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(Original designation Navy 5852-2)

Item No.

- 37 A report by Dr. Sabel (pencil notation on last page gives the date as either March 21, 1921 or March 21, 1931 - writing not clear), entitled "Heating the Schneider low-temperature carbonization oven with powdered coal." 19 pages of discussion and results of the experiment and 10 curves of data.
- 38A A 2 page memo dated Oct. 22, 1942, (signature illegible) on the organization of the Kontinentale ol A.G.
- 38B A 2 page memo dated Oct. 23, 1942 (signature illegible), on the organization of the Mineralöl-Baugesellschaft m.b.H.
- 39 Chronological development of the I. G. Farben hydrogenation process (including the most important data of the works of Bergius and Fischer-Tropsch) from 1910-1923, 1933-1938, 1933-1941. There are also attached a report of Oct. 17, 1942 by Dr. Schaeppert and an index listing 30 papers, 9 pages.

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- 40 Copy of letter of transmittal by Fühner and Wittmann, Ludwigshafen, Oct. 17, 1942, covering a curve (attached to letter) illustrating the development of the gas-phase reaction space of German hydrogenation plants from 1939 to 1942.
- 41A Collection of data for TEA-Report Oct. 28, 1942, on the theory of commercial rectification, especially of petroleum oils. 3 pages - signature illegible (probably from Ludwigshafen).
- 41B One page report (signature illegible) of Oct. 19, 1942 (TEA Report) on commercial methods of fractionation in the petroleum industry. (Probably from Ludwigshafen.)
- 42 A 5 page report by Boente of Oct. 13, 1942, on the chemical composition of the asphalt from hydrogenation of coal (probably from Ludwigshafen).
- 43 An 8 page report by Schneider of Oct. 17, 1942 (probably from Ludwigshafen) on the development and present status of catalytic cracking processes. Includes Houdry, Standard and I. G. processes.
- 44 Report from catalyst plant Ludwigshafen, dated Oct. 16, 1942, on the price of tungsten and yellow ochre catalysts for the years 1941 and 1942. 2 pages and 1 curve illustrating increase in price of four of their catalysts.
- 45 One page report and 1 table, dated Oct. 17, 1942, from the catalyst plant of Ludwigshafen; showing the production of catalysts and their WO_3 content from 1927 to 1942. Gives production figures for new and regenerated catalysts.
- 46 Two page report (four illegible signatures given) dated Oct. 16, 1942, (probably Ludwigshafen) on the development of catalysts from 1925.
- 47 A 2 page letter from I. G. Farbenindustrie to Dr. Altpeter of "Beauftragten für den Vierjahresplan Der Generaibevollmächtigte für Sonderfragen der chem. - Erzeugung," in reply to the latter's letter of Feb. 16, 1943, requesting that an iron catalyst be substituted for the cobalt catalyst in the Fischer plants. There is attached a 4 page report of March 1, 1943, by Dr. Scheurmann and Winzel on the replacement of the cobalt catalyst in the medium-pressure hydrogenation of carbon monoxide with an iron catalyst.
- 48 One page table dated Oct. 22, 1942, Ludwigshafen, listing the amount of hydrogen used per ton of product, such as gasoline, Diesel oil, lubricating oil, and paraffin.

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- 49 A 6 page report (including tables and graphs) by Dr. Rouck of I.G. Farbenindustrie, Ludwigshafen, dated Oct. 17, 1942, entitled "Ash removal from hydrogenation masses." A description of a process for producing ash-free or a low ash-content coal, bitumen, etc., that is to be subjected to hydrogenation.
- 50 Influence of pressure on the hydrogenation of bituminous coal. A 2 page report by Dr. Hupper of I. G. Farben of October 17, 1942.
- 51 Influence of raw materials on the properties of finished products. A one-page report and a table by Dr. Hupper et al. of I. G. Farbenindustrie, dated Oct. 15, 1942. The table consists of curves illustrating the specific gravities and aniline points of materials boiling at same temperatures that are obtained by hydrogenation of various raw materials.
- 52 A 2 page report (signature illegible) from I. G. Farbenindustrie, of Oct. 19, 1942, on the complete separation of the solid ballast material necessary in hydrogenation processes from the valuable hydrogenation products and their best possible methods of recovering by means of filtration.
- 53 Electrode materials for the manufacture of aluminum. A 2 page report of I. G. Farbenindustrie of Oct. 16, 1942.
- 54 Fuel oil. A one page table from I. G. Farbenindustrie, dated Oct. 16, 1942, giving the specific weight, viscosity, calorific value, percent contaminants, flame point, composition, etc., for eight of their fuel oils.
- 55A Drawing No. 10058 of Jan. 30, 1945. A flow sheet of a standard gas-phase coal hydrogenation unit employing catalyst 5058.
- 55B No. 10059 of Feb. 5, 1945, similar to No. 10058, for employing catalyst 6434.
- 56 Five undated, unsigned tables, as follows:
 - A. Comparison of high-pressure hydrogenation and synthesis processes, comparing 4 processes in respect of product obtained, coal consumption, and efficiency of process.
 - B. Comparison of 5 combined hydrogenation and synthesis processes.
 - C. Comparison of 3 processes for production of compressed gas at 250 atmospheres.
 - D. Comparison of 3 processes for manufacture of motor fuel.
 - E. Comparison of steam locomotive with other conveyances.

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- 57 Report of the sulfuric acid produced at Böhlen, dated Jan. 24, 1944. 8 pages including a flow diagram of the plant, and chemical and physical properties of the acid.
- 58 Drawing No. 847-2 of I.G. Farbenindustrie, dated July 17, 1933. A process of unknown description employing carbon monoxide, hydrogen and ammonia, autoclaves, hydrogen cyanide washer, blowers, pumps, and overhead equipment.
- 59 Drawing Nos. M5383-16, M113684-2, and M11368c-2. Flow diagram for an inhibitor plant producing 3.2 tons per month. Batch process, apparatus for six batches per month. Ammoniakwerk Merseburg.
- 60 An 11 page report by Donath of I. G. Farbenindustrie dated April 16, 1942, on results of experiments made on the manufacture of toluene from a Politzer DHD-gasoline fraction boiling 70°-120°.
- 61 A 14 page report of Feb. 26, 1944, describing the production of toluene at Böhlen Zeitz. Includes description of the process, costs, and production figures.
- 62 A folder containing following drawings of Ammoniakwerk Merseburg:
 - M5384A-4: Gas-fired preheater for a hydrogenation plant. Sept. 9, 1939
 - 1830-A: Flow diagram of coal liquefaction chamber No. 4. June 24, 1944.
 - 1675: Flow diagram of coal liquefaction chamber No. 5. July 13, 1939. Location of thermocouples in the converters and preheaters for chamber 4. (Apr. 19, 1941); chamber 3, (June 10, 1938) Böhlen Works.
 - 10024b: June 27, 1944 and Oct. 15, 1944. Cylindrical-type, gas-fired preheater for chamber 3 -- thermometer sketch.
 - 1728a: Rectangular, gas-fired preheater -- thermometer sketch. Sept. 10, 1941.
 - 18644: Gas preheater for chamber 18. Thermometer sketch. Jan. 12, 1943.
 - 10032: Flow sheet of coal-tar hydrogenation unit. Oct. 15, 1944.
 - 1950a: Flow sheet of a gas-phase unit -- cylindrical preheater. Jan. 20, 1944.
 - 10030: Flow diagram of a coal liquefaction chamber No. 2. Electric preheater.
- 63 Recovery of toluene from natural and synthetic gasoline. 3 page report by I. G. Farben; dated Oct. 16, 1942.
- 64 Ten drawings on retorts for distillation of oil shale. Transferred to oil-shale file.
 - Lurgi WO-1-1280 - oil-shale retort, Apr. 4, 1944.
 - Deutsche Bergwerks U. Huttenbau - general view of gas products. Sept. 18, 1944.

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64-cont'd. (Drawings on retorts for distillation of oil shale)

Portlandzementwerke: General arrangement.
 Section through waste heat flue.
 Sections A-A; B-B; c-c; and D-D.
 Section through the air ducts and steam ducts.
 L. Biebeck'sche Montonwerke: two flow sheets of products obtained.
 Microfilm copies of above also in file.

- 65 Composite report of 18 papers on the "AT-244" process presented at Leuna on March 14 and 15, 1944, covering all steps of the "AT" and "T-52" processes which relate to the production of aviation gasoline. 204 pages including description of processes, photographs, flow diagrams, data curves, discussions of the papers, and suggestions for improvements of the processes.
- 66 Report on the status of development investigations. Böhlen, May 10, 1939. A 5 page report by Dr. Mott of the operating department on inspection of plants.
- 67 Treatment of "OXO" and "Synol" alcohols. 9 page report on the status at Oct. 1, 1944, includes one flow diagram, M-3636-1, of Sept. 14, 1940.
- 68 Drawing No. 502-665 of July 27, 1944, showing plan layout of the synthesis plant. Ruhrchemie A. G.
- 69 Conference at Leuna Works, July 24, 1942, on the enlargement of the "OXO" plants to produce 20,000 tons per year. 2 pages and 1 flow sheet.
- 70 Flow sheet of the "OXO" plant including the enlargement. Drawing M-5362a-1, Ammoniakwerke Merseburg, of Feb. 24, 1943.
- 71A Flow diagram of a "T-52" plant, No. O/1038 of Nov. 25, 1940.
- 71B Flow diagram of a "KU" plant for Mineralöl-Baugesellschaft m.b.H. designed by Ammoniakwerke Merseburg, No. B. Sk. 105 of March 1, 1945. Includes flow sheet of synthesis gas production, hydrogenation, high-pressure dehydrogenation, etc.
- 72 Häuber process for the thermocracking of ethane for the production of ethylene and its purification. Includes 5 pages of instrumentation and 6 photostatic copies of drawings.
- 73 Häuber process for the thermocracking of ethane to produce ethylene. Oppau, May 29, 1942; about 15 pages plus photographs and drawings.

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- 74 "Acetylene chemistry." A 7 page report by Dr. Buera, Ludwigs-
hafen, Oct. 29, 1940.
- 75 Carboxylic acids. A 2 page report of June 1942, discussing
production of carboxylic acids at Leuna.
- 76 Synthesis of acetic acid. A 3 page report by Dr. Schneider and
Reitz, dated Apr. 2, 1942, on synthesis of acetic acid by the
reaction $2\text{CO} + 2\text{H}_2 = \text{CH}_3\text{COOH}$.
- 77 A one-page report by Zann, Leuna Works, June 26, 1942, on the
properties of C_{24} esters produced from C_{12} aldehydes and a dis-
cussion of C_{11} - C_{14} "Synol" alcohols.
- 78 One-page report (signature illegible) Leuna Works, Jan. 30, 1942,
on a description of a process for the manufacture of synthetic
cutting oil "S₁" as a substitute for rapeseed oil and other fatty
oils used for the treatment of metals.
- 79 Results of laboratory tests on dehydrogenation of primary alcohols
by treatment with caustic soda. 3 page report dated April 22, 1942,
Leuna Works.
- 80 Table listing yearly production of gas at the ethylene plant
Hydabreck (Hauber process), dated July 15, 1942.
- 81A Drawing showing production of solvents and softening agents in
tons per year. Merseburg Works. B.K.U. - Sch..281.
- 81B Drawing Mc437 of May 5, 1941, showing a flow diagram for produc-
tion of 57000 M^3 3/hour of gas and $55,000\text{ M}^3$ 1/hour $\text{CO} + \text{H}_2$.
- 81C Flow diagram for treatment of 100,000 ton/year of raw product to
obtain 50,000 tons/year gasoline. Bureau for Technical Planning.
Feb. 11, 1937.
- 81D Flow diagram of the "To plant" for production of synthesis gas.
I. G. Farbenindustrie, Oct. 16, 1939.
- 81E Flow diagram of the initial, intermediate, and finished products
in the "Moosbierbanm" project. Sept. 1, 1941.
- 81F Flow diagram for producing 222,000 tons/year of gasoline from
coal and pitch and 52,500 tons/year of fuel oil from pitch.
I.G.Farbenindustrie N-8882^b-2, Aug. 21, 1940.
- 81G Two diagrams showing production figures for automobile and avia-
tion gasoline. I.G.Farbenindustrie, Dec. 2, 1939.

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- 81H Flow diagram showing production figures for gases at the H. F. Moosbierbaum plant. M7748a-4, Nov. 11, 1941.
- 81I Scheme of an experimental plant for catalytic cracking. Temperature and pressure measuring.
- 81J Flow diagram of a pilot plant for experiments at 700 atm. pressure. Merseburg M-5308-4.
- 81K Flow diagram of the Häuber process for production of ethylene by thermocracking of ethane. M4819a-16, Sept. 1, 1942.
- 81L Diagram showing possible synthesis processes starting from ketone acids.
- 81M Flow diagram showing production figures of synthetic fuels from CO & H₂, and their conversion possibilities to Synol-, methanol, or isobutanol synthesis.
- 81N Flow diagram of production figures of synthetic fuels, methanol, isoprene, Buna S, etc.
- 81 O Flow diagram for a synthetic catalyst plant including equipment for reduction of catalyst, M-4628a-1, Nov. 14, 1941.
- 81P Two flow diagrams of an isomerization plant. M5799-16 Merseburg, March 8, 1944, and Dec. 30, 1941.
- 81Q Flow diagram of an isomerization process for a 1000 kg. charge, Aug. 28, 1941.
- 81R Flow diagram of an acetic acid plant. 700 atm. CH₃ OH & CO
CH₃ COOH.

Flow diagram of the "OXO" plant for manufacture of propionaldehyde and isobutylaldehyde from ethylene or propylene. No date.
- 81S Flow diagram for synthesis of acetic acid. Nov. 11, 1941. Ammoniakwerke Merseburg.
- 81T Flow diagrams of the formaldehyde and propionaldehyde plants. Dec. 16, 1943.
- 81U Flow diagram for recovering carboxylic acid. Dec. 7, 1937. Ammoniakwerk Merseburg.
- 81V Flow diagram of trimethylol ethane plant. Dec. 19, 1943.

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- 81W Flow diagram showing production figures for manufacture of formaldehyde from methanol and air. Dec. 31, 1941.
- 81X Flow diagram of a process for purification of activated carbon. M2024-16. Merseburg, Nov. 6, 1937.
- 81Y Flow diagram of Alkazid scrubber. M2025-16, Nov. 1937.
- 81Z Flow diagrams of a caustic soda scrubber. M2026-16, Nov. 6, 1937 and M2022-16 of Nov. 6, 1937.
- 81AA Flow diagram of oil scrubber. M2023-16, Nov. 6, 1937.
- 81BB Flow diagram for purification of ethane. M2063-16, Nov. 18, 1937.
- 81CC Flow diagram for purification of crude gas for Linde plant Mel25c. M2095-16, Dec. 3, 1937.
- 81DD Flow diagram of the HF catalyst plant Leunawerke, Nov. 25, 1940 M3789-16.
- 81EE Flow diagram for recovery of tungsten. M4767-16. Ammoniakwerke, July 24, 1942.
- 81FF Flow diagram of breeze-contact plant no. II, Me 117. M4408-16, Feb. 13, 1942. Merseburg.
- 81GG Flow diagram of contact-gas purification plant. Ammoniakwerke M6688-2. Bldg. No. 386, Dec. 7, 1939.
- 81HH Flow diagram showing production figures of the Esterol plant, Bldg. No. Me 1016. M10468-2 of July 27, 1942, and M10274-2 of July 19, 1942.
- 81-II Flow diagram of production of ethylene polymer lubricating oil. Undated.
- 81JJ Flow diagram of a project for producing 1500 kg/day of ethylene polymer lubricating oil.
- 81KK Two flow diagrams for production of synthesis gas. I.G. Farben, Aug. 19 & 21, 1939.
- 81LL Three flow diagrams of distillation of crude isobutanol. Nov. 2, 1937 & Sept. 28, 1939.
- 81MM Flow diagram and description of process for dehydration of isobutyl alcohol to isobutylene. Feb. 15, 1938. Ammoniakwerke Merseburg.

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- 81-NN Flow diagrams showing production figures of a process for manufacture of synthesis gas and pure hydrogen. Nov. 1, 1942.
- 81-OO Flow diagram of methanol and isobutanol recovery. Oct. 22, 1935.
- 81-PP Flow sheet of the AT244 dehydrogenation process. Undated.
- 81-QQ Three flow sheets showing production figures of the At dehydrogenation plant. Oct. 28, 1942. Ammoniakwerke Merseburg.
- 81-RR Flow sheet showing production figures of light oil II plant, Merseburg. BSK 53. Date illegible.
- 81-SS Flow diagram of the Arobin hydrogenation plant. Dec. 21, 1943. OS-183a; and a flow sheet giving production figures of the Arobin plant of July 13, 1943.
- 81-TT Flow sheet showing production figures of hydrogen and nitrogen (for manufacture of ammonia). and synthesis gas. Jan. 28, 1941.