INDEX - MICROFILM REEL 188
(Original designation Navy 5850-1)

Item No

Box I.

1 Layout plan of Hoesch Benzin Fischer-Tropsch plant (1:1000). Location of buildings and major equipment areas.

2 Thermal investigation and determination of flow resistance of different fluids in a unit cooler.
A research report of 84 pages of the hydrogenation works at Leuna, dated March 5, 1931, using a specially designed experimental tubular cooler. The flow resistance and heat transfer characteristics of methanol, water, gasoline, middle oil, tar fractions and residues are studied. Many graphs of experimental data are included.

3 Investigations and theories concerning catalysts' regeneration in catalytic cracking processes.
The report of approximately 60 pages by E. Otto of Leuna Works dated August 1, 1943. First portion of the report deals with experimental work on regeneration of the catalyst with air under various conditions of operation. The second part of the report deals with the theory of catalyst regeneration with pure air. Many drawings and graphs are included at the end of this report.

4 Calculations and construction of high perssure synthesis chambers with cooling system similar to steam boilers. A research report of about 50 pages by Wirth (Company and location unknown) dated July 27, 1944. A theoretical study of heat transfer from catalysts such as are used in the synthesis of methanol to boiling water using tubular methods of construction.

5 The design of catalyst chambers and catalytic exothermic and endothermic reactions.
The report of 14 pages by Wirth of Leuna Works dated April 1942. The theory of catalyst chamber design where heat transfer is involved using various schemes of heat conducting plates and tubes for heat removal or heat input. Includes several graphs of data.

6 Application of official regulations for the selection of construction material, especially steel and iron, in the Merseburg Ammonia Works.
A report of 56 pages covering the application of various materials to the design of buildings and equipment in the Ammonia Plant at Merseburg, dated about 1937. Includes various photographs of buildings and equipment as well as structural line drawings.

Item No.

7 Investigation of the preparation of active carbon from brown coal. A research report by Dr. Hanisch dated about 1933 of 12 pages plus several large tables of data and various graphs. Describes pilot plant tests on the production of active carbon by treating brown coal with mixtures of air and steam or oxygen and steam using a dancing fuel bed such as is used in a Winkler generator. The yield was very low. By using a fixed fuel bed in a shaft oven there was obtained a good yield of highly active carbon

8 Possibilities of using coke breeze in Leuna.
The memorandum of Leuna Works dated August 12, 1935, discussing possibilities of using coke breeze in the Winkler generators at Leuna and the changes that would be necessary to use this material.

9 Drawing showing layout plan for Winkler generator plant of 80,000 cubic meters per hour. (Bamag-Meguin)

10 Typical operating data of Winkler generator.
Several sheets of gas analysis and typical operating data sheets.

11 Not labeled. Drawing (Merseburg Ammonia Works) of a portion of Winkler generator plant tubular equipment.

12 Diagrammatic layout of tubes in equipment, nature of which is not indicated at Böhlen Works of Braunkohle-Benzin, A. G.

13 Two graphs, first showing velocity of gas flow at different locations in the waste heat boiler, and the second showing cross sections and temperatures at different locations in the waste heat boiler. Possibly refers to Winkler generator plant.

14 Unlabeled and undated free-hand sketch possibly of a Winkler generator.

15 A report on repairs of waste heat boiler III.
A report of the Bohlen Works of Brabag dated March 3, 1943, containing 9 pages and various photographs describing the condition of this particular waste heat boiler from the Winkler generator plant. There is a description and various photographs of the condition of the tubes and conditions of the refractory, including the build up of slag etc.

16 Investigation of Sieving. A 19 page report with location and date unknown. Deals with test of sieving dried brown coal, apparently as related to operation of a Winkler generator. These are laboratory tests dealing mostly with the fall of the coal through tubes and the carrying away of the dust in a stream of air or carbon dioxide.

Item No.

17 Investigation of the gasification of "filter" dust.
A research report of 13 pages and various drawings and graphs dated October 24, 1931, on the gasification of coal dust with high ash content in a (cyclone) generator. Results of pilot plant test on a continuous gasification of coal dust in a special type of generator.

18 Investigation on the gasification of coal and coke by the Winkler process.
A report of 18 pages and several large tables and graphs by Dr. Hanisch of Leuna Works dated June 29, 1932. Describes the results of experiments in a small generator of 1150 mm diameter on the continuous gasification of coal and coke. Principle used was that of the dancing fuel bed of the Winkler generator. Complete material, balances, temperatures, etc., are given.

19 Study of boiler destruction by rupture of tubes as shown by the examination of waste-heat boiler of Winkler generator, 1A.
A report from the Bohlen Works of Brabag dated March 21, 1942, containing 5 pages and various photographs and graphs. A discussion of the causes of the breakage of tubes in the waste-heat boilers of the Winkler generator.

20 Drawing of ground plan of atmospheric water cooling power (system Balcke) for Zeitz Works, Brabag.

21 Various methods of operating Winkler plant with oxygen.
A brief 3 page memorandum from Leuna dated June 9, 1932, indicating different methods of operation of the Winkler generator plant.

22 Preparation of power gas forming char. A brief memorandum of 5 pages from Leuna dated December 14, 1936, giving the results of gasification of brown coal char in a gas generator.

23 Preliminary degassing of char for Winkler generator gas.
A brief report of five pages presumably from Leuna dated December 23, 1936. Describes various ways of degassing the brown coal char before it is used in a Winkler generator.

24 One page letter of Brabag dated January 22, 1941, regarding fuel consumption, etc., in a Winkler generator for production of water gas that is eventually to be made into synthesis gas.

25 Proposal and installation of a Winkler generator for 30,000 cubic meters of water gas for preparation of synthesis gas instead of Koppers' plant.

Item No.

(25-Cont'd.) A project proposal of 6 pages dated January 3, 1941, for a Winkler generator plant to make water gas which would then be converted into synthesis gas as an alternative to a synthesis gas plant proposed by Koppers. This project gives the characteristics and quantities of fuel required, the oxygen requirement, power requirement unit and removal of carbon dioxide, etc. Also figures on the cost of the plant are given.

26 A report on methane cracking. This very rough undated and unsigned report is in long hand and apparently had not yet been typed. It gives some of the principles of methane cracking, a description of some of the methane cracking plants, such as Koppers and Bamag, and also gives the results of an investigation of methane cracking in a Winkler generator. (Typed on Item 36-S)

27 A series of extremely brief reports from Bohlen in 1942 and 1943 regarding the removal of dust from gas waste waters, oxygen plant and various other matters.

28 A series of brief reports of various dates on dust content of gas, gas analysis, analysis of char used as fuel in the Winkler generators, dust removal from gas, etc.

29 Inspection of various characteristics of the gas production of Sudenlandischen Treibstoffwerke, A. G. at Brux. A very brief report dated May 11, 1944, on construction details of the Winkler generator, waste heat boilers, cyclone dust separators, etc., at this plant.

30 Daily operating results of water gas generator at Leuna. An undated long hand report on daily operating results of the Winkler generator at Leuna in which an attempt is made to correlate various operating and analytical figures. Report includes several graphs of results.

31 Various brief reports, some in long hand, on various details of operation of Winkler generators.

32 Graph location and date not shown. Showing the relationship of carbon ash presumably entering the Winkler generator by different methods.

33 File folder constituting hand book of data from Ruhrchemie, A. G. Includes such data as power requirements for pumps and blowers, pressure loss in pipe linings, Reynolds No. for pipes, thermal conductivity of various materials, physical characteristics of various gas vapors, and many other data in tabular or graph form useful in fuel technology.

34-A A brief 2 page resume dated October 16, 1942, on various methods for production of hydrogen.

Item No.

34-B A catalog of Lurgi describing the Lurgi-Krupp process for production of a coke from briquett coal.

34-C Various drawings of plant for process described above in 34-B.

34-D Report of 4 pages plus one color flow diagram of high pressure generator plant from Böhlen dated October 30, 1942. A very brief description of the continuous gasification of solid fuel by means of steam and oxygen in a high pressure generator.

34-E Description of ash removal from bottom of high pressure gas generator. A brief report of 6 pages and a color flow diagram showing method of removed ash from bottom of high pressure continuous gas generator such as is described above in 34-D.

34-F Measure for prevention of frost damage when gas work is totally shut down. A brief list of instruction from Böhlen dated January 5, 1945, giving instructions on above.

34-G Two tracings showing construction of high pressure gas producers.

34-H Three graphs from Böhlen having to do with operation of high pressure producers with oxygen.

34-I Several documents having to do with production of Fischer-Tropsch synthesis gas in Japan mainly on project at Fuschin. All of this project data from Lurgi.

34-J Lurgi oxygen pressure gasification. A brief report of 7 pages from Leuna Works dated October 25, 1938. This is a very brief resume of the technical features of the process, with no drawings shown. Analyses of the gas are given and figures and cost of the plant are also outlined in this report.

34-K Curve showing the relationship between ash melting temperatures and heighth of testing cone.

34-L Data on various processes for production of synthesis gas. A large table prepared by Lurgi giving comparison of various synthesis gas production processes.

34-M Schematic drawing of Krupp-Lurgi low temperature carbonization oven.

34-N Schematic drawing of entire plant for Krupp-Lurgi low temperature carbonization.

34-O Krupp-Lurgi low temperature carbonization process. A memorandum of products produced, dimensions of ovens, temperatures, etc. Also line sketches of equipment are included.

Item No.

34-P Kurpp-Lurgi low temperature carbonization plant, distillation tests with Weber briquettes. A 9 page report dated April 17, 1940, on special tests of this process with briquettes.

34-Q A memorandum on production of gas for synthetic oil. A 2 page memorandum of November 30, 1937, by Lurgi, on the production of synthesis gas by the pressure process.

34-R Research on pressure gasification at the Böhlen plant from Oct. 5-12, 1941. A 16 page report giving operating results from operation of the continuous gasification by means of steam and oxygen. Includes tables of operating results, graphs and outline, and schematic drawings of the test plant.

35 Series of drawings and data on the Schmalfeldt-Wintershall process. Series of about a half-dozen reports and about eight drawings describing this process for manufacture of Fischer-Tropsch synthesis gas.

36 Includes a large number of drawings and reports on various methods for manufacture of water gas, synthesis gas, hydrogen, etc. Details as follows:

36-A Diagram of Pintsch process showing quantities at various points of system instruments, etc.

36-B Detailed drawing of Pintsch process.

36-C Detailed drawing of Pintsch process.

36-D Koppers gasification plant at Schwarzheide. Cross section through the generator plant.

36-E Small unlabeled drawing of gasification plant at Böhlen.

36-F Koppers gasification process at Schwarzheide showing details of generator.

36-G Drawing showing details of Pintsch-Brassert generator.

36-H Three small sketches of details of Pintsch generator.

36-I Flow scheme for hydrogenation of 200 000 tons per year tar to 150,000 tons per year of gasoline, Böhlen plant.

36-J Schematic drawing of tar distillation by Friedrich Uhde.

36-K Schematic diagram of tar overhead oil distillation plan Ammonia Works, Merseburg.

Item No.

36-L Schematic diagram of filtration of sludge for coking of sump-phase hydrogenation residue.

36-M Schematic diagram of filter residue coking.

36-N Two detailed drawings of coking oven and hydrogenation residue.

36-O Drawing showing layout of Koppers' coke oven gas cracking plant at Rheinpreussen.

36-P Drawing showing details of waste heat boiler, Brabag

36-Q Drawing showing details of Koppers' coke oven gas cracking plant at the Mülke plant.

36-R Memorandum of I. G. dated January 17, 1936, to Japanese interests on methane cracking plants for Winkler water gas generator.

36-S Series of brief reports of methane cracking by Koppers' Bamag process and Winkler generator, etc.

36-T Two tracings of data on cracking of methane and coke oven gas.

36-U Koppers' process for gasification of coal dust. A report of 5 pages and several drawings and diagrams of Heindrich Koppers dated June 4, 1945. Shows the material and heat balance of the process and also a schematic diagram of the operation.

36-V Drawing showing details of refractory brick in Koppers synthesis gas oven at the Prabag plant.

36-W Drawing showing details of synthesis gas piping for Koppers' process at Brabag.

36-X Drawing showing details of gas, air, and steam piping at Koppers synthesis gas plant at Brabag.

36-Y Report on Thyssen-Galocsoi plant at Wanne-Eickel. An 8 page report dated September 4, 1944, on changes in the arrangement of burners, apparently having to do with the Thyssen-Galocsoi generator plant.

36-Z Drawing showing the layout plan of the Thyssen-Galocsoi plant.
36-AA Drawing showing elevation of the Thyssen-Galocsoi plant.
36-BB Drawing showing details of the Thyssen-Galocsoi generator.