Khim.*, 1964, Abstr. No. 48,824.—Lead is determined in  $(\text{CH}_3\text{COO})_2\text{Pb}\cdot 3\text{H}_2\text{O}$ ,  $\text{PbO}$ ,  $2\text{PbCO}_3\cdot\text{Pb}(\text{OH})_2$ , lead plasters and ointments containing lead compounds by treatment with an excess of EDTA (disodium salt) and titration of the excess with  $\text{ZnSO}_4$  soln. A sample of a pure lead compound (50 mg) or of a lead-containing pharmaceutical preparation (0.2 to 0.5 g) is dissolved in 5 to 10 ml of 0.1 M EDTA (disodium salt) soln. and diluted to 20 ml; 5 ml of aq.  $\text{NH}_3$ - $\text{NH}_4\text{Cl}$  buffer soln. (pH 10) and Eriochrome black T indicator (mixture with NaCl, 1 + 200) are added and the solution is titrated with 0.1 M  $\text{ZnSO}_4$  soln. until the colour changes to wine-red. E. HAYES

FRIBIL, R.; CIHALIK, J.; DOLAZAL, J.; SIMON, V.; ZYKA, J.

Complexometric titration in pharmaceutical analysis. VII. Determination of insulin zinc. *Cesk. farm.* 3 no.7:242-244 Sept 54.

1. Z Ustavu pro chemii analytickou Karlovy university v Praze.  
Z Vyzkumneho ustavu pro farmacii a biochemii v Praze.  
(INSULIN, determination,  
zinc insulin, complex titration)

PRIBIL, R.

Complexometric titration (chelatology). Part 3. Disguise of aluminum, magnesium, and calcium with ammonium fluoride [in German with summary in Russian]. Sbor. Chekh. khim. rab. 19 no. 1: 64-68 F '54. (MLRA 7:6)

1. Nauchno-issledovatel'skiy institut farmatsii i biokhimii, Praga. (Chelates) (Volumetric analysis)

PRIBIL, R.

415. Complexones in chemical analysis. XXXVII. Polarographic determination of calcium in biological material. R. Pribil and Z. Roubal (*Coll. Czech. Chem. Commun.* 1953, 18, 252-257).—Ca is polarographically determined in urine and blood by a method based on the displacement reaction  $ZnY'' + Ca^{2+} = CaY'' + Zn^{2+}$  ( $Y'' = \text{complexonate}$ ). This reaction is quant. in 4 to 8 N aq.  $NH_3$ . Interference by Mg is prevented by pptg. it as  $MgNH_4PO_4$ . [This is a translation into English of a paper published originally in *Chem. Listy*, 1953, 47, 189.]  
D. R. GLASSON /

Pharmaceutical and Biochemical Research Inst., Prague

FRIBEL, R.

"Professor Oldrich Tomicek (1871-1953); an Obituary." p. 405,  
(COLLECTION OF CZECHOSLOVAK CHEMICAL COMMUNICATIONS. Sbornik chemicko-  
kminicheskikh rabot, Vol. 19, No. 3, June 1954, Praha, Czechoslovakia)

SO: Monthly List of East European accessions, (J.Sol.), LC, Vol. 4  
No. 5, May 1955, Uncl.

PRIBIL R

\*Complexometric Titrations (Chelatometry). V.-- The Masking of Aluminium and Iron by Titration Against Eriochrome Black T as Indicator. R. Pribil (*Coll. Czechoslov. Chem. Comm.*, 1954, 19, (3), 465-468; *ibid.*, (2), 253; *M.A.*, 22, 463). In the complexometric detn. of Mg, Zn, Cd, and Mn against Eriochrome Black T as indicator, pure triethanolamine can be used to mask Al.  $Fe^{3+}$  interferes because of its oxidizing action on the indicator. Small concentrations of Fe, however, can be masked with triethanolamine and KCN. Less-pure triethanolamine can be used for the detn. of Mg, if the traces of metallic impurities which the reagent contains are masked by means of KCN. --L. D. H.

NA  
JCH

PAIBIL, R.

358. Colorimetric determination of cobalt with sodium diethyldithiocarbamate. R. Příbil, J. Jeník and M. Kábrová (*Coll. Czech. Chem. Commun.* 1952, 19 [3], 470-476).--The intense green colour of ethyl acetate solutions of the inner complex salt of  $Co^{II}$  with diethyldithiocarbamate is used in a sensitive method for the colorimetric determination of Co. Conditions of specificity are established. The method is applied to Co determinations in steels and minerals. [This is a translation into English of a paper that was published originally in *Chem. Listy*, 1952, 46, 603.] D. R. GLASSON



PRIBIL, E.

**CZECH**

✓ New complex-forming reagents in polarography. II.  
Pyrocatechol-3,5-disulfonic acid. Emil Svatek, Zdeněk  
Roubal, and Rudolf Pribil (Pharm. and Biotech. Research  
Inst., Prague). *Collection Czechoslov. Chem. Commun.* 19:1  
674-7(1954) (in English).—See C.A. 48, 4356h. E. J. C. ]

PRIBIL, R.

CZECH

\*The Application of Complexones to Chemical Analysis. C4  
 XLIII.—A New Modification of the Iodometric Determination  
 of Manganese. R. Pribil and J. Vulterin (*Coll. Czechoslov.  
 Chem. Commun.*, 1954, 19, (6), 1150-1155).—[In German]. Cf.  
*Chem. Listy*, 1951, 43, 38. The use of the di-Na salt of 1:2-  
 diamminocyclohexano-*N, N', N'', N'''*-tetra-acetic acid as a com-  
 plexing agent in the detn. of Mn is described. In faintly acid  
 soln. in the presence of the reagent, Mn is oxidized by  $PbO_2$   
 to a fairly stable  $Mn^{3+}$  complex, and ions commonly present,  
 in particular  $Fe^{3+}$  and  $Ca^{2+}$ , form solid complexes and do not  
 interfere. The method has been applied to the detn. of Mn  
 in alloys, including ferro-Mn. After filtering off the  $PbO_2$ ,  
 the complex remains stable for 15-20 min. In this time the  
 Mn can be determined iodometrically or potentiometrically,  
 or the ruby-coloured complex is determined colorimetrically  
 at 500  $\mu$ . Comparative tests with E.D.T.A. as a complexing  
 agent showed that the complexes obtained were much less  
 stable.—L. D. H.

*[Handwritten initials]*

Pribil, R.

3

CZECH

\*Complexometric Titrations (Chelatometry). VIII--The Masking of Cations with 2,3-Dimercaptopropanol. R. Pribil and Z. Roubal (*Coll. Czechoslov. Chem. Commun.*, 1954, 19, (6), 1162-1170).—[In German]. Cf. *ibid.*, p. 1150; *M.A.*, 23, 1198. An alcoholic soln. of 2:3-dimercaptopropanol was used to mask a number of cations, such as Pb, Bi, Zn, Hg, etc. Undissociated salts completely or almost colourless in  $NH_4OH$  are formed, making possible a series of complexometric detn., for example the detn. of Ca and Mg in the presence of Pb and Bi. Advantage was taken of the different reactivities of the complexonates for the detn. in stages of, for instance, Pb in the presence of Mn, and Zn associated with Ni; by the use of other complexing substances—KCN and triethanolamine—as many as 4-5 cations could be determined in stages in the same soln. Examples given are mixtures of Pb, Co, and Mn, of Ni, Zn, and Mg, and of Pb, Zn, Ni, Mg, and Ca, Fe and Al being also present.—L. D. H.

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*[Handwritten signature]*

PRIBIL, R.

CZECH

Complexometric Titrations (Chelatometry). IX.—Contribution to the Determination of Nickel in the Presence of Cobalt. R. Pribil (*Coll. Czechoslov. Chem. Commun.*, 1954, 19, (6), 1171-1174) [In German]. Cf. *ibid.*, p. 1162; *M.A.*, 22, 1201. An indirect method is described for the detn. of proportionately small amounts of  $\text{Co}^{2+}$  in the presence of an excess of  $\text{Ni}^{2+}$ . A weakly acid soln. of a mixture of the salts is treated with a known amount of standard E.D.T.A., and the sum of the Ni and Co determined by the usual titration with standard  $\text{MgSO}_4$  soln. against Eriochrome black T. 2-3 ml. perhydrol are now added, a deep blue  $\text{Co-H}_2\text{O}_2$  complex being formed, which does not react with KCN. About 1 g. KCN is added, which releases an equivalent amount of E.D.T.A. from the Ni complexonate. This is finally titrated with standard  $\text{MgSO}_4$  to the original colour. On account of the depth of colour of the  $\text{Co-H}_2\text{O}_2$  complex, the method is suitable for Co concentrations of 3-15 mg. A modification is described for larger amounts of Co. The method can be applied to the detn. of Zn or Cd in the presence of Co; Al, if present, is masked by triethanolamine.—L. D. H.

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