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(Original Designation FIAT Reel J-281)
PB 74562
Documents taken from Henkel & Cie, Düsseldorf

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2349-2400 97

Activity Report No. 8, May-July 1935, Section 51, signed by Schnitzspahn. 51 pp. The report bears the general title "Changes in the presence of perchloric acid" and contains the following index of its contents:

A. Work carried out:

1. Preparation of iso-butylphenol. Page 2.
2. Preparation of iso-dodecyl-p-phenol chloride. Page 4.
3. Preparation of di-isobutyl-o-cresol. Page 5.
4. Preparation of di-isobutyl-p-phenol chloride. Page 7.
5. Investigation of the reaction of 1, 10 decanediol with p-phenol chloride. Page 9.
6. Experiments on the preparation of cyclohexyl phenylpropylalcohol. (Patent example.) Page 10.
7. Preparation of dodecene. Page 13.
8. Sulfonation of dodecyl-o-cresol and octyl-o-cresol. Page 13.
9. Investigation of gasoline, condensation to "Saptenols" (using cresol and perchloric acid) and hydrogenation of "Saptenols" to "Saptols." Page 14.
 - a. Crack gasoline A, Holland.
 - b. Crack gasoline B, Holland
 - c. Crack gasoline, Deurag.
 - d. Crack gasöl, Deurag, June 1, 1935.
 - e. Crack gasöl, Deurag, June 27, 1935.

B. Current work:

1. Hydrogenation of "Saptenols" and sulfonation of "Saptols." Page 40a.
2. Condensation of crack gasöl with cresol. Page 44.

(Graphs and tables included in report.)

2401-2416 98

Activity Report No. 9, Aug.-Oct. 1935, Section 51, signed by Schnitzspahn. 16 pp.

The following index of the contents of the report appears on the first page:

A. Work carried out:

1. Preparation and yield of "Saptenol" 531. (See Zwischenbericht of Sept. 14 and Sept. 27, 1935).
2. Soapstock-whale oil fatty acid distillation. (See Zwischenbericht of Sept. 20, 1935.)

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3. Determination of the corrosion resistance of copper in the preparation of "Saptenol." Page 2.
4. Treatment of crack gasol, distillation and condensation. Page 5.
5. Treatment of crack gasol with perchloric acid. Page 7.
6. Treatment of Deurag crack gasoline with perchloric acid. Page 8.
7. Treatment of Deurag crack gasoline with perchloric acid and xylol. Page 8.

(Items 1 and 2 in Group A are not included in report.)

B. Current work:

1. Preparation of perhydro-dicresylmethane-boric acid ester.
2. Investigation of the unsulfonated part of "Saptol", preparation of "Saptol" esters, adhesive substances and lubricant-like products. Page 12.
3. Preparation of "Saptenol" and "Saptol" from Ersag crack gasoline.

(Items 1 and 3 in Group B are not included in report, but a section on the sulfur content and de-sulfurization of "Saptenols" appears, beginning on page 10.)

2417-2428 99

Activity Report No. 11, Feb.-April 1936, Section 51, signed by Schnitzspahn. 12 pp.

The following index of the contents of the report appears on the first page:

Work carried out:

1. Paraffin oxidation. (See Zwischenbericht of Feb. 21, 1936.)
2. Paraffin oxidation. Experiments on the control of results obtained in Item 1. Page 2.
3. Oxidation of hard paraffin. Page 11.
4. Treatment of cooling liquid. (See Zwischenbericht of May 6, 1936.)

(Items 1 and 4 are not included in report.)

2429-2464 100

Activity Report No. 12, May-June 1936, Section 51, signed by Schnitzspahn. 35 pp.

The following index of the contents of the report appears on the first page:

1. Treatment of the cooling liquids of the paraffin oxidation carried out by Dr. Mannes and from the operation tests in Witten. Page 2.

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2. Investigation of extraction gatsch. Page 14.
3. Investigation of the determination of the hydroxyl number of oxy acids according to the work of Dr. Hintermaier. Page 15.
4. Investigation of the determination of the ester number in paraffin acids. Page 16.
5. Tests on the de-hydroxylation of paraffin acids. Page 19.
6. Hydrogenation of paraffin oxidation products:
 - a. Oxides. Page 22.
 - b. Acids. Page 26
7. Chlorination of gatsch and conversion of the chlorination products. Page 31.
8. Treatment of whale oil according to the specifications of Dr. Ittner, Chief Chemist of Colgate, U.S.A. Page 32.
9. Preparation of p-n-dodecyl-cyclohexanol. Page 34.

2465-2479

101

Activity Report, Jan.-March 1937, Section 51, signed by Weldes. 14 pp.

The following index of the contents of the report appears on the first page:

1. Peroxides:
 - a. Percarbonates. Page 2.
 - b. Persulfate for the Schmidt distillation. Page 3.
 - c. Cooling liquid for plants. Page 7.
 - d. "Haftax" anodes. Page 9.
 - e. Preparation of per-salts according to Germ. Pat. Appl. S107939 of H. Schmidt. (One diagr. and graph attached.) Page 11.
2. Sodium silicate (water glass). "Krisit" crystallization. Page 12.

2480-2488

102

Activity Report, April-June 1937, Section 51, signed by Weldes. 9 pp.

The following index of the contents of the report appears on the first page:

1. Peroxides:
 - a. Percarbonates. Page 2.
 - b. Persulfate electrolysis. Page 4.
 - c. Schmidt distillation. (Germ. Pat. Appl. S108,069.) Page 3.
 - d. Cooling liquid for plants. Page 6.
 - e. Perborate electrolysis. Page 8.
2. Water glass:
 - a. "Trax" colors. Page 9.
 - b. Metal silicate. Page 9.

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<u>Frames</u>	<u>Item</u>	
2489-2498	103	Activity Report, July-Sept. 1937, Section 51, signed by Weldes. 9 pp. The following index of the contents of the report appears on the first page: 1. Peroxides: a. Percarbonates. (One graph attached.) Page 2. b. Schmidt distillation. (Germ. Pat. Appl. Sch 107,364.) Page 5. c. "Haftax" anodes. Page 9. 2. Sugar reduction. Page 9.
2499-2507	104	Activity Report, Oct.-Dec. 1937, Section 51, signed by Weldes. 9 pp. The following index of the contents of the report appears on the first page: 1. Peroxides: a. Percarbonates. Page 2. b. Schmidt distillation. Page 6. c. Obtaining peroxides over azo compounds. Page 6. 2. Sugar reduction. Page 6.
2508-2517	105	Activity Report, July-Dec. 1938, Section 51, signed by Weldes. 8 pp. Report includes the following: 1. Persulfate electrolysis: a. Diaphragms. Page 1. b. Schmidt electrolyzer. Page 1. c. Diaphragm electrode according to Schmidt, Germ. Pat. Appl. Sch 114,710. (One diag. attached.) Page 2. d. Electrolyte measurement. (One graph attached.) Page 2. 2. Percarbonates. Page 4. 3. Perborates: a. Determination of heat of crystallization. Page 5. b. Perborate preparation process. Page 5. 4. Working up of used nickel catalyst. Page 7. 5. Electrolytic soap-splitting. Page 8.
2518-2526		Activity Report, Jan.-March 1938, Section 51, signed by Weldes. 9 pp. Report included the following: 1. Operation tests in Section 45/6. Page 1. 2. Laboratory experiments: a. Purification of electrolytes. Page 2.

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- b. Electrolysis with Schmidt electrolytes. Page 4.
- c. Diaphragm tests. Page 6.
- d. Substitute material for "Koroseal." Page 9.

2527-2532

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Activity Report, Jan.-March 1939, Section 51, signed by Weldes. 6 pp.

Report includes the following:

1. Persulfate electrolysis:
 - a. Diaphragms--"Spül" cathode according to Schmidt. Page 1.
 - b. Schmidt installation in Section 45/6. Page 1.
2. Percarbonates:
 - a. Improvement of stability. Page 2.
 - b. Preparation of percarbonates according to DEGUSSA. Page 6.
3. Electrolytic soap-splitting. (See Special Report of April 4, 1939.) Page 6. (Item 3 not included in report.)

2533-2546

107

Activity Report, July-Sept. 1939, Section 51, signed by Weldes. 11 pp.

Report includes the following:

1. Boron minerals. Page 1.
2. Percarbonates (electrolytic preparation):
 - a. Operation tests in Section 45/7. Page 2.
 - b. Laboratory tests. (One graph, two tables included.) Page 2.
3. Persulfate electrolysis:
 - a. Diaphragm cell according to Schmidt. (One graph included.) Page 7.
 - b. Diaphragm tests. (Four photos included.) Page 8.
4. Electrolytic purification. Page 9.
5. Change of "Omag" into triphosphate. (See report of Sept. 29, 1939.) Page 11.

2547-2555

108

Activity Report, Oct.-Dec. 1939, Section 51, signed by Weldes. 9 pp.

Report includes the following:

1. Change of pyro into ortho phosphate:
 - a. Laboratory tests for the "Omag" hydrolysis. Page 1.
 - b. Operation tests in the "Omag" oven of Section 53. Page 1.
2. Percarbonate preparation:
 - a. From barium peroxide. Page 2.
 - b. From Na_2O_2 . Page 3.
3. Diaphragms for persulfate electrolysis. Page 7.
4. Schmidt installation in Section 45/6. Page 8.

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5. Sodium silicate (water glass):
 - a. "Krisit" investigations for Section 50. Page 8.
 - b. Solubility of solid water glass in water. Page 8.
 - c. Water glass for camouflage. (See notice of Dec. 29, 1939.) Page 9.

2556-2573 109

Activity Report, Jan.-March 1940, Section 51, signed by Weldes. 17 pp.

Report includes the following:

1. Percarbonates:
 - a. Laboratory tests. (one large table included) Page 1.
 - b. Operation tests in Section 45/7. (One large table and one graph included.) Page 8.
2. Persulfate electrolysis:
 - a. Diaphragm tests. Page 12.
 - b. Acid purification. Page 14.
 - c. Schmidt installation. Page 14.
3. Boric acid. Page 15.
4. Whitewashing. Page 15.
5. Water glass filtration. Page 15.
6. Patent objections. Page 16.

2574-2585 110

Activity Report, April-July 1940, Section 51, signed by Weldes. 12 pp.

Report includes the following:

1. Percarbonates:
 - a. Operation tests. Page 2.
 - b. DEGUSSA process. Page 2.
2. Persulfates--electrolysis, diaphragms. Page 3.
3. Hydrogen peroxide:
 - a. Concentration of H₂O₂ solutions. Page 3.
 - b. Hydrogen peroxide formation from H₂ and O₂ gas mixtures by electrical discharge. Page 4.
4. Borax purification, Page 5.
5. Water glass section. Page 6.
6. Sodium chlorite. Page 7.
7. Sulfate waste water from the paraffin oxidation. Page 8.
8. Preparation of emulsions from fatty acid distillation residues. Page 8.
9. Patents. Page 11.

2586-2597 111

Activity Report, Jan.-June 1941, Section 51. 11 pp.

The following index of the contents of the report appears on the first page:

1. Hydrogen peroxide:
 - a. Distillation tests for the Schmidt installation.
 - b. Diaphragm tests for the Schmidt installation.

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2. Water glass:
 - a. Treatment of sand with caustic soda.
 - b. Sodium silicate with alkali excess.
 - c. Egg conservation.
 - d. Water glass as dye binder.
 - e. Phosphate--alkali mixture.
 - f. Sodium sulfate from Witten for water glass.
 - g. Oven gas investigation by heating with UV (Unsaponifiable) Mersol.
 - h. Work planned.
3. Phosphate treatment according to the thermal process.
4. Sodium chlorite.
5. Potentiometric work.
6. Patents.

2598-2617

112

Quarterly Report, Oct.-Dec. 1937, Section 51, signed by Wolter. 20 pp.

The following index of the contents of the report appears on the first page:

1. Working up of Witten soap glue:
 - a. Extraction with perchlorethylene:
 - 1.) Course of the extraction without alcohol addition.
 - 2.) Course of the extraction with alcohol addition.
 - 3.) Foam formation in distillation of the soap solvents.
 - 4.) Driving off the perchlorethylene.
 - 5.) Differences in the working up of old and fresh soap.
 - 6.) Results of the extraction tests.
 - 7.) Classification of the U.V. (unsaponifiable) values of the perchlorethylene extraction tests.
 - b. Extractions with trichlorethylene:
 - 1.) Explosion phenomena in the working up of fatty acid--trichlorethylene mixtures.
 - 2.) Extractions with 1,5 vol. parts trichlorethylene.
 - 3.) Extractions with 2 vol. parts trichlorethylene.
 - 4.) Classification of the U.V. (unsaponifiable) values of the trichlorethylene extraction tests.
 - c. Extractions with benzol and with benzine
2. Tests on the preparation of isopropenyl-glycol ether:
 - a. Action of ethylene oxide on acetone under pressure.
 - b. Action of ethylene oxide without pressure.
 - c. Result of these tests.

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		3. Conversion of melamine with acid chlorides: a. Preparation of tristearyl melamine. b. Preparation of trilauryl melamine. c. Preparation of tricapranyl melamine. 4. Preparation of C-sulfo acids.
2618-2633	113	Quarterly Report No. 5, Oct. 1-Dec. 31, 1938, Section 51, signed by Wolter. 12 pp. The following index of the contents of the report appears on the first page: 1. Continuous fat-splitting. 2. Feeding pigs with fat from first-run fatty acids. 3. Preparation of synthetic fats. 4. Deacidifying fish oil by esterification. 5. Various preparations. 6. Patent examples for the use of amido sulfonic acid. (One diagram and several tables included in report.)
2634-2644	114	Quarterly Report No. 6, Jan. 1-March 31, 1939, Section 51, signed by Wolter. 9 pp. The following index of the contents of the report appears on the first page: 1. Separation of saturated and unsaturated compounds. (See report of Feb. 21, 1939.) 2. Process for the preparation of fatty acid esters. (See report of March 21, 1939.) 3. Investigation of the synthetic fats of M.S.J. (See report of March 24, 1939.) 4. Tests on continuous fat-splitting according to German Pat. Appl. 657,938. Second report. 5. Feeding pigs with fats from first-run fatty acids. Third report. (One diagram and two tables are included with report. The first three items mentioned do not appear.)
2645-2662	115	Quarterly Report No. 7, April 1-June 30, 1939, Section 51, signed by Wolter. 13 pp. The following index of the contents of the report appears on the first page: 1. Continuous fat-splitting according to German Pat. Appl. 657,938. 2. Synthetic fats: a. Fatty acid purification. b. Fat refining. c. Testing of fats. 3. Process for the elimination of impurities from fats and process for the fractionation of fatty acids. (See special report of May 17, 1939.) (Several tables and graphs included in report. Last item does not appear.)

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2663-2673	116	Quarterly Report No. 10, Jan. 1-March 30, 1940, Section 51, signed by Wolter. 10 pp. The following index of the contents of the report appears on the first page: <ol style="list-style-type: none">1. Synthetic fats and their physiological valuation. (See special report of Feb. 8, 1940.)2. Review of the synthetic fats prepared during Jan.-March 1940.3. Process for the elimination of impurities from fats and process for the fractionation of fatty acids. III. (See report of March 12, 1940.)4. Tests on the preparation of acid chlorides. (Several tables included in report. Items 1 and 3 do not appear.)
2674-2685	117	Quarterly Report No. 11, April 1-June 30, 1940, Section 51, signed by Wolter. 12 pp. The following index of the contents of the report appears on the first page: <ol style="list-style-type: none">1. The OXO synthesis:<ol style="list-style-type: none">a. Conversion of olefins with synthesis gas at various temperatures.b. Synthesis with crack paraffins.c. Synthesis with unsaturated alcohols.d. Synthesis with unsaturated acids.e. Synthesis with unsaturated aldehydes.f. Synthesis with unsaturated ketones.g. Synthesis with cyclic olefins.2. Tests on the preparation of carboxylic acid chlorides from paraffins.
2686-2697	118	Quarterly Report No. 12, July 1-Sept. 30, 1940, Section 51, signed by Wolter. 12 pp. The following index of the contents of the report appears on the first page: <ol style="list-style-type: none">1. Separation of the water-soluble lower fatty acids. (See report of Sept. 25, 1940.)2. Synthetic fats:<ol style="list-style-type: none">a. Preparation of new fats.b. Tests on increasing the storagability and improving the odor of synthetic fats.3. Addition of carbon monoxide and hydrogen to olefins:<ol style="list-style-type: none">a. Preparation of alcohols.b. Conversion of crack olefins.c. Addition of synthesis gas to "Plus-Pacura" crack distillate. (See report of Sept. 26, 1940.) <p>(Several tables included in report. Item 1 and part c of item 3 do not appear.)</p>

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2698-2717	119	<p>Quarterly Reports No. 13 and No. 14, Oct. 1, 1940-March 31, 1941, Section 51, signed by Wolter. 20 pp.</p> <p>Of the approximately twenty reports listed in the index of Quarterly Reports No. 13 and No. 14, only the following appear:</p> <ol style="list-style-type: none"> 1. The production of synthetic fats. 2. The OXO synthesis: <ol style="list-style-type: none"> a. The separation of olefins-paraffins. b. The separation of alcohols--paraffins. 3. The OXO synthesis with olefins from Mersol. 4. The OXO synthesis with olefins from unsaponifiable Mersol.
2718-2720	120	Notes for the fixation of the paraffin oxidation process, signed by Dr. Lange, dated May 25, 1937, Section 51, 3 pp.
2721-2726	121	Process for the preparation of synthetic fatty acids by the oxidation of paraffins according to the method used in Witten at the present time. Report from Deutsche Fettsäure Werke G.m.b.H., Witten, dated Oct. 24, 1939. 6pp.
2727-2732	122	Apparatus for process described in Item 121. Report dated Feb. 10, 1940. 6 pp.
2733-2744	123	Process for the preparation of synthetic fatty acids by the oxidation of paraffin hydrocarbons. Report from Deutsche Fettsäure Werke G.m.b.H., Witten, dated Feb. 19, 1940. (Report of the apparatus used is included.) 12 pp.
2745-2748	124	List of patents and patent applications for the protection of the process concerned in Items 121-123. List dated April 13, 1940 and signed by Raecke. 4 pp.
2749-2753	125	Arrangement of the patent rights of Henkeland Cie, G.m.b.H. to the paraffin oxidation process. Report signed by Raecke, dated April 15, 1940. 5 pp.
2754-2776	126	List of the patents and patent applications of I.G. Farbenindustrie A.G. for the protection of the paraffin oxidation process. List dated May 24, 1940. 23 pp.
2777-2793	127	Work on the paraffin oxidation. Report by Dr. Mannes, dated Feb. 25, 1941. 17 pp. (Tables referred to in report not present.)
2794-2800	128	Present status of the work of Section 51 on the obtaining of by-products from the paraffin oxidation. Report by Dr. Mannes, dated Sept. 13, 1943. 7 pp.

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2801-2812	129	Conference of April 1, 1936 concerning paraffin oxidation. Report of proceedings, signed by Dr. Mannes, dated April 6 1936. 12 pp.
2813-2829	130	Summarizing report on the paraffin oxidation work done in the Witten model plant up to June 26, 1934. Report by Dr. Eibel, dated July 6, 1937. 17 pp.