

INDEX MICROFILM REEL 134
(ORIGINAL DESIGNATION NAVY 5811)

LIST OF GERMAN DOCUMENTS PERTAINING TO THE SYNTHESIS OF
HYDROCARBONS AND CHEMICALS FROM CO AND H₂.

(135 German Documents)

SECTION I (a) (15 Documents)

1. Licensing invoices, 1943-2, May, 1944, Ruhrchemie A. G. letter incl. 9 sets of licensing invoices.
2. Status of the cobalt situation, January 8, 1943.
3. Cobalt catalyst for Fischer plants, April 19, 1943. Note by Dr. Gloth to Dr. Altpeter.
4. Fischer synthesis plant Courrieres Kuhlmann I.G. Report 3, December, 1940.
5. Operating data for April-June, 1943. Operating sheet and statement. Brabag (Schwarshiede, Bochlen, Magdeburg, Zeitz).
6. Preliminary cost report. Schwarshiede-March, 1944, Brabag statement.

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7. "Fischer synthesis" 100,000 tons per year: cost estimate as of November 11, 1944.

8. "Report No. 317 on Hydrocarbon Synthesis Experiments", Leuna, February 13, 1939.

9. One process flowsheet: Krupp A. G. Fanne-Eickel..

10. One process flowsheet: Lurgi Gas Recycle Process.

11. One flowsheet for Hoesch Gas Recycle Plant, Lurgi plant drawing ODS/592.

12. Thesis by W. Beier (Rheinpreussen) 1938. "Freezing point curves for paraffin mixtures".

13. "Determination of the iso-paraffin contents" I.G. Ludwigshafen by Dr. Leithe, May, 1939.

14. "Bonzin and gasol recovery with activated charcoal" by Herbert and Rueping, Lurgi Company.

15. One Lurgi drawing OAK-121836 charcoal plant flowsheet.

SECTION I (b) (43 Documents)

1. Thermodynamic data on hydrocarbons by Schneider, April 17, 1942.

2. "The thermodynamics of the Fischer-Tropsch synthesis" by P. Dolch, 19 February, 1944.

3. "Calculations pertaining to gas consumptions in connection with CO hydrogenation" by Dr. Roelen, July 1944.

4. The calculation of yields of the synthesis by Dr. Roelen, August 1944.

5. Two drawings: Lurgi: DS-103 and DS-104 "Middle pressure synthesis of hydrocarbons".

6. Synthesis of higher aliphatic hydrocarbons "patent application. KWI, April 18, 1941.

7. Discussion--lecture on iron catalysts for the middle pressure synthesis, KWI, September 10, 1940.

8. "The current facts pertaining to the hydrocarbon synthesis from CO and H₂" by Michael, June 27, 1941.
9. "Status of the synthesis according to the gas recycle process", by Michael, February 15, 1940.
10. "Procedure described by Dr. Michael--Process for middle oil production", May 20, 1940.
11. "CO + H₂ synthesis, Oil recycle process", by Deuftschmid, July 25, 1941.
12. "Hydrocarbon synthesis from CO + H₂, Oil recycle process" by Deuftschmid, September 10, 1939.
13. Experiments pertaining to the alcohol synthesis according to the oil recycle process by Deuftschmid, August 11, 1941.
14. Composition of 100,000 tons of crude product by I.G., Michael process, March 12, 1940.
15. Experiences with the synthesis oven chamber 506, by Michael, June 28, 1941.
16. Synthesis of middle oil and paraffin with iron catalysts, by Michael, March 15, 1941.
17. Research status of the synthesis oil experiments by Michael, April 1, 1942.
18. Hydrocarbon synthesis from CO + H₂ according to the liquid phase process, Michael, June 24, 1942.
19. Hydrocarbon synthesis from CO + H₂, liquid phase process, by Michael, June 25, 1942.
20. Hydrocarbon synthesis, research status of the liquid phase process, by Michael, July 12, 1942.
21. Catalyst deposition on the furnace wall, by Michael, November 28, 1942.
22. Report on the sump phase hydrocarbon synthesis by Gemassner, April 28, 1943.
23. Report on work pertaining to the hydrocarbon synthesis by Wintzer, March 1940.
24. Minutes of meeting, September 5, 1944 (Reichamtsversuche).

25. Normal pressure synthesis with iron catalysts by Kocibel, June 24, 1944.
26. Additions to the balance sheets (RA-Experiments) June 5, 1944.
27. A set of balance sheets.
28. Report on RA-Experiments by Brubag, August 21, 1944.
29. Evaluation of the RA-Experiments by Pichler, KWI, August 18, 1944.
30. Evaluation of the RA-Experiments by Herbert Lurgi, August 5, 1944.
31. Attitude of the RGH to the RA-Experiments, by Roelen, Ruhr-chemie, August 26, 1944.
32. RA-Experiments with iron catalysts by Wietzel, I. G. Farben, Ludwigshafen, August 25, 1944.
33. Report on the investigation of the benzine fraction from the RA-Experiments, by Koch, KWI, May 1, 1944.
34. Procedure for carrying out exothermic reactions, patent application, I.G. Lunda, July 9, 1942.
35. Procedure for carrying out chemical reactions, patent application I.G. Lunda, October 13, 1942.
36. Physical data required for the catalyst space for exothermic reactions, by Wirth, April, 1942.
37. Calculation of converter details for catalytic exothermic reactions in narrow temperature limits, by Wirth, July 4, 1942.
38. One drawing, Wintershall; 3326-A "converter".
39. One drawing, Hoesch, 71-116 "Experimental converter".
40. One drawing, Mannesmann Werke/45099, Experimental converter Rheinpreussen.
41. One drawing, "Ammoniakwerk/M4949u-1" Design of synthesis converter.
42. One drawing, Mittel-Stahl/5293-1 "Experimental pressure converter, system Lurgi.
43. One drawing, Lurgi OFT-1+5 Layout of experimental plans.

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1. On the conversion of CO-H₂ mixtures to liquid and gaseous hydrocarbons by Dr. Pichler, KWI.

Section II (31 Documents)

1. Hydrocarbon synthesis from CO + H₂. Status as of August 1, 1942. By Wintzer, Reisinger and Breywisch.
2. Process for the production of oxygen-containing compounds. Patent Department, Leuna, September 23, 1942.
3. Production of oxygen-containing compounds, I.G. patent application, October 15, 1942.
4. Process for production of oxygen-containing compounds. Re-cycle process, March 8, 1943.
5. Process for the catalytic reduction of CO with H₂. I.G. patent application, June 23, 1943.
6. Synol synthesis by Breywisch, April 1943.
7. The synol synthesis by Reisinger, February 1943.
8. Report No. 472 by Breywisch, October 10, 1944. "Experiences with the semi-plant scale synol unit Me458".
9. Report No. 283 by Reisinger, May 2, 1941. "Report on the synol synthesis".
10. Report No. 326 by Wenzel, April 10, 1942. "Status of the synol problems".
11. Fundamentals required for the erection of a 10,000# per year synol plant, by Wenzel, December 24, 1940.
12. Multi-stage operation, synol plant, Leuna, by Gemassmer, September 29, 1943.
13. Elucidations of the scheme BSK66, June 17, 1943. Includes one drawing BSK66.
14. One drawing M:434-1, July 24, 1941. Layout for the distillation units pertaining to the synol plant, Leuna.
15. One drawing, M:4375-1. Layout for the synol synthesis unit, Leuna.

16. Four diagrams: product distribution from synol processes:
o/1227/3 By Wenzel & Reisinger: March 20, 1941.
SK/1606/a
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17. Test results of the synol products intended for use as motor fuel, by Hilberath, May 25, 1945.
18. Conformity to law of the dehydration of higher alcohols, by Asinger, April 9, 1943.
19. Additional Esterol-Alcohols, July 9, 1942, by Pohl.
20. File memorandum on after-treatment of synol products intended for motor fuel, January 9, 1942.
21. One drawing, flow and material balance, for the processing of synol products. M-9802-2.
22. Process for the separation of alcohols from non-aqueous liquids, April 7, 1941.
23. Separation of aliphatic alcohols by extraction with aqueous methanol, by Wenzel, November 22, 1944.
24. Process for the removal of non-alcohols from alcohols by azeotropic distillation, February 15, 1945.
25. Separation of alcohols from mixtures with hydrocarbons, by Geiseler, April 1943.
26. Process for the reduction of iron-containing catalysts. Patent application July 7, 1941.
27. X-ray analyses of catalysts, July 2, 1941.
28. One drawing, M6459-4. Scheme pertaining to catalyst production.
29. Reduction of fused iron catalyst, July 15, 1943.
30. Generalization and improvement of the reduction of catalyst for synol, March 6, 1943.
31. Mechanism of the formation of fatty acids from CO and alcohol, by Dr. O. Fuchs, May 4, 1936.

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Section III (1 Document)

1. One patent application by Kaiser Wilhelm Institute dated May 7, 1938. Procedure for the manufacture of ~~solid~~ aliphatic hydrocarbons.

Section IV

1. Patent application by KWI dated December 18, 1942. Procedure for the catalytic synthesis of hydrocarbons from CO and H₂,

2. Minutes of a meeting between KWI and Ruhrchemie, June 2, 1943.

3. Progress report on development of synthesis from CO and H₂, particularly the synthesis of iso-paraffin by KWI, December, 1942.

4. Patent application by KWI dated October 2, 1942. Procedure for the production of knockproof hydrocarbons.

Section V (6 Documents)

1. Schedule "isolated compounds from isobutyl oil".

2. Exchange of experience on the crude isobutyl oil distillation, by Hanisch: January 25, 1944.

3. Flow sheet iso-butyl oil solution.

4. Subdivision of the initial cost for crude iso-butyl oil products. Oppau, November 27, 1935.

5. Methanol and iso-butyl oil distillation, 1939-40, by Dr. W. Weber.

6. Procedure for production of iso-butane oil from K fraction, Leuna, November 30, 1943.

Section VI (8 Documents)

1. Middle pressure methanol synthesis 2-stage experiment, by Dr. Brendlein, dated November 16, 1942-March 17, 1943-October 21, 1943-

2. One drawing, flow sheet of methanol synthesis.

3. One drawing, Degussa 16159, scheme of experimental plant M2

4. Methyl formate from CH₃OH and CO, by Dr. Pohl, Feb. 14, 1944

5. Description of set-up for the production of 28 Moto-methyl formate, by Dr. Brendlein, June 8, 1943.

6. Comparison between middle pressure synthesis and high pressure synthesis of I.G., Dr. Brendlein, December 4, 1943.

7. One letter by Professor Doctor Fuchs, addressed to Doctor Brundi, May 15, 1943, subject: The methanol synthesis.

8. One folder containing patent applications by Degussa, procedure for production of aliphatic esters.

Section VII (26 Documents)

1. Action of CO and H₂ upon olefines, February 10, 1944.

2. The present status of the oxo problems by Dr. Wenzel, February 10, 1942.

3. The constitution of oxo-alcohols, April, 1943.

4. The application of the oxo-reaction to mineral oil, April, 1943.

5. Investigation of olefinic CO-H₂ products of the oxo-synthesis, November 3, 1943.

6. Constitution of oxo and synol alcohols, August 21, 1942.

7. The reaction products of the oxo process, Feb. 25, 1942.

8. I.G. patent application, July 9, 1942, process for the reduction of dust-like catalyst.

9. I.G. patent application, September 11, 1942, process for shifting double bonds.

10. Water gas and H₂ requirements of the oxo synthesis, December 17, 1942.

11. Memorandum on oxo meeting, February 10, 1943.

12. Oxo process, March 29, 1943. Letter of I.G. to Ruhrchemie.

13. Oxo process, June 8, 1943. Letter I.G. to Ruhrchemie.

14. Experiences on corrosion in high pressure section of oxo plant, Leuna, September 25, 1943.

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15. One drawing, "Bamag-Meguin; 11E/10021", Flow sheet for distillation, Ruhrchemie A.G.
16. Continuous "oxierung" with dispersed catalyst, Feb. 10, 1943.
17. Memorandum on meeting of I.G. and Ruhrchemie, Jan. 7 and 8, 1943.
18. Scheme of oxo-Hiesel process of Ludwigshafen, Jan. 28, 1933.
19. One drawing, Ruhrchemie No. 500-123A, apparatus for continuous operation.
20. One drawing; Mersburg, M3463-16, flow scheme for 50,000 tons per year, oxo process.
21. One drawing, scheme for continuous operation of oxo process. Status of May 1, 1942.
- 21a. One drawing, BSK-23, scheme of oxo plant for 10,000 tons per year of initial product.
22. Directions for the erection of new oxo plants, March 30, 1942.
23. Memorandum of meeting, March 28, 1942.
24. Memorandum to meeting "planning of the oxo process", May 11, 1940.
25. Memorandum on energy requirements, etc, for oxo plant, July 7, 1943.
26. The production of higher alcohols from olefines, by Grimme, (Rheinpreussen), December 6, 1943.