

FILM STUDY GROUP
REPORT ON MICROFILM REEL NO. 10
Prepared by
KOPPERS COMPANY, INC.

U.S. Government Technical Oil Mission
Report on Reel 10
(Orig. Ident. Reel 10A)

1. Frames Containing Information of Little or No Technical Value:

<u>Frame</u>	<u>Item</u>	<u>No. of Frames</u>
<u>Bag 2734 Target No. 30/4.11 - Bottrop</u>		
186+	9 Bituminous coal tar hydrogenation line diagrams, showing operating data, process information, etc. Location of thermo-elements in autoclaves Analyses of paste for ash and MoO ₃ at different locations of hydrogenation chamber. Tabular specifications of hydrogenation chamber. (2) Hydrogenation chamber arrangement (2) Flow scheme of gas phase recirculation pumps (2) Flow scheme of sump phase chambers Flow scheme of chambers Circulation flow in gas and sump phase circulation. Position of temperature measurements in chamber (8). Scheme of nitrogen compression. Scheme of gas circulating pumps. Scheme of hot circulation. Scheme of raw material chamber. Scheme of water injection pumps. Scheme of wash oil pump. Layout of Bldg. 11. Flow diagram of inlet pumps. Scheme of meters. Tables of pressure measurements. Hydrogenation flow scheme. Flow scheme of coolers.	33
<u>Bag 2743 Target No. 30/4.09 - Scholven</u>		
220+	1 Line Diagrams, Hydrogenation Flow sheets and material balance sheets (diagrammatic) no dates given.	10
238+	3 Equipment List for Hydrogenation Plant November 1, 1941 Equipment Layout; also describes duties which equipment has to perform November 10, 1941 Office Memorandum November 21, 1941 Additional information to equipment layout. Space requirements, operating data, etc.	13 1 11

<u>Frame</u>	<u>Item</u>	<u>No. of Frames</u>
263+	4 Design Data, T-52 AT-244 plants (Butane dehydrogenation and alkylation)	
	September 13, 1939 Report on a Trip to Ammonia Plant at Merseburg, Leuna Works	4
	Subject: 1. Plant for Separation of Iso-C ₄ 2. Plant for producing 22,000 tons per year of V.T. 52.	
	February 22, 1940 Report on Trip to Engineering Office, Uhde, Merseburg.	
	Subject: T-52 Plant.	5
281+	4 March 29, 1940 Report on discussion at hydrogenation plant, Scholven.	2
	Subject: T-52 Plant.	
	April 6, 1940 Report on discussion at I.G.Ludwigshafen	
	Subject: Layout and ordering material for T-52 plant, Scholven.	8
	July 31, 1939 File Memorandum	
	Subject: Production of Polymer-Benzine at Ruhrchemie, Holten.	3
	June 9, 1939 Report on Discussion of C ₃ -C ₄ Capacity Regulation	4
	December 16, 1939 File Memorandum	
	Subject: Power requirements for T-52 and T-16	2
	December 27, 1939 Preliminary Measurements of Buildings and Tanks for T-52 and T-16 Plants	2
	October 24, 1941 File Memorandum	
	Concerning: Steels to be used for the dehydrogenators for the T-52 plant.	1
322+	6 Costs	
	January 7, 1942 File Memorandum.	
	Cost estimation of Gladbeck plant erection	3
	January 5, 1942. Comparison of costs of Gladbeck plant erection on January 21, 1941 and January 2, 1942	2
	January 2, 1942 Cost estimation of Gladbeck plant erection	12
	March 12, 1942 File Memorandum	
	Subject: Yield of Benzine from coal, and H ₂ consumption in January & February, 1942	3

<u>Frame</u>	<u>Item</u>	<u>No. of Frames</u>
365+	6 Costs	
	July 12, 1937 Letter on costs and other cost data	7
	March 28, 1939 File Memorandum. Plant installation costs for iso-octane plant. 10,000 tons per year capacity	2
	May 13, 1939 Discussion on T-52 Production	12
	November 25, 1939 File Memorandum. Capital required for 22,000 tons per year of T-52	14
	March 29, 1941 File Memorandum. Erection cost of AT-244 (Alkylation) Plant	1
403	7 Flow sheet of Pott-Broche Process for Coke Production (Same as Item 9, Target 30/4.11 - Bottrop)	1
	<u>Bag 2246 Target No. 30/4.09 - Scholven</u>	
404+	1 Alkylation, AT-244	
	February 10, 1941 Report on trip to Uhde office Merseburg Ammonia Plant	7
	October 27, 1941 File Memorandum Subject: AT 244 plant, Scholven, design data	8
	March 13, 1941 Letter: Subject: AT 244 Scholven	3
425+	March 13, 1941 Subject: AT 244 Plant	3
	March 11, 1941 Explanations to AT 244 Plant; Details for plant (2 flow sheets)	12
459+	November 23, 1941 Enlargement of Benzine Extraction and Calor Gas as Separating Plants, Scholven (6 flow sheets, 1 text, and 1 material balance)	8
	August 24, 1942 File Memorandum. Isomerization plants	5
	November 17, 1942 File Memorandum Discussion on AT 244 Plant. (2 flow sheets and 1 material balance)	6
484+	2 T-52 Butane dehydrogenation plant.	
	(no dates) Ten flow sheets on T-52 plant	18
	October 24, 1941 File Memorandum. Steels which may be used as construction material for reaction tubes, (gives composition of recommended steels).	1

<u>Frame</u>	<u>Item</u>		<u>No. of Frames</u>
502+	2	T-52-Butane dehydrogenation plant.	
		December 4, 1942 Report on trip to Merseburg Ammonia Plant. Subject: Dehydrogenation furnace, catalyst "demixing," Slot tubes, Temperature distribution, T-52 questions, Furnishing intermediate contact, Treatment of catalyst for reclaiming. AT plant: Starting up at Leuna, Stabilization of condensate.	4
		November 27) 4 questionnaires on operating conditions of process. (Temperatures, December 4) pressures, gas volume, and others)	4
511+	3	Scholven III or Gladbeck	
		June 9, 1943 A series of letters dealing apparently with a hydrogenation plant. Such data as raw material needs, labor requirements, dimensions of building sites, etc., are given. Four detail drawings of hydrogenation equipment. Several tabulations giving information on such things as production data, cost, energy requirements, auxiliary plants, etc.	63
2. <u>Illegible Frames:</u>			
<u>Bag 2734 Target No. 30/4.11 - Bottrop</u>			
106+	8	Operational Data	
		Analytical data sheets, all in graphical form, recorded daily from January 1943 to May 1944.	7
		Operating data sheets in graphical form recorded daily from June 1941 to May 1944.	31
		Letter requesting permission for construction of a vacuum distillation unit, dated November 25, 1940; Two detailed drawings of requested unit.	4 2
		Operational data sheets in graphical form.	26
<u>Bag 2743 Target No. 30/4.09 - Scholven</u>			
231+	2	Data on Interchangers and Preheaters. June 18, 1937 Discussion on using gas heat for preheaters (including two graphs)	5
<u>Bag 2246 Target No. 30/4.09 - Scholven</u>			
471+	1	December 15, 1942 File Memorandum on AT-244 Plant	6

3. Index to Frames Included in Report

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1+	1	17	1
	Average of monthly operating data and material balances of gas-phase chambers from January 1943 to June 1944		
18+	2	8	2
	Average of monthly chlorine balances of the sludge-phase chambers, from October 1943 to May 1944		
26+	3	18	3
	Average of monthly product balances of sludge-phase chambers, from January 1943 to June 1944		
44+	4	9	4
	Annual Liquid- and Vapor-Phase. Summary of Operation, 1941-1944.		
53+	5	40	
	Research Hydrogenation Coal Extract:		
	A. Report on the Hydrogenation of Coal Extract at 600 Atm. in Chamber 17. November 1-26, 1938		
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	III. Experiments on Hydrogenation of Extract		7
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	C. Hydrogenation of a mixture of extract and fuel oil (1:1) by "straight passage."		19
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	B. Report on Experiments to Convert Coal Paste into a Filterable Mixture		
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93+	6 Production analyses from January - September 1943	11	38
104+	7 Stall Diagrams		
	Location of temperature measurement devices	1	39
	Flow diagram for hydrogenation at Weilheim at 700 atm.	1	40
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183	Flow picture of Pott-Broche Process	1	41
215	Flow diagram for treatment of extract (Pott- Broche Process)	1	42
184	Flow diagram of Pott-Broche Process for manu- facture of electrode coke	1	43
185	Operating results of Pott-Broche Process	1	44
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273+	4 March 6, 1940 Report on trip to Engineering Office, Uhde, Merseburg. Subject: T-52 Plant	8	45
	A. Utilization of waste heat		45
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	C. Sulfur purification		46
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	E. C ₃ -C ₂ column		47
	F. Tank-Level Measurements		48
	G. Hydrogenation		48
1304+	5 Comparison of Products. Gelsenberg and Scholven		
	June 12, 1940 Comparisons of products at various steps of the production cycle	12	51
1321+	June 3, 1940 File memorandum on Determination of Aniline Point in A-Middle Oils, and also Injection Products for 5058 Chambers	6	63

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	6 Costs		
339+	Cost Estimate of VT-705 and T-52 for Jan. 1943	3	66
356+	Production costs - Dec. 1937 - June 1941	9	68
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421+	1 February 4, 1941 Flow sheet and description of AT-244 Plant	4	70
	4 I. G. Catalyst 7019 and Early DHD Process		
574+	August 26, 1940 Comparison of production method for "Aromaten Benzine" (50-55%) by catalyst No. 7019 and by catalyst No. 5058/6434 and dehydrogenation.	1	73
	September 19, 1940 Comparison of production method for "Aromaten Benzine (50-55%) by catalyst No. 7019 and by new catalyst No. 6434 and dehydrogenation.	1	74
576+	September 12, 1940. Gasification by Hydrogenation with Catalyst 7019	2	75
578+	Comparison between 7019 process and DHD process	2	76
580+	May 12, 1941 Heating up of 7019 chambers	6	78
597+	Flow Diagrams: Benzine dehydrogenation, Catalyst 6718 & 6434 Operating conditions, dehydrogenation with catalyst 6718	2	79 81
599+	Material quantities and working hour distribution for 240,000 tons per year of auto benzine Flow sheet of DHD process	1 1	82 83