TOM 161

INDEX MICROFILM REEL 161
(Original Designation C-93)

GENERAL SUBJECT

ANALYTICAL PROCEDURES

ANALYTICAL PROCEDURES USED THROUGHOUT I.G. FARBENINDUSTRIE PLANTS. INCLUDES MICRO, SPECTRAL, POTENTIOMETRIC METHODS, ORGANIC AND INORGANIC ANALYSES, MEASURING APPARATUS, ETC.

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Date:

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Reports on discussions of the analytical commission.

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Meeting of the analytical commission Nov. 32

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FRAME NOS.

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Determination of mono-, di- and triethylamine
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4.) Zusammenkuenfte der Anako
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Tausz and Rumm method for the determination of water,
Methyl chloride,
Bromaminsaeure (bromoamino acids),
Minium and lead superoxyde,
Bestimmung des Fluorgehaltes nach I.G.A. 472,
(determination of fluorine content according to I.G.A. 472).
The Burgess-Parr bomb,
Determination of 1,2-phenylendiamine,
Aldehydbestimmung nach Ponndorf,
(determination of aldehyde: Ponndorf's method)
Phenol and pyrocatechin in resorcine,
m-Toluidine and aniline in basic mixtures,
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3.) Vereinheitlichung der Siebanalyse (simplification of sifting analysis)

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FRAME NOS.

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Guaiacol
Ethyl- and Phenyl-alfa-naphthylamine
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4-nitraniline-2-sulfonic acid
Benzidine-3,3' disulfonic acid
Sodium salts of bensolmono- and
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Sodium nitrite
Determination of fluorine

II. Aliphatic series:

Carbon disulfide

III. Wetting agents (Netzmittel)

IV. Solvents (Loesungsmittel)

V. Benzene- & Naphthalene series:

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3-nitro-4-aminoanisol
Anisidine-4-sulfoacid
Acetoacetanilide

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Acetoacet-4-toluide
Acetoacet-2-aniside
O-chlorobenzoic acid
2-toluolsulfamide
4-toluolsulfamide
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3,5-dinitro-2-cresol
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13th discussion of analysts April 1929 241 - 260

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Potassium chloride
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4-anisidine
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Benzonitrile
Benzene sulfochloride
Benzyl-4-sulfanilic acid
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1,4-phenylenediamine-2-sulfonic acid
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4-nitrobenzoyl-aminonaphtholsulfonic acid 2,5,7
m-aminobenzoyl-aminonaphtholsulfonic acid 2,5,7
p-aminobenzoylaminonaphtholsulfonic acid 2,5,7
Benzoylaminonaphtholsulfonic acid 1,4,6
3-nitrophenylpyrazolone
4-sulfonphenyl-3-methyl-5-pyrazolone
Naphthenic acid
4-bromo-1-aminoanthraquinone-2-sulfonic acid

V. Prices of measuring apparatus
Analytical index
" methods
Electrical temperature measurement at the boiling point
Determination of melting points

FRAME NOS.

12th analytical discussion October 1928 261 - 272

I. Inorganic series:

1) Zinc fluoride
2) Calcium chloride
3) Sodium hypochlorite
4) Pyrites

II. Aliphatic series:

1) Formic acid and sodium formate
2) Crotonaldehyde
3) Turkey red oil
4) Castor oil
5) Dextrine
6) Amine determination

III. Benzene series:

1) 4-nitro-2-toluidine
2&3) 1,4-diformylphenylenediamine & 1,4-diacetyl-phenylenediamine
4) nitrosalicylic acid
5) Diazosalicylic acid
6) m-xylidinesulfonic acid
7) Crude xylidine
8) Gallic acid
9) 2,4-dinitroacetanilid
10) Benzyl aniline
11) Methyl diphenylamine
12) 2,5-toluylenediamine
13) Phenylhydrazinesulfonic acid
14) Cumidine

IV. Naphthalene and heterocyclic series:

1) Acetyl-H-acid
2) Imidazol-I-acid

V. New qualitative tests for manganese dioxide, lead dioxide, zinc dust, iron and naphthalene

VI. Miscellaneous

1) Determination of melting point
2) " — " tertiary bases
3) Nitroso-beta-naphthol sulfonates
4) Fluor spar
5) Buna rubbers
6) Qualitative requirements

7) Chemically pure preparations
8) Distillation with electrical recording of temperatures

11th meeting of analysts March 1928 275 - 285

I. Inorganic series:

1) Chromium ore and bichromate
2) Fluor spar, hydrofluoric acid, sodium fluoride
3) Calcium carbide
4) Permanganate
5) Phosphorite
6) Sulfuryl chloride
7) Thionyl chloride
8) Sulfur
9) Zinc oxide, zinc chloride, zinc liquors
10) Standardization of normal solutions
11) Sulphur chloride

II. Aliphatic series:

1) Butadiene
2) Sodium methylsulphate
3) Sodium ethylsulphate
4) Methylamine
5) Sodium acetate
6) Acetaldehyde
7) Oxalylchloride
8) Acetamide

III. Benzene series:

1) 3-monomethyltoluidine
2) 4- " "
3) 5- " "
4) 4- " "
5) 3-dimethyltoluidine
6) 4- " "
7) 3-diethyl toluidine
8) 4-diethyl "
9) 3-ethylbenzyl toluidine
10) 4- " "
11) 4-chloro-2- "
12) 5-chloro-2- "
13) 2-chloro-4- "
14) 2-chloro-4-toluidine sulfonic acid
15) 3-toluidine-4-sulfonic acid
16) 2- " -5- " "
17) 2,4-dichlorotoluol

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18) 3,4-dichlorotoluol
19) 1,2,3-trichlorobenzene
20) 1,2,4-trichlorobenzene
21) o-xylol
22) m- "
23) p- "
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IV. Naphthalene-, anthracene- and heterocyclic series

10th meeting of analysts, October 1927 286 - 298

I. Inorganic products.
II. Products of the aliphatic series.
III. Products of the benzene- and naphthalene series.
IV. Newer knowledge with qualitative research methods for iron powder, zinc dust, lead- and manganese dioxide.
V. Miscellaneous.

9th meeting of analysts, March 1927. 299 - 312

I. Technical products.
II. Products in connection with the special meeting 1926.
III. Products to be discussed for special reasons.
IV. New qualitative tests for manganese dioxide, lead dioxide, zinc dust, iron powder and naphthalene.
V. Miscellaneous.

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8th meeting of analysts, October 1926 320 - 335

I. Commercial products.
II. Continuation of systematic discussion.
III. New qualitative tests for manganese dioxide, iron powder, zinc dust and naphthalene.
IV. Methods to be discussed for special reasons.
V. Miscellaneous.

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I. Commercial products II. Systematic discussion. III. Newer qualitative tests for zinc dust, iron powder, manganese dioxide and lead dioxide. IV. Methods to be discussed for special reasons. V. Miscellaneous.	
6th meeting of analysts, October 1925	351 - 366
I. Discussions about thermometers for distillation and solidification point. II. Commercial products. III. Systematic discussion, IV. Newer qualitative tests for manganese dioxide, lead dioxide, zinc powder and iron powder. V. Methods to be discussed for special reasons. VI. Miscellaneous.	
5th meeting of analysts, April 1925	367 - 376
I. Commercial products. II. Systematic discussion. III. Newer qualitative tests. IV. Methods to be discussed for special reasons. V. Sampling (Probenahme). VI. Miscellaneous.	
4th meeting of analysts, December 1924	377 - 392
I. Commercial products. II. Systematic discussion.	
Programm fuer die 3. Analytiker-Besprechung am 18.3.24. i. Frankiurt. Program for 3rd analytic discussion 3-18-24, Frankiurt.	393 - 407
I. Besprechung des Rundschreibens Leverkusen vom 18. Jan. 25. Discussion of circular letter, Leverkusen of 18-1-25.	

FRAME NOS.

II. Unerledigtes aus der Besprechung vom Nov. 1922
Unsettled subjects from discussion of Nov. 1922.

1. Bericht ueber die Frage ob p-Toluidin gegenueber Anilin resp. Xylidin und m-Nitranilin gegenueber p-Nitranilin so erkebliche Vorzuege besitze, dass die alleinige Anwendung dieser beiden Basen Vorzuziehen ist.

Report re question whether p-toluidine compared with aniline and Xylidine and m-nitroaniline compared with p-nitraniline has such advantages as to recommend the use of these 2 bases for analysis.

2. Bericht ueber die Nachpruefung der Trennung der 2-6- und 2-8-Verbindungen nach der Jod- bezw. Kupplungsmethode.

Report re checking the separation of 2-6- and 2-8-compounds by iodine- as well as by coupling method.

3. Bericht ueber die Nachpruefung der Methoden zur Trennung von Schaeffer-und R-Salz an dem von Hoechst eingesandten Muster, vorherige Einsendung der Zahlen durch saemtliche Firmen.
Report re checking of methods for separation of Schaeffer- and R-salt on the sample from Hoechst.

4. Bestimmung von 1-8-Amidonaphtol-4-solfosaeure neben Dioxynaphtalin-4-sulfosaeure mit diazotiertem p-Toluidin.
Determination of 1-8-aminonaphthol-4-sulfonic acid compared with dihydroxy naphtalene-4-sulfonic acid with diazotized p-toluidine.

5. Bestimmung von p-Phenylendiamin, beruhend auf Reduktion von Chlorsilber.
Determination of p-phenylene diamine upon reduction of silver chloride.

6. Bestimmung von m-Phenylendiaminsulfosaeure, congosauer oder essigsauer.
Determination of m-phenylene diamine sulfonic acid, congo acid or acetic acid.

7. Bericht ueber die Untersuchung zur Beurteilung der Qualitaet von gemahlenem Eisen und Zikstaub.
   Report re examination to judge quality of iron powder and zinc dust.

8. Bestimmung des Gesamtzinks und Cadmiums im Zinkstaub.

   Determination of total zinc and cadmium in zinc dust.

9. Bestimmung von Amdio-J-Saeure nach Berliner Kupplungsmethode.

   Determination of amino-J-acid by coupling method, Berlin.

III. 1. Methoden zur Untersuchung von Kohlenwasserstoff, Nitro- und Amidoverbindungen.

   Methods for examination of hydrocarbon, nitro- and amino compounds.

   a) Destillationsprobe, Theoretisches, Ausfuehrung, Apparatur, Thermometer.

      Distillation test, theory, manufacture, machinery, theromometer.

   b) Erstarrungspunktbestimmung, Theoretisches, Ausfuehrung, Apparatur, Thermometer.

      Determination of freezing point, theory, manufacture, machinery, thermometer.

   c) Sonstige physikalische Konstanten.

      Other physical constants.

   d) Reduktion mit Zinnchloruer, Titanchloruer oder Bestimmung mit Nitrit.

FRAME NOS.

Besondere Methoden zur Untersuchung von

Special methods for examination of -

a) Benzene, toluene, xylol and naphthalene.

b) Nitrobenzene, nitrotoluene, nitronaphthalene, assay of di- and trinitro compounds.

IV. Analysenmethoden fuer Nitrierungen von Sulfosaeuren.

Analytical methods for nitrations of sulfonic acids.

a) 1-nitronaphthalene-5- and 8-sulfonic acid.

b) 1-nitronaphthalene-6, 7-sulfonic acid.

c) 1-nitronaphthalene-3-6-8-trisulfonic acid.

V. Zwischenprodukte fuer bunte Schwefelfarben.

Intermediary products for sulfur colors.

1) Dinitrohydroxy phenylamine.

2) p-amino phenol.

VI. Verschiedenes.

Various methods.

Benzidin oder Sulfanilsaeure zum Einstellen von Nitritloesungen.

Benzidine or sulfanilic acid for standardizing of nitrite solutions.

Ergebnis der 3. Analytiker-Conferenz am 12. Maerz 1924 408 - 410

Result of 3rd analytical meeting 3-12-24.

FRAME NOS.

Programm fuer die Analytiker-Besprechung
am 9/10. Nov. 1922 in Leverkusen.

Program for analytical discussion
11-9/10-22 Leverkusen. 411 - 432

A) Allgemeines

General.

1) Wahl der zu diazotierenden Amine fuer Kuppelungsanalysen mit Bezug auf bequeme Herstellbarkeit der Loesungen und der Diazoverbindungen, Kuppelungsenergie.

Selecting of diazotizing amines for coupling analysis.

2) Jodbestimmungen. Allgemeine Anwendbarkeit der Jodmethode, Angabe der verschiedenen Gruppen, die fuer diese Methode in Frage kommen.

Determination of iodine. General application of iodine method, information re various groups suitable for this method.

B) Spezielle Methoden.

Special methods.

1) R-Salzsulfierung.

R-salt sulphonation.

a) Bestimmung des Gesamtgehaltes durch Kupplung, Diazoverbindung, Konzentration, Sodamenge, Salzzusatz.

Determination of total content by coupling, diazo compound, concentration, amount of soda, addition of salt.

b) Trennung der 2.6- und 2.8- Verbindungen.

1) durch Kupplung
2) durch Jodebestimmung

Separation of 2,6- and 2,8- compounds.

1) by coupling
2) by determination of iodine.

c) Trennung vom 2.6 mono und 2.3.6 disulfosaeure

1) durch Extraktion der Natriumsalze mit Alkohol.

2) durch colorimetr. Pruefung mit Nitrit.

Separation of 2,6-mono- and 2,3,6-disulfonic acid -

1) by extraction of sodium salt with alcohol,
2) by colorimetric testing with nitrite.

2) 1,8-dihydroxy naphthalene-4-sulfonic acid

a) Determination of 1,8-dihydroxy compounds.
b) Separation of 1-naphthole-4,8-disulfonic acid.

1) by various diazo compounds,
2) by variation of alkalinity.

c) Separation of 1,8-dihydroxy naphthalene.

d) Determination of sulfonic acid.

3) m-phenylene diamine:

a) Determination of substance capable of coupling.
b) Determination of o-compounds.
c) Determination of p-compounds.
d) Qualitative testing methods.

4) m-toluylene diamine:

a) Determination of substance capable
b) Determination of isomers.
c) Qualitative testing method.

5) m-phenylene diamine sulfonic acid:

a) determination by coupling.
b) determination by isomers.

6) m-toluylene diamine sulfonic acid:

a) determination of nitrite
b) , determination by acidimetric method
c) " of iodine
d) " of sulfonic acid
e) qualitative testing.

7) B-naphthylamine sulfonic acid $\frac{2,5}{2,8}$:

a) Determination of total content and
b) of isomers.

8) 1-amino-8-naphthol-4-sulfonic acid:

Determination of content and purity.

9) Research methods for

a) rock salt and
b) for iron powder

10) Changing of methods for:

a) sulfur, sodium, raw smelting and
b) for zinc dust.

C) Analysenmethoden fuer die Untersuchung der Sulfierung von Kohlenwasserstoff. (Analytic Methods for examination of sulfonation of Hydrocarbon.)

1) Allgemeine Methoden zur Bestimmung der Zahl der eingetretenen Sulfogruppen. (General methods for determination of number of added sulfo groups.)

2) Analyse des Benzolmonosulfosauren Natriums. (Analysis of benzene monosulfonic acid sodium.)

3) Trennung und Bestimmung der isomeren Benzoldisulfosaeuren. (Separation and determination of isomeric benzol disulfonic acids.)

4) Trennung der Isomeren in der Naphtalinreihe.
(Separation of isomers in the naphthalene series).

a) α and β-monosulfonic acid:
Cleavage of sulfonic group.
Determination of β-acid as Co- or Ni- salt.
Determination of β -acid as tolidine salt.

b) Disulfonic acid:
Determination of 1,5 acid (indirect) by determination of sulfur, by precipitation as tolidine salt.
Separation of 1,5 and 1,6-acid.
Determination and separation of 2,6- and 2,7-acid.
Determination of 2,6-acid with p-phenylene diamine.
Determination of 2,7-acid with β-naphthylamine.

5) Anwendung der Bestimmungsmethoden auf normale Sulfierungen, Zusammensetzungen der letzteren.
(Application of methods of determination for normal sulfonations, synthesis of latter.)

D) Verschiedenes (various methods).

Programm fuer eine Besprechung de Analysen-methoden der Vorprodukte fuer Tryphenylmethanfarbstoffe und der Untersuchungsmethoden fuer Salicylsaeure und Ortho-Kresotinsaeure, Leverkusen, 23-3-1922.
(Program for a discussion of analytical methods of preliminary products for triphenylmethane dye stuffs and research methods for salicylic acid and ortho-cresotinicacid, Leverkusen, 23-3-1922). 433-441

I.. Bensaldehyde-O-sulfonic acid:
Sulfite method
Phenylhydrazine method.
Sulfur method.

II. Ethylbenzylaniline sulfonic acid:
Iodine method.
Bromination method.
Determination of disulfonic acid in monosulfonic acid.
Sulfur method.

III. Tetramethyldiamidodiphenylmethane:
Picrate method, freezing point.
Qualitative testing.

IV. Hydrol:
Bromination method.
Separation of purified hydrol.
Sulphur method.

V. m-nitrobenzaldehyde and m-hydroxybensaldehyde:
Hydrazone method and qualitative testing.
Determination of isomers.

VI. Research methods of:
Benzaldehyde, o-chlorobenzaldehyde.
Brown lead oxide.
Maganese dioxide.
Dimethylaniline, diethylaniline.
Monoethylaniline, monomethylamiline.
Ethylbenzylaniline, methylbenzyl.
Monoethyl-o-toluidine.
Aniline, dibenzylaniline.
Diethyl-m-toluidine.
Monomethyl-o-toluidine.

VII. Untersuchungsmethoden fuer Salicylsaeure und Ortho-Kresotinsaeure.
Research methods for Salicylic acid and ortho-cresotic acid.

Niederschrift der Besprechung ueber Analysenmethoden fuer Alizarinzwischenprodukte am 27. Nov. 1925 in Leverkusen.

(Minutes on discussion of analytical methods for Alizarin intermediary products, 11-27-25 Leverkusen

1. Sulfonic acids.
2. Hydroxyanthraquinones.
3. Aminoanthraquinones.
4. Nitro- and chloroanthraquinones.
5. Polynuclear compounds.

FRAME NOS.

Protokoll der Besprechung der Vorstaende der Analytischen Laboratorien in Frankfurt am 6 Aug., 1926.
(Report of discussion of executive committee of analytical laboratories 8-6-26, Frankfurt.) 451 - 462

I. Verteilung der analytischen Arbeiten (Distribution of analytical work).

II. Art der Arbeiten. (Description of work).

III. Berechnung und Verteilung der Unkosten. (Calculation and distribution of expenses).

IV. Verwertung der Analysenergebnisse. (Utilization of analytical results).

V. Verminderung der analytischen Arbeiten. (Decreasing of analytical work).

Niederschrift der Sitzung der Analysen-Kommission am 20 Jan. 1927 in Frankfurt.
(Minutes of meeting of analyst commission 1.20.27, Frankfurt). 463-466

Entwuerfe fuer die Analysen 223 bis 263.
Proposals for analyses 223 to 263.
Report on a discussion on 16 Thermometers.
Analysis of B-naphthylthioglycolic acid.
Tables on distillation of aniline.

Minutes of meeting of analyst's commission. May 1927. 467 - 472

Discussion on analysis 264 - 305
Acet-o-toluidine.
Urea from am dc-naphthol J.
Benzidine mono sulfonic acid.
Chloranile.
Dimethylsulfate.
Naphthalene-1-6-disulfonic acid.
Carbazol.
Amidonaphthol G.
R. salt in Schaffer's salt.
1,8-dioxynaphthalene-3-6-disulfonic acid.

Report on a simple electron tube apparatus for electrometric quantitative analysis. 473-493

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Minutes on a meeting of the analytical Commission, June 1928. 494 - 497

1. IG analyzer.
2. Program for the 12th discussion of analysts.
3. Measuring apparatus.
4. Chemico-technical research methods and hand book by Lunge-Berl.
5. Coupling temperature of Schaeffer salt.
6. Thickness of dye stuff (Staerke der Farbstoffe).

Private communication to Prof. Berl. 498 - 536

Drying of gases with phosphorous pentoxide.
Determination of carbon dioxide.
Electrode carbon.
Determination of bicarbonate content of potassium carbonate.
Chromous chloride solution as oxygen absorbing agent.
Proof of chloride solution as oxygen absorbent agent.
Preparation of standard solution for quantitative determination of chlorine with O-toluidine.
Determination of small quantities of sodium in potassium salt according to Blanchetiere's method, as sodium magnesium uranium acetate.
Determination of Fe in Fe_2O_3 (magnetite).
Determination of fluorine by F. G. Hawley, altered for analysis of high percent fluorides such as cryolite, aluminum fluoride, melt, etc.
Calcined alumina.
Aluminum fluoride.
Cryolite.
Bauxite.
Aluminum.
Aluminum alloys.
0.1 N titanium trichloride as titrating solution.
Setting of nitrite solution.
Standardization of diazo solution
Pure naphthalene.
Acetic anhydride.

Niederschrift der Verhandlungen der Kommission zur Vereinbarung von Analysenmethoden 25. Jan. 1929, Frankfurt.

Minutes of the discussions on analytical methods, 1-25-29, Frankfurt. 537 - 540

a) I. G. Analysen.
I.G. Analyses.

b) Qualitaetsnormen.
Qualitative standards.

c) Thermometer.
Thermometers.

d) Schmelzpunktbestimmung.
Melting point determination.

e) Chem. reine Reagenzien fuer analytische Zwecke.
Chemic. pure reagents for analytic purposes.

f) Kartei der analytischen Literatur.
Index of analytic literature.

g) Nitrose-β-naphtholbisulphite.
Nitrose-β-naphtholbisulphite.

Schluessel zur Kartei "Analyse" (A)
Key for index of analysis (A) 541-544

I. Allgemeines.
General.

II. Allgemeine analytische und physikalische Methoden (Apparatur und Geraete).
General analytical and physical methods (apparatus and machinery).

III. Erkennung, Reaktionen, Trennung und gewichtsanalytische Bestimmung der Elements und anorganischen Verbindungen.
Diagnosis, reactions, separation and gravimetrical determination of elements and inorganic compounds.

Nachweis, Trennung und gewichtsanalytische Bestimmung der (anorganischen) Anionen.
Proof, separation and gravimetrical determination of (inorganic) anions.

B. Nachweis, Trennung und gewichtsanalytische Bestimmung der Kationen.
Detection, separation and gravimetric determination of cations.

FRAME NOS.

IV. Gasanalytische Verfahren (anorganisch und organisch).
Gas analytical processes (inorganic and organic).

V. Massanalyse und Bestimmung der pH (anorganisch und organisch).
Volumetric analyses and determination of pH (inorganic and organic).

VI. Nachweis und Reaktionen, Trennungen und gewichtsanalytische Bestimmung organischer Verbindungen.
Proof, reactions, separations and gravimetric determination of organic compounds.

VII. Mikrochemische Analyse.
Micro chemical analysis.

VIII. Pharmazeutische und medizinisch-chemische Analyse.
Pharmaceutical and medico-chemical analysis.

IX. Spezielle technologische Untersuchungen.
Special technological research.

Minutes of meeting of commission for standardizing analytical methods, August 1929. 545 - 546

Niederschriften ueber Besprechungen der analytischen Kommission von Januar 1937 - Maerz 1944.
Minutes of meetings of the analytical commission covering the period from January 1937 to March 1944.

Meeting 20, 1-15-37, Leverkusen 547 - 614

1. Spektralanalytische Methoden.
Spectroscopic methods.

2. Spektralanalyse in der analytischen Chemie, (Dr. Sedidel).
Spectrum analysis in analytic chemistry.

3. Quantitative Absorptionsspektralanalyse in der organ. chem. Analyse (Dr. Krueger).
Quantitative absorption spectrum analysis in organic chemical analysis.

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4. Absorptionsspektralanalyse fuer Materialien der Praxis, besonders organischer Substanzen (Dr. Rein).
   Absorption spectrum analysis particularly for organic substances.

5. Anwendung von Roentgendiagrammen in der analytischen Praxis (Dr. Seidel).
   Use of X-ray diagrams in analytical practice.

6. Spektralanalytische Untersuchung von Quecksilber und von Loesungen der Chloralkali Elektrolyse in Quecksilberbaedern (Dr. Pieper).
   Research on spectralanalysis of mercury and of solutions of alkali-chlorides in mercury baths.

7. Moeglichkeiten der Raman- und Fluorescenzanalyse (Dr. Rest)
   Possibilities of Raman- and fluorescence analysis.

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Wirtschaftliche Lage der analytischen Laboratorien.
Economical situation of the analytic laboratories.

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Aussprache ueber die geschaeftliche Lage.
Discussion on the commercial position.

Meeting 23, 5-22-38, Ludwigshafen. 638 - 647

Geschaeftliche Lage der analytischen Laboratorien.
Commercial situation of the analytical laboratories.

Meeting 24, 5-23-38, Leuna 648 - 730

1. Gasanalyse (Gas analysis).

2. Allgemeines ueber Gasanalyse in Leuna (Dr. Zapf).
   Gas analysis in Leuna in general.

3. Exacte Gasanalyse mit Hilfe der Drehschmidt-Apparatur. (Dr. Wetzel).
   Exact gasanalysis with aid of Drehschmidt apparatus.

4. Ueber die Stockapparatur und ihre Anwendung zur Trennung gasfoermiger Kohlenwasserstoffe. (Dr. Hieke)
   The Stock apparatus and its use for separation of gaseous hydrocarbons.

5. Trennung von Kohlenwasserstoffen mit Hilfe der Destillation. (Wetzel).
   Separation of hydrocarbons by distillation.

6. Anwendung und Entwicklung der Schwebewage, (Dr. Wetzel).
   Use and development of the suspension balance.

7. Gasanalytische Bestimmung von Butadien, Butylen, Butan, Wasserstoff, Acetylen und Monovinylacetylen nebeneinander, (Blumrich).
   Determination of mixtures of butadiene, butylene, butane, hydrogen, acetylene and monovinylacetylene).

8. Butadienbestimmung mit Maleinsaeureanhydrid (Dr. Wetzel).
   Determination of butadiene with maleic anhydride.

9. Schwefel- und Halogenbestimmung in Gasen, (Dr. Bens).
   Determination of sulfur and halogen in gases.

10. Ueber die Bestimmung von Spuren aromatischer Amine in der Luft von Betriebsraeumen. (van Hulle).
    Determination of concentrations of aromatic amines in the air of plants.

11. Ueber einen selbattaetigen SO_2 Bestimmungsapparat. (Dr. Hake)
    An automatic apparatus for SO_2 determination.

12. Chromchloruerloesung zur Absorption von Sauerstoff (Dr. Ehrhardt).
    Chromous chloride for absorption of oxygen.

13. Chlormagnesium zur trocknung von Sauerstoff (Dr. Eberhardt).

14. Stand der Aminoanalyse in Leuna.
Status of Amine analysis in Leuna

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Geschaeftliche Lage der analytischen Laboratorien.
Commercial status of the analytical laboratories.

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Meeting 27, 5-12/13-39, Oppau und Ludwigshafen. 751 - 871

1. Mikroanalyse und Spurensuche.
Microanalysis and research.

2. Mikroanalyse im analytischen Laboratorium Oppau (Dr. Grassner).
Microanalysis at the analytical laboratory Oppau.

3. Entwicklung der Mikroelementaranalyse im Untersuchungslaboratorium Ludwigshafen, (Dr. Zimmermann).

4. Erfahrungen mit der mikroanalytischer Sauerstoffbestimmung in organischen Substanzen nach der Methode von Ludwigshafen. (Dr. Unterzaucher).
Experience with microanalytic determination of oxygen in organic substances by method of Ludwigshafen.

5. Ueber die Bestimmung von Schwermetallspuren mit Dithiozon in Duengmitteln und technischen produkten, (Dr. Abrahamczik).
Determination of heavy metal concentrations with dithiozone in fertilizers and technical products.

6. Quantitative Mikrobestimmung von Metallen in organischen Stoffen, (Dr. Kroecker).
Quantitative microdetermination of metals in organic substances.

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7. Die Bestimmung von Spurenelementen in organischen Stoffen, (Dr. Kurzschmitt).
   Determination of trace elements in organic substances.

8. Spurensuche von Metallcarbonylen in der Luft, (Dr. Grassner).
   Determination of traces of metal carbonyls in the air.

9. Bestimmung kleiner Mengen Kobalt in Kupferchloruerloesungen und Kupfersalzen. (Dipl-Ing. Ahrens).
   — Determination of small quantities of cobalt in cuprous chloride solutions and copper salt.

10. Bestimmung von Spuren Gold in Erzen, (Dip-Ing. Ahrens).
    Determination of traces of gold in ores.

11. Anwendungsmoeglichkeiten der elektrometrischen Messmethoden fuer Spurensuche, (Dr. Ehrhardt).
    Applications of electrometric methods of measuring in microchemistry.

12. Eine neue Ausfuehrungsform der Mikro-molekulargewichtsbestimmung nach Barger (Dr. Untersaucher).
    New method of micro molecular weight determination by Barger).

13. Beitrag zur Geschichte der chromatographischen und Kapillaranalyse (Dr. Dans).
    Contribution to history of chromatographic and capillary analysis.

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