

UNITED STATES BUREAU OF MINES

CLASSIFIED LIST OF TRANSLATIONS
BY THE COAL HYDROGENATION DEMONSTRATION
PLANT, LOUISIANA, MISSOURI
TO DECEMBER 31, 1946.

Arranged by W. M. Sternberg

THE FOLLOWING TRANSLATIONS ARE OMITTED
FROM THIS CLASSIFIED LIST AND HAVE NOT
BEEN REPRODUCED ON THIS REEL:

T-9	T-97	T-115
T-19	T-108	T-119
T-67	T-114	T-120
<u>T-126</u>		<u>T-136</u>

T-No.		TOM Reel	Pp. or Frames No.
ACCIDENT PREVENTION			
78.	Construction of Hydrogenation Stalls for Explosions.	162	1145-1150
85.	Accident Prevention	130	176-178
121.	Discussion of Two Accidents in Pöltz	9	356-365
141.	Leuna Methods of Rapid Emptying and Pressure Release of Operating Equip- ment filled with Combustible Liquids and Gases, as Means of Prevention of Spreading of Fires.	70	656-657
178	Accidents and Damages in Hydro-Works. Ludwigshafen, 1942.	130	636-638
ACCOUNTING			
133.	Reasons for Creating Special Account- ing Stations in Hydrogenation.	129	2-51
146.	Production Costs of Auto Gasoline and DHD-Feed from Bituminous Coal. Lu, November 1942.	177	1355-1356
148.	Estimate of Cost of Plant Producing 125,000 t/ann DHD-Feed for 100,000 t/ann. High Performance Gasoline from Bituminous Coal, at Ludwigshafen- Oppau.	177	1359-1364
187.	Accounting in Hydrogenation-(abridged translation).	129	57-68

T-No.

195 Directions for Accounting in Hydro-
genation Plants.

TOM Pp. or
Reel Frames
No. 129 69-79

A-DISTILLATION

- 79 - Collected Information on the A-
Distillation Installation & Opera-
tions. Gelsenkirchen gorst 1939-
1943. 5 198-281
- 81- Monthly Operating Sheet- "A"
Distillation. 3 Item No. 8

ANALYSIS

- 11 Padbielniak Gas Analysis. 11

AROMATIZATION

- 181 Dr. Winkler's Report on Aromatization 126 1000-10044
at 700 Atm.

T-No.

TOM Reel No.
Pp. or
Frames

BAFFLES

118. Experiments with Baffles in High-
Pressure Vapor-Phase Hydrogenation
Converters Leuna Werke 21 Dec 1942.

180 836-845

BALANCE

24. Production Balance of the Vapor Phase
Stall 54a (for December 1941)
(Bottrop, Feb 4, 1942).

9 223-229

49. Sulfur Balance (on Hydrogenation Side)
at the Scholven III Installation
(S/t Gasoline and S/h at 250,000 year/
tonne) Scholven, January 10, 1939.

11

BALL KILNS

105. Abstract of Reports on Operating
Experiences with Ball Kilns Leuna
Werke, 5 November 1943.

14 615-637

T-No.

BLEND

TOM
Reel
No.

Pp. or
Frames

- 118 Experiments with Baffles in High-
Pressure Vapor-Phase Hydrogenation
Converters, Leuna Werke, 21 Dec 1942.

180 836-845

BLOWERS

38. Preheater and Blower for 700 Atm.
Liquid Phase, Scholven, III/266.

11

Item No. 9
Bag 2247

BREAKS, FATIGUE

125. Investigation of Occurrence and
Avoidance of Fatigue Breaks in Machine
Parts at Gelsenberg.

5 52-74

CATALYSTS

32. Results of Large Scale Investigation
of Heat Exchange of Paste with K804,
Ludwigshafen, 1941.

130 321-339

35. Computations of the Splitting Stalls
with Catalyst 6434, Hydrogenation
Works, Scholven, March 29, 1938.

5

Bag 2747
Item 18

T-No.

TOM Pp. or
Reel Frames

90. Comparison of Costs of 7019, 5058 and
6434 Stalls. No. 201 624-630
110. Abstract of Report on Increasing the
Oil Yield in Low Temperature Carbon-
ization by the Addition of Catalyst
and Superheated Steam. 163 266-267
127. 6434 Catalyst (VK) in Flowing Circu-
lation Gas by Schwab. 181 6734-6754
140. Comparison of Different Catalysts for
Hydrogenation of Coal Coke Oven Tar
in the Liquid Phase. 7 Beg 2732
143. Industrial Production of Catalyst
5058. Leuna May 3, 1943. 162 877-878
144. Dr. Kronig's Letter Regarding In-
crustation of Preheaters, and the
Action of the Catalysts in Causing
Them. 75 909-912
145. Coal Catalysts (Re: Dr. Kronig's
Letter on "The Genesis of Coal
Catalysts, 2/11/44 T-144). 75 904-908
149. Development of Liquid Phase Catalysts
for Brown Coal. 75 638-639
180. Catalysts in the Production of
Synthetic Fuels from Ocal. By
S. B. Tatarskii, K. K. Papok and
E. G. Semenido. Neftanole Khozyaistvo,
vol. 24, #2, 1946. 52-55
184. Sulfidic Vapor Phase Catalysts,
Especially Tungsten Sulfide in In-
dustrial Coal Hydrogenation. Lecture
by M. Pier, Ludwigshafen, 1943. 130 403-434
185. Operating Experience with Catalyst
7846-W-250 (8376) and a Comparison
with 5058 and a Combination of the
Two Catalysts. Stattin-Pöllitz
November 10, 1943. 130 460-483

T-No.

TOM Reel
Pp. or
Frames
No.

189. Observations on Catalysts for Cracking and Hydrogenation. Carbon Conversion. Lu Nov 22, 1940.
190. Development of Vapor-Phase Hydrogenation and Catalysts Immune to Poison, October 16, 1942.
197. Experiments to determine the Sensitivity to Nitrogen of Catalysts. By Mohr & Simon.
198. Arrangement of Gasoline Converters & Heat Exchangers for Various Catalysts.
199. The Influence of Temperature on the Results of Prehydrogenation (Saturation) with Concentrated and Diluted Catalysts. The Preparation of Such Catalysts.

181 711-716

181 353-359

173 880-884

180 833-835

205 733-737

CATCHPOTS

112. Experiences with Hot Catch Pots. Ludwigshafen/Rh, 2.2, 1945.

9 311-314

T-No.

TOM Pp. or
Reel Frame
No.

CENTRIFUGING, HOLD

161. Experiments to Increase the Centrifugal Effect in Centrifuging Lat-Down. 5 189-196

CHLORINE

42. Dr. Frese Report of April 24, 1939 in Scholven. Operating Experience with the 700 Atm. Installation. The Chlorine Installation. Corrosion, Addition of Sodium Sulphide and Increased H₂S Partial Pressure in the Circulating Gas. 9 384-386.
163. Chlorine in the Vapor Phase Injection Feed, Its Removal and General Orientation in the Operation Details at High Pressure in Scholven, Leuna, 1939. 130 386-402

CIRCULATING GAS

- 42 Dr. Frese Report of April 24, 1939, in Scholven. Operating Experience with the 700 Atm. Installation. The Chlorine Installation. Corrosion, Addition of Sodium Sulphide and Increased the H₂S Partial Pressure in the Circulating Gas. 9 384-386
73. Gas Circulation in the 700 Atm. Hydrogenation Still from the Standpoint of Instrumentation. 9 297-303

T-No.

TOM Pp. or
Reel Frames
No.

COAL, HYDROGENATION BEHAVIOR

- 142 Relationship between the Composition
of Coal and Its Behavior During
Hydrogenation. 181 6589-6594
- 196 Hydrogenation of Rhenish Brown Coal,
Leuna 1940. 129 675-679
- 12 Suitability of Coals for Hydrogenation,
Leuna High Pressure Experiments
October 16, 1942. 24 155-159
- 116 Hydrogenation Properties of Various
Coals. 181 477-481

COAL PASTE

- 32 Results of Large Scale Investigation
of Heat Exchange of Paste with K804,
Ludwigshafen, 1941. 130 321-339
- 34 Specific Heat of Coal Paste and
Middle Oil Ludwigshafen/Rhine,
4-18-1939. 11 Bag 2247
Item 9
- 69 Economics of Paste Heat Exchange of
a Stall, Pöllitz, October 14, 1941. 75 400-416
- 82 Measuring the Viscosity of Pasting
Oil, HOLD and Coal Paste from Scholven
and Leuna Hydrogenation Works. 174 914-921
- 162 Replacing Cold Gas with Coal Paste
(Letter by Schappert) 75 388-389

T-No.

TOM Pp. or
Reel Frames
No.

COMPARISON

25. The Proportions of n-Butane and
1-Butane at 300 and 700 Atm. (Leuna)
April 15, 1941. 126 Bag 2075
20. Comparison of 300 & 700 Atm. Operations
in Leuna - 558 April 16-17, 1941. 126 Bag 2075
Item 121-1
8. Comparison of Gelsenberg and Scholven
Hydrogenation Products, Ruer-Scholven,
June 12, 1940. 10 440-451

COAL PREPARATION

70. Coal Preparation & Residue Operations
at Gelsenberg Benzin A.G. - Visit
April 28, 1944. Pöllitz May 3, 1944. 78 69-72
71. Coal Preparation and Residue Operations
at Hydrogenation Works at Scholven
A. G. Visit of 27 April, 1944. 78 73-75
72. Report on Coal Preparation and Spray-
grain (Spritzkorn). 78 58-68

T-No.

TOM Pp. or
Reel Frames
No.

COMPARATIVE EFFICIENCY

- 138 Comparative Efficiencies of Synthetic Liquid Fuels Production. 181 447-456
- 156 Data for Comparing Hydrogenation with Low Temperature Carbonization (L.T.C.) of Bituminous Coal. By Dr. Fahr, Lu, 24 May 1943. 162 898-900
- 157 Comparison of Coal and Iron Requirements Between Bituminous Coal Hydrogenation and Low Temperature Carbonization (L.T.C.) followed by Hydrogenation. Berlin 21 April, 1943. 164 1122-1126
69 53-56
- 8 Comparison of Gelsenberg and Scholven Hydrogenation Products, Ruer-Scholven June 12, 1940. 10 440-451

CONSTRUCTION

- 31 The Design and Properties of Materials of Hydrogenation of the T52 Installation at Scholven and Pöhlitz (Condensed translation) Ludwigshafen, April 6, 1940. 10 414-422
- 45 Report on a Visit to the Leuna Works Hydrogenation Plant. 130 639-761
- 75 Rules for the Construction of Hydrogenation Stalls. May 19, 1943. 162 865-866

CONVERTERS

- 118 Experiments with Baffles in High-Pressure Vapor-Phase Hydrogenation Converters Leuna Werke, 21 December 1942. 180 836-845
- 53 "Abstract of Report on Technical Experiences in the Operation of a Converter Stall in the Second Half of Year, 1936". 129 165-178

T-No.

TOM Pp. or
Reel Frames
No.

CORROSION

- 42 Dr. Frese Report of April 24, 1939 in Scholven. Operating Experience with the 700 Atm. Installation. The Chlorine Installation. Corrosion, Addition of Sodium Sulphide and Increased H₂S Partial Pressure in the Circulating Gas. 9 384-386

DATA, HYDROGENATION

- 175 Basic Data for the Hydrogenation of Various Raw Materials to Diesel Oil and Gasoline in a Bituminous Coal Hydrogenation Plant. Lu, 14 July, 1938. 126 434-437
- 176 Contributory Data on Rectification, Particularly of Mineral Oils. 163 252-254

DESANDING

- 109 Overcoming Difficulties with Caviar Formation by Desanding of Converter I. Leuna 1941. 130 208-228

DESCRIPTIVE

- 45 Report on a Visit to the Leuna Works Hydrogenation Plant. 130 639-761
- 46 Characteristics of Hydrogenation Works, Ludwigsafen, 1942. 129 654-674

T-No.

TOM Pp. or
Reel Frames
No.

DISMANTLING

165. Report on Dismantling of Stall No. 5,
March 29, 1941.

130 230-245

54. (Large Pilot Plant at Ludwigshafen:) The results Found on Dismantling the High Pressure Stall after the Large Scale Fuel Oil Tests, August-October 1941. (See T-52).

182 949-958

50. Dismantling Report of the Stall 306 after the 3rd Operation Period.
Gelsenkirchen-Horst, 9-2-43.

55. Dismantling Record of Stall 804.
See T-54. Large Pilot Plant at Ludwigshafen:

182 959-967

EQUILIBRIA

47. Equilibria During Coal Hydrogenation April 20, 1942.

181 587-589

7. Approximate Values of Equilibrium Constants.

24 Bag 1928

21. Gas Equilibria in the Coal Stall at 700 Atm. at Scholven III.

1 Bag 2168

Item 11

T-No.

TOM Pp. or
Reel Frames
No.

FILTRATION

132 Erecting a Filter Station for Middle Oil. Bohlen, 12 December 1941.

181 412-416

177 Abstract of Report on Filtration of Coal Hydrogenation Letdown. Leuna 21 July 1938.

130 485-507

FINNED TUBES

64 Report of the Technical Testing Laboratory at Oppau Number 543, Investigation of Finned Tubes.

76 48-68

T-No.

TOM Pp. or
Reel Frames
No.

FITTINGS

60. An Abstract of a Discussion of High Pressure Valves and Fittings, Ludwigshafen, December 10-11, 1942.

76 13-28

FUEL OIL

52. Large Scale Fuel Oil Production Experiments. Tables and Graphs - Reel 181, Pp. 215, 217, 218 and 219.

130 246-320

54. (Large Pilot Plant at Ludwigshafen;) The results Found on Dismantling the High Pressure Stall after the Large Scale Fuel Oil Tests, August-October 1941. (See T-52)

182 949-958

T-No.

TOM
Reel
No.

Pp. or
Frames

GASIFICATION

13. Gasification Data for Gladbeck Works,
Scholven, 1-14, 1941. 11 Bag 224
Item 12
27. Gasification with 700 Atm. in Vapor
Phase. 126 Item 124
73. Gas Circulation in the 700 Atm.
Hydrogenation Stall from the Stand-
point of Instrumentation. 9 297-303

GASOLINE

43. Comparison of the Circulation Washing
and Circulation Purge at 700 Atm. Dr.
Frese (Ruhrol) on April 24, 1939 in
Scholven. 9 Bag 273
113. Different Processes for the Production
of Water Gas. October 18, 1942. 163 27-29
28. Inspection of Gasoline Derived from
Scholven Soft Coal Liquid Phase
Gasoline - Middle Oil Treated in 700
Atm. Vapor Phase Process. 126 985

HARDENING

168. Experience with Nitriding Plungers. 181 6701-
6702
167. Nitride Hardening of Piston Rods &
Plungers. 181 06700

T-No.

TOM
Reel
No.

Pp. or
Frames

HAIRPINS

18. Properties of N10 Material for Hairpin Tubes of a 700 Atm. Preheater. 1

Item 7

26. Calculation of Relationship Between the Temperature of the Material and the Thickness of Incrustation on Paste Hairpins.

4 124-130

HEAT

200. Operating Balance of Koppers Powdered Coal Operations. 188 20951-20960

15. Heat Balance in the Sump Phase Pre-heater-Lutzendorf (High Pressure Experiments, 211, 1942 - Leuna Works). 1

Bag 2168
Item 9

39. Heat Balance and Temperature Relationships of the Liquid Phase, Scholven III/266. 11

Bag 2247
Item 9

139. The Calorific Efficiency of Bituminous Coal Hydrogenation. 57 211-233

134. Calorific Efficiency of Coal Hydrogenation. 163 227

48. Heat Efficiency of the Soft Coal Hydrogenation. 181 507-510

33. Heat Exchange & Preheater of the 700 Atm. Liquid Phase Hydrogenation at Blechhammer Ludwigshafen, Feb 14, 1940. 11

Bag 2247
Item 9

66. Means for Improving Heat Exchangers in the Sump Phase 2/23/46 145 487-488

T-No.	TOM Reel	Pp. or Frames No.
69. Economics of Paste Heat Exchange of a Stall, Pöllitz, October 14, 1941.	75	400-416
80. The Calculation of a High Pressure Heat Exchanger (A Practical Example for Instruction Purposes). No. 22 Short Report by W. Schenker.	111	
131. Fouling on the Suction-Side of 5058 Heat Exchangers. (See also T-128).	124	726-776
130. Water Injection with Spray Nozzles Into Heat Exchanger II of 5058 Saturation Stalls.	181	487-495
128. Abstract of Report on High Resistances on the Suction Side of Heat Exchangers for 5058 Stalls.	129	680-725
198. Arrangement of Gasoline Converters & Heat Exchangers for Various Catalysts.	180	833-835
74. Preheater Problems in the Liquid Phase with Special Consideration of the Heat Pump. A paper by Schappert presented at the colloquium, March 24, 1944.	167	23-27
103. Heat Transfer Coefficients at Different Concentrations and Temperatures.	145	108
61. Approximate Calculations of the Heat Transfer Coefficient of a Preheater.	162	752-756
32. Results of Large Scale Investigation of Heat Exchange of Paste with K804, Ludwigshafen, 1941.	130	321-339

T-No.

HISTORY

		TOM Reel	Fp. or Frames No.
23.	TEA Report on Development of Hydrogenation,	129	179-203
123.	Development of the Liquid Phase Previous to 1933 October 22, 1942.	181	6554-6566
124.	Development of the Liquid Phase Since 1933.	181	6567-6572
190.	Development of Vapor-Phase Hydrogenation and Catalysts Immune to Poison, October 16, 1942.	181	353-359

HIGH PRESSURE VESSELS

137.	Abstract of Report on High Pressure Vessels for Hydrogenation. (See also T-93, 96, 98 and 99).	5	594-604
------	--	---	---------

HOLD

82.	Measuring the Viscosity of Pasting Oil, HOLD and Coal Paste from Scholven and Leuna Hydrogenation Works.	174	914-921
177.	Abstract of Report on Filtration of Coal Hydrogenation Letdown. Leuna, 21 July 1938.	130	485-507

T-No.	TOM Reel No.	Pp. or Frames	
161. Experiments to Increase the Centrifugal Effect in Centrifuging Let-Down.	5	189-196	
87. Hot Oil Let-Down Distillation.	145		Item 7
102. Distillation of Coal HOLD.	77	32-33	

HYDROGEN CONSUMPTION

22. Hydrogen Consumption Data - Bottrop-
Boy, 1941. 136 Item 126

HYDROGENATION, 300 ATM.

20. Comparison of 300 & 700 Atm. Operations
in Leuna 558 April 16-17, 1941. 126 Bag 2075
Item 121-1
25. The Proportions of n-Butane and 1-Butane
at 300 and 700 Atm. (Leuna) April 15,
1941. 126 -Item 122-

T-No.

HYDROGENATION, 700 Atm.

6. Dynamic Solubilities at 700 Atm.

TOM
Reel
No.

24

Pp. or
Frames

Item 1

18. Properties of NiO Material for Hairpin
Tubes of a 700 Atm. Preheater. 1 Item 7
20. Comparison of 300 & 700 Atm. Operations
in Leuna - 558 April 16-17, 1941. 126 Bag 2075
Item 121-1
21. Gas Equilibria in the Coal Stall at 700 Atm.
at Scholven III. 1 Bag 2168
Item 11
25. The Proportions of n-Butane and 1-Butane at
300 and 700 Atm. (Leuna) April 15, 1941. 126 Item 122
27. Gasification with 700 Atm. in Vapor Phase. 126 Item 124
28. Inspection of Gasoline Derived from Scholven
Soft Coal Liquid Phase Gasoline - Middle
Oil Treated in 700 Atm. Vapor Phase Process
(Ruhrol Method)
29. Experimental Work on 700 Atm. Vapor Phase
Operations. 126 Item 127
38. Preheater and Blower for 700 Atm. Liquid
Phase Scholven, III/266. 11 Bag 2247
Item 9
42. Dr. Frese Report of April 24, 1939, in
Scholven. Operating Experience with the
700 Atm. Installation. The Chlorine
Installation. Corrosion, Addition of
Sodium Sulphide and Increased the H₂S
Partial Pressure in the Circulating Gas. 9 384-386
43. Comparison of the Circulation Washing
and Circulation Purge at 700 Atm. Dr.
Frese (Ruhrol) on April 24, 1939 in
Scholven. 9 Bag 2733

T-NO.		TOM Reel	Pp. or Frames
73.	Gas Circulation in the 700 Atm. Hydrogenation Stall from the Standpoint of Instrumentation.	No. 9	297-303
122.	Experiences with 700 Atm. Paste Presses at Bottrop by Chief Eng. Richter, Ruhrol-GMBH.	9	356-365
173	Bituminous Coal Stalls for 700 Atm. Lu, 3 November 1937.	126	442-446
181	Dr. Winkler's Report on Aromatization at 700 Atm.	126	100-1004

INCRUSTATION

26. Calculation of Relationship Between the Temperature of the Material and the Thickness of Incrustation of Paste Hairpins. 4 124-130
144. Dr. Kornig's Letter Regarding Incrustation of Preheaters, and the Action of the Catalysts in Causing Them. 75 909-912

INSTRUMENTATION

63. Instrumentation for the Gas Preheater of the Extract Hydrogenation Stall 17 of the large Scale Pilot Plant at Welheim, March 4, 1937. 5 162-165

T-No.		TOM	Pp. or Reel Frames No.
73.	Gas Circulation in the 700 Atm. Hydrogenation Stall from the Standpoint of Instrumentation.	9	297-303
88.	Abstract of Report on the Automatic Regulation of the Liquid and Vapor-phase Hydrogenation Stalls at Leuna.	130	846-873
91.	Abstract of Report on Advances in Measuring Automatic Control of Operations in High Pressure Plants.	130	762-771
92.	Abstract of Report on the Aid of Physical Control of Operations in the Development and Operation of Hydrogenation Works.	130	772-784

KILNING

105.	Abstract of Reports on Operating Experiences with Ball Kilns Leuna Werke, 5 November 1943.	14	615-637
155.	Working Up of Oil-Containing Residues (Kiln Operations).	126	000843

LARGE-SCALE EXPERIMENTATION

52.	Large Scale Fuel Oil Production Experiments, Tables and Graphs - Reel		
181	Fp. 215, 217, 218 and 219.	130	246-320

T-No.

LAY-OUT

TOM Pp. or
Reel Frames
No.

182. Abstract of Bid on Plant Producing
180000 t/ann. Aviation Gasoline &
3000 t/ann Liquid Gases from Brown
Coal by Catalytic Pressure Hydrogenation,
for Russia.

130 508-558

LIQUID PHASE

39. Heat Balance and Temperature Relationships of the Liquid Phase, Scholven, III/266. 11 Bag 2247 Item 9
15. Heat Balance in the Sump Phase Preheater-Lutzkendorf (High Pressure experiments, 211, 1942 - Leuna Works). 1 Bag 2168 Item 9
66. Means for Improving Heat Exchangers in the Sump Phase. 2/23/45 145 487-488
77. Maximum Preheating in the Liquid Phase, March 31, 1941. 145 489-490
89. Liquid and Vapor Phase Operations. Discussion at Pöllitz March 27-29, 1944. 170 534-547
163. To the Theory of the Liquid Phase. 181 6611-6614
173. Bituminous Coal Stalls for 700 Atm. Lu, 3 November, 1937. 126 442-446
174. Installation of Quadruple Instead of Triple-Coal-Stalls-at-Nordstern. Lu, 3 November 1937. 126 438-441
5. Data of Different Works on Liquid Phase Circuit. 24 Bag 1928

T-No.		TOM Reel No.	Pp. or Frames	
38	Preheater and Blower for 700 Atm. Liquid Phase Scholven, III/266.	11		Bag 2247 Item 9
33	Heat Exchange & Preheater of the 700 Atm. Liquid Phase Hydrogenation at Blechhammer Ludwigshafen, February 14, 1940.	11		Bag 2247 Item 9
59	Continuous Process for the Press Hydro- genation of Coals, Tars and Mineral Oils in Liquid Phase. Ludwigshafen, May 25, 1943.	76	37-46	
41	Preheater for Coal Stall - Gladbeck 11-3-1942.	11		Bag 2247 Item 9
37	Liquid Phase Stall Preheater, Scholven, 2-28-1942.	11		Bag 2247 Item 9

L. T. C.

110	Abstract of Report on Increasing the Oil Yield in Low Temperature Carbon- ization by the Addition of Catalyst and Superheated Steam.	162	1126-1133
-----	---	-----	-----------

MACHINES FOR HYDROGENATION

117	Abstract of Lecture on Machines for Hydrogenation. (See also T-122 & T-125) October 19, 1942.	163	201-211
-----	---	-----	---------

T-No.

TOM Pp. or
Reel Frames
No.

MATERIAL BALANCE

1. Nine Pages of Material Balance Computations Including Property of Materials. (The Production of Aviation and Heating Fuels from Upper Silesian Coal). 143 28-36
2. Record of Scholven Gas Material Balance, dated 1/4/40 (Gasification and Coal Hydrogenation Balance). 11
10. Material Balances, Liquid & Vapor Phases Scholven, November 24, 1938. 11 Bag 2247-12

MIDDLE OIL

34. Specific Heat of Coal Paste and Middle Oil, Ludwigshafen/Rhine, 4-18-1939. 11 Bag 2247 Item 9
51. Summary of Results of Round Table Discussions on the Sulfurization of Middle Oil November 1, 1943. 181 499-501
132. Erecting a Filter Station for Middle Oil Bohlen, 12 December 1941. 181 412-416

N-10

191. Discussions on March 25, 1943 in Leuna of the N-10 Material. 129 Ref. a-2
14. I.G. Specifications for K2A, N5 replacement materials, N8A, N9 and N10 Steel. (I.G. Standards Book)
18. Properties of N10 Material for Hairpin Tubes of a 700 Atm. Preheater. 1 Item 7
94. Present Status of Investigation of Attacks by Hydrogen upon Non-Loaded Test Pieces, as affected by Hydrogen Pressure, the Duration of the Experiment and the Hardening State of Material. 130 628-635 Ref ff
172. Results of Tests of N10 - Leuna, 1943. 130 612-622

T-No.		TOM Reel No.	Pp. or Frames
NITRIDING			
167	Nitride Hardening of Piston Rods & Plungers.	181	06700
168	Experience with Nitriding Plungers.	181	6701-6702
169	Nitrided Plungers & Rods.	181	6703-4
OPERATIONS			
129	High Pressure Operating Problems.	180	849-851
135	General Operating Instructions for Hydrogenation Plants and Special Instructions for High Pressure. Hydrierwerke Pöllitz A.G. - June 1940.	78	170-192
147	Flow Sheet at Lu-Op Plant for Auto Gasoline or 170° C.E.P. Gasoline for DHD from Bituminous Coal. In, 2 Nov. 1942. 177		1357-1358 & 1365
53	"Abstract of Report on Technical Experiences in the Operation of a Converter Stall in the Second Half of Year 1936".	129	165-178
42	Dr. Frese Report of April 24, 1949 in Scholven. Operating Experience with the 700 Atm. Installation. The Chlorine Installation. Corrosion, Addition of Sodium Sulphide and Increased H ₂ S Partial Pressure in the Circulating Gas.	9	384-386
201	Typical Monthly Operating Reports, Geisenberg 1940 & 1941.	3	307 & 315.

T-No.

TOM Pp. or
Reel Frames
No.

89 Liquid and Vapor Phase Operations.
Discussion at Pöhlitz March 27-29, 1944.

170 534-547

PASTE

122 Experiences with 700 Atm. Paste Presses
at Bottrop by Chief Eng. Richter,
Ruhrol-GMBH.

9 356-365

82 Measuring the Viscosity of Pasting Oil,
HOLD and Coal Paste from Scholven and
Leuna Hydrogenation Works.

174 914-921

PATENTS

192 Device for Low Temperature Carbonization
of Carbonaceous Substances, 21 Dec. 1935.
German Patent #699707, Class 10 a, Groupe
2601.

193 Pressure Hydrogenation of Coal or Similar
Solid Carbonaceous Substances. German
Patent #656364, 19 May 1933, and German
Patent #675957, 4 Aug. 1935.

194 Process for Separating Oils from Mixtures
with Solid Substances. German Patent #550157,
26 October 1927, and German Patent #630965,
30 April 1933.

T-No.

TOM Pp. or
Reel Frames
No.

PHENOLS

100. Phenols from Coal Hydrogenation Oils. 5 548-555
106. Phenols. (A brief note by Hirschberger) 163 264-265
107. Production of Useful Phenols During
Hydrogenation of Various Materials
10/15/42. 163 266-267

PISTON-RODS

167. Nitride Hardening of Piston Rods &
Plungers. 181 06700
169. Nitrided Plungers & Rods. 181 06703-4
170. Hardened Plungers & Piston Rods for
High Pressure Machines. Leuna April 30,
1942. 181 06705
171. Hardened Plungers & Piston Rods for High
Pressure Compressors. Gelsenkirchen,
July 7, 1942. 181 06707-06720

—PLUNGERS—

167. Nitride Hardening of Piston Rods & Plungers. 181 06700
168. Experience with Nitriding Plungers. 181 06701-06702
169. Nitrided Plungers & Rods. 181 06703-4

T-No.

TOM Pp. or
Reel Frames
No.

Hardened Plungers & Piston Rods for
High Pressure Machines. Leuna April
30, 1942.

181 06705

171 Hardened Plungers & Piston Rods for
High Pressure Compressors. Gelsen-
kirchen, July 7, 1942.

181 06707-06720

PREHEATER

- 15 Heat Balance in the Sump Phase
Preheater-Lutzkendorf (High Pressure
Experiments, 211, 1942 - Leuna Works) 1 Item 9
- 16 Temperature Equalization in the Lutz-
kendorf Preheater - Jan. 30, 1943. 1 Item 8
- 18 Properties of NiO Material for Hiarpin
Tubes of a 700 Atm. Preheater. 1 Item 7
- 30 Proposed Modifications in the Scholven
Preheater, June 18, 1937. 10 360-366
- 33 Heat Exchange & Preheater of the
700 Atm. Liquid Phase Hydrogenation at
Blechhammer Ludwigshafen, Feb. 14, 1940. 11 Bag 2247
Item 9
- 37 Liquid Phase Stall Preheater, Scholven.
2-28-1942. 11 Bag 2247
Item 9
- 38 Preheater and Blower for 700 Atm.
Liquid Phase, Scholven, III/266. 11 Bag 2247
Item 9
- 41 Preheater for Coal-Stall - Gladbeck
11-3-1942. 11 Bag 2247
Item 9

T-No.		TOM Pp. or Reel Frames No.
56	Report on a Round Table Discussion of Experiences in Preheater Operations, Held at Ludwigshafen, March 22-23, 1943.	76 32-36
57	Report on the Strength of Tube Steel in 700 Atmosphere Preheaters - Ludwigshafen, 2-17-1943.	76 29-31
61	Approximate Calculations of the Heat Transfer Coefficient of a Preheater.	162 752-756
63	Instrumentation for the Gas Preheater of the Extract Hydrogenation Still 17 of the Large Scale Pilot Plant at Welheim, March 4, 1947.	5 162-165
64	Report of the Technical Testing Laboratory at Oppau Number 543, Investigation of Finned Tubes.	76 48-68
68	Mounting Thermo-elements in Electric Preheaters Ludwigshafen on the Rhine January 25, 1943.	162 757-760
74	Preheater Problems in the Liquid Phase with Special Consideration of the Heat Pump. A Paper by Schappert presented at the Colloquium, March 24, 1944.	167 23-43
76	Construction of Preheaters with Horizontal Tubes. Lu, Sept. 27, 1944.	174 833-839
77	Maximum Preheating in the Liquid Phase, March 31, 1944.	145 489-490.
83	Reducing the Load on the Liquid Phase Preheaters.	104 974-806
111	Abstract of Report on Reducing Resistances in Gas-Fired Preheaters.	118 727-736
144	Dr. Kronig's Letter Regarding Incrustation of Preheaters, and the Action of the Catalysts in Causing Them.	75 909-912

T-No.		TOM Reel	Pp. or Frames	
158	Velocity in Preheaters @ 600 Atm. By Oettinger, Lu, 22 Nov. 1938.	No. 126	425-427	
191	Discussions on March 25, 1943 in Leuna of the N-10 Material.	129		Ref a-2

PRESSES

166	Pump and Press Construction Materials.	181	06706
122	Experiences with 700 Atm. Paste Presses at Bottrop by Chief Eng. Richter, Ruhrol-GMBH.	9	336-374

PRODUCERS

113	Different Processes for the Production of Water Gas. October 18, 1942.	163	27-29
151	A Note on Koppers Gas Producer.	43	209
152	Brabag-Zeitz Powdered Coal Gasification.	43	219-224
153	Cost Comparison of the Winkler and the Koppers Powdered Coal Gasification Processes.	43	225-226
154	Operation Costs in the Synthesis Gas Production in Rheinpreussen.	43	260-267

T-NO.	TOM	Pp. or Reel Frames
159 Direct Production of Synthesis Gas from Powdered Fuel.	No. 43	267-268
168 Method of Production of Ammonia Synthesis Gas.	65	119-127
200 Operating Balance of Koppers Powdered Coal Operations.	188	20951-20960

PRODUCT BALANCE

17. Vapor Phase Product Balance, Bottrop, July, 1944 and August, 1944.	9	193-194
24. Production Balance of the Vapor Phase Stall (54a for December 1941) (Bottrop February 4, 1942).	9	223-229

PUMPS

166 Pump and Press Construction Materials.	181	06706
--	-----	-------

T-No.

TOM Pp. or
Reel Frames
No.

REFactories

- 40 Report on the Measurement of Heat Conductivity of Refractory Brick for the Inner Insulation of High Pressure Converters, Report #421, Ludwigshafen. 103
- 44 Report on the Testing of Two Asbestos Cements for High Pressure Insulation. 103

Report
No. H26-430

RESIDUES

- 150 Distillation of 8 te/h of Hydrogenation Residues in Pöllitz. 152 657-658
- 70 Coal Preparation & Residue Operations at Gelsenberg Benzin A.G. Visit of April 28, 1944. Pöllitz, May 1944. 78 69-72
- 71 Coal Preparation and Residue Operations at Hydrogenation Works Scholven, A.G. (Visit of 27 April 1944). 78 73-75
- 155 Working Up of Oil-Containing Residues (Kiln Operations). 126 843
- 160 Residue Processing. 163 125-127
- 104 Abstract of Report on the Processing of Hydrogenation Residues at Wesseling, based on a Visit to Scholven, 3 Jan. 1939 - Leuna Werke 20 Feb. 1939. 14 602-611

T-No.

TOM Pp. or
Reel Frames
No.

SATURATION

199. The Influence of Temperature on the Results of Prehydrogenation (Saturation) with Concentrated & Diluted Catalysts. The Preparation of Such Catalysts.

205 733-737

SEALING RINGS

- 62 Abstract of Technical Report on the Deformation of 120 mm Sealing Rings of N5 material due to inner Pressure and with very tight drawn bolts, dated Ludwigshafen, 12 July, 1926.

181 625-631

SLUDGE

101. Abstract of Report on Sludge Plant Operation. Gelsenberg Benzin A.G.- Dr. Hu. Gelsenkirchen Horst, 17 July 1940.

5 182-188

SOLUBILITIES

- 6 Dynamic Solubilities at 700 Atm.

24

Bag 1928

T-No.

TOM Pp. or
Reel Frames
No.

SPECIFIC HEATS

34. Specific Heat of Coal Paste and Middle Oil Ludwigshafen/Rhine, 4-18-39.

11

Bag 2247
Item 9

SPLITTING

- 186 Methane Splitting in the K' plant at Heydebreck.
- 35 Computations of the Splitting Stalls with Catalyst 6434, Hydrogenation Works, Scholven. March 29, 1938.
- 36 Installation for the Splitting Stall and Construction Steps 20 and 21. Layout of splitting Stall 6434, Scheme No. N6151-2, Nordstern.

65 104-114

5

Bag 2747
Item 18

5 4-14

—SPRAY-GRAIN—

72. Report on Coal Preparation and Spray-
Grain (Spritzkorn).

78 58-68

T-No.

TOM Pp. or
Reel Frames
No.

72. Report on Coal Preparation and Spray
Grain (Spritzkorn).

78 58-68

STARTING UP AND SHUTTING DOWN

164 Starting Up and Shutting Down Stalls.

130 112-134

STEAM

110 Abstract of Report on Increasing the
Oil Yield in Low Temperature Carbon-
ization by the Addition of Catalyst
and Superheated Steam.

162 1126-1133

STEELS

57. Report on the strength of Tube
Steel in 700 Atmosphere Preheaters
Ludwigshafen 2-17-1943.

76 29-31

58. Composition and Properties of German
Steels.

87 Item 124

62. Abstract of Technical Report on the
Deformation of 120 mm Sealing Rings
of N5 Material due to inner pressure
and with very tight drawn bolts
dated Ludwigshafen, 12 July, 1926.

130 772-784

T-No.		TOM	Pd. or Reel Frames	No.
84.	Testing of Materials (Steel).	130	175-178	
85.	Steels Used in Hydrogenation.	163	221-226	
93.	Abstract of Remarks About Materials in Hydrogenation and Their Supply by Steelworks.	130	623-627	
94.	Present Status of Investigations of Attacks by Hydrogen Upon Non-Loaded Test Pieces, as affected by Hydrogen Pressure, the Duration of the Experiment and the Hardening State of Material.	130	628-635	
96.	Abstract of Report on Construction Materials for Hydrogenation.	130	591-596	
98-A	Abstract of Lecture on High-Pressure Steels (See also T-93 and T-96).	130	597-611	
172.	Results of Tests of N10 - Leuna, 1943.	130	612-622	
179.	I.G. Construction Steels (Abstract)	130	559-587	
18.	Properties of N10 Materials for Hairpin Tubes of a 700 Atm. Preheater.	1		Item 7
18.	I.G. Specifications for K2A, N5 replacement Materials, N2A, N9 and N10 Steel. (I.G. Standards Book).			

SULPHUR

49.	Sulfur Balance (on Hydrogenation Side) at the Scholven III Installation (S/t Gasoline and S/h at 250,000 Year/tonne) Scholven, January 10, 1939.	11	Bag 2247 Item 12
51.	Summary of Results of Round Table Discussions on the <u>Sulfurization of Middle Oil</u> - November 1, 1943.	181	499-501

T-No.

TOM Reel
Rp. or
Frames
No.

TEMPERATURE

- | | | | |
|----|--|-----|--------------------|
| 16 | Temperature Equalization in the Lutzkendorf Preheater - Jan. 30, 1943. | 1 | Item 8 |
| 68 | Mounting Thermo-elements in Electric Preheaters. Ludwigshafen on the Rhine January 25, 1943. | 162 | 577-580 |
| 39 | Heat Balance and Temperature Relationships of the Liquid Phase, Scholven, III/266, | 11 | Bag 2247
Item 9 |

THERMOCOUPLES

95. Pressure-tight Closure for Thermocouples. 192

VALVES

- | | | | |
|----|---|----|-------|
| 60 | An Abstract of a Discussion of High Pressure Valves and Fittings, Ludwigshafen, December 10 - 11, 1942. | 76 | 13-28 |
| 65 | Report on a Letdown Needle-Valve Stettin-Pölitz, 21 October, 1942. | 78 | 13-21 |

T-No.

TOM Fp. or
Reel Frames
No.

VAPOR PHASE

17. Vapor Phase Product Balance, Bottrop,
July, 1944 and August, 1944. 9 193-194
24. Production Balance of the Vapor Phase
Stall (54a for December 1941)
(Bottrop, February 4, 1942). 9 223-229
27. Gasification with 700 Atm. in Vapor Phase. 126 Item 124
28. Inspection of 700 Atm. Vapor Phase Gasoline. 126 985
29. Experimental Work on 700 Atm. Vapor
Phase Operations. 126 Item 127
88. Abstract of Report on the Automatic
Regulation of the Liquid and Vapor-
Phase Hydrogenation Stalls at Leuna. 130 846-873
89. Liquid and Vapor Phase Operations.
Discussion at Pölitz - March 27 - 28,
1944. 170 534-547
118. Experiments with Baffles in High-
Pressure Vapor-Phase Hydrogenation
Converters, Leuna Werke 21 December 1942. 180 836-846
198. Arrangement of Gasoline Converters &
Heat Exchangers for Various Catalysts. 180 833-835
4. Data of Different Works on Vapor Phase
Circuit. 24 Beg. 1928

T-No.

TOM Pp. or
Reel Frames
No.

VISCOSITY MEASUREMENTS

- 82 Measuring the Viscosity of Pasting Oil, HOLD and Ccal Paste from Scholven and Leuna Hydrogenation Works.

174 914-921

WASHING OF GAS

- 43 Comparison of the Circulation washing and Circulation Purge at 700 Atm.
Dr. Frese (Ruhrol) on April 24, 1939
in Scholven.

9 375-383

WASHING OF OIL

- 3 Wash Oil Inspection - Scholven.

24

Bsg 1928

WATER GAS

- 113 Different Processes for the Production of Water Gas. October 18, 1942.

163 27-29

T-No.

WICKELMANTEL

99. Abstract of Discussion on Spiral-Wound
High Pressure Jackets. (Wickelmantel)
Lu, 25 May, 1939.

TOM Pp. or
Reel Frames
No.

129 134-141