wig and R. R. Joiner. *Arch. Biochem. 7,* 415-25 (1945). A number of saturated and unsaturated fatty acids and related compounds were tested for their fungistatic and fungicidal activity. The long chain saturated and unsaturated fatty acids were superior to other acids and related derivatives both in their inhibition of fungous growth and killing of fungous spores.

THE HYDROLYSIS OF FATS BY MEANS OF PHOSPHORIC ACID. Xavier Gueniot. *Bull. mat. grasses inst. colonial Marseille 27,* 167-74 (1943); *Chem. Zentr. 1944,* I, 1444. Fat is hydrolyzed with H_3PO_4. The speed of hydrolysis depends on the acid concentration up to a maximum of 12% acid; at which hydrolysis is obtained in 2 hrs. at 200°. The reaction is slow at the start, accelerates and then toward the end strives asymptotically to a maximum. Up to 150° there is almost no hydrolysis; above that the reaction is significant. Reagents that usually improve hydrolysis have little influence, except that bentonite improves it considerably. Glycerides of lower fat acids are hydrolyzed more easily than those of higher fat acids; glycerides of unsaturated acids more easily than those of saturated acids. The presence of phosphatides promoted hydrolysis; slime and pectins hindered it. The fat acids obtained are clear and their molecular structure is unchanged. Glycerol can be completely recovered. The speed of the reaction is equal if not greater than that of the other best processes. The application of H_3PO_4 in place of H_2SO_4 for hydrolysis, therefore, appears advantageous. (*Chem. Abs. 39,* 3444.)

PATENTS

REGENERATION OF CATALYTIC MATERIAL. F. E. Frey (Phillips Petroleum Co.). *U. S. 2,381,659.* A process for the regeneration of sulfurpoisoned solid contact metal and metal oxide hydrogenation catalysts comprises contacting the catalyst with a solution of one metal nitrate to convert water insoluble S to a soluble form, roasting the catalyst in air at 600-700°F. to drive off gases and form oxides, cooling the catalyst and contacting it with an aqueous solution of an alkali metal carbonate to convert soluble salts of the catalyst metal to insoluble carbonates, washing away the soluble material with water, and drying the catalyst prior to re-use.

MINERAL OIL COMPOSITION AND IMPROVING AGENT. O. M. Reiff and J. J. Glammaria (Socony-Vacuum Oil Co., Inc.). *U. S. 2,357,359.* An improved mineral oil composition contains a minor proportion of a phosphite ester of wax-substituted phenol carboxylic acid. The pour point and viscosity are improved.

FLOTATION REAGENT. E. H. Hoag. *U. S. 2,371,292.* A flotation reagent for the concentration of barite ores comprises tall oil, lauric-acid- ester-diethylene glycol-ammonium sulphate and an alcohol selected from the group consisting of hexanols, heptanols, octanols, non-anols, decanols and dodecanols.

PETROLEUM DEMULSIFIERS. M. De Groote and B. Keiser (Petrolite Corp., Ltd.). *U. S. 2,381,576-7.* These are certain subresinous esterification derivatives of acylated polyamines.

PETROLEUM DEMULSIFIERS. M. De Groote and B. Keiser (Petrolite Corp., Ltd.). *U. S. 2,381,115-6.* These are certain subresinous esterification derivatives of high molal hydroxy acid amides.

PETROLEUM DEMULSIFIERS. M. De Groote and B. Keiser (Petrolite Corp., Ltd.). *U. S. 2,381,117.* These are ester-linked acyl amides.

PETROLEUM DEMULSIFIERS. M. DeGroote and B. Keiser (Petrolite Corp., Ltd.). *U. S. 2,381,118.* These are certain ester-linked acylated derivatives of polyamino ether alcohols.

Abstracts

Drying Oils

Edited by
HOWARD M. TEETER

OITICICA OIL IN THE PAINT INDUSTRY. L. Huffman. *Am. Paint J. 29,* No. 50, 48-54 (1945). A review.

THE FUTURE OF SOYBEAN OIL. O. H. Alderks. *Chem. Eng. News 23,* 1168-70 (1945). A review; 19 references.

SATURATED FATTY ACIDS OF TALL OIL. H. Bergstrom and K. G. Trobeck. *Svensk Pappenstidn. 48,* 302 (1945). A brief note indicates the possible existence of carnaubic acid ($C_{24}H_{48}O_2$) in tall oil. (*Chem. Abs. 39,* 4238.)

RESEARCH DEVELOPMENTS IN SOYBEANS AT THE NORTHERN REGIONAL RESEARCH LABORATORY. A. K. Smith and J. C. Cowan. *Soybean Digest 5* (11) 43-44 (1945). A method for conjugating soybean and other oils by heating them with a carbon-black nickel catalyst is described. The treated oils, called "Norconols," contain 30 to 35 percent conjugation. In the case of soybean oil, the treated oil sets-to-touch 2 to 3 times faster than alkali-refined soybean oil, and its polymerization rate is approximately equal to that of linseed oil. The use of soybean meal as an extender for phenolic resin plywood glue is also described.

DRYING OILS FROM SORBITOL AND LINSEED FATTY ACIDS. J. D. Brandner, R. H. Hunter, M. D. Brewster and R. E. Bonner. *Ind. Eng. Chem. 37,* 809-12 (1945). Sorbitol was esterified with linseed fatty acids, and the rate of reaction and degree of esterification were determined. The rate of reaction was measured by the first-order rate constant and was found approximately to double when the temperature was raised from 180° to 200° C. The rate also increased with an increase in the ratio of linseed fatty acid to sorbitol, and acetates, carbonates, oxides and hydroxides of calcium and barium were effective catalysts. About 0.5% of a mixture of calcium acetate (3 parts) and barium acetate (1 part) approximately doubled the rate for all ratios of fatty acid to sorbitol. The degree of esterification increased with an increase in the ratio of fatty acid to sorbitol and increased with a decrease in reaction temperature. Sorbitol drying oils of different degrees of reaction were reduced, by vacuum stripping, to approximately equal acid numbers of 8.8 to 11.2, and phenolic varnishes were prepared from each and compared. Only slight improvement in the properties was found for varnishes from oils prepared from more than 4.5 moles of fatty acid per mole of sorbitol. A sorbitol drying oil having this optimum ratio of 4.5 was compared with analogous oils made from mannitol, pentaerythritol and glycerol and with refined linseed oil. Films from the bodied oils and from 50 gallon oil length ester gum varnishes were examined. The sorbitol product was superior to the others in drying time, equal to pentaerythritol in alkali resistance, and superior to linseed oil in hardness and alkali resistance.

ACTION OF VARIOUS ARTIFICIAL DRIERS ON THE OXIDATION AND DRYING OF SARDINE OIL. E. Otero Henlle and M. D. Garcia Pineda. *Inst. espan. oceanografia, Notas y resumenes, Ser. 2, No. 119,* 56 pp. Anales fis. quim. (Spain) *389,* 975 (1944). In general, resinates are prepared by interaction of the calculated quantity of metal hydroxide with rosin; ¾ of the rosin is melted at 180°, and an intimate powdered mixture of the remaining rosin and the hydroxide is added in small portions with vigorous stirring during 2-3 hours. After incorporation of the metal, the mixture is raised to 200-220° until a small test portion remains transparent when cool. For lead resinate, litharge is used, and for copper, calcium and zinc resinates (because the oxides are difficult to incorporate in the rosin), glass panels containing the drained oil films are exposed to diffuse light, in the dark, and in moist air. Curves and tables show the film weights as a function of time and drier content for resinates of manganese, cobalt, copper, lead, iron, cerium, calcium, zinc, chromium, and nickel. It is concluded that cobalt drier is the most active, cobalt-lead being excellent for fast-drying films. Manganese-lead drier shows the most industrial promise and with added cobalt is best for slow-drying enamels. Iron and calcium resinates are fair, cerium, copper, and zinc resinates poor, and nickel and chromium are almost inactive as driers. Driers formed from sardine oil fat acids were difficult to dry, but slightly soluble oil, had a bad odor, and underwent excessive darkening. (*Chem. Abs. 39,* 4237.)

PATENTS

SEPARATION OF SATURATED AND UNSATURATED FAT ACIDS. W. J. Bloomer (Lummus Co.), *Can. 428,392,* June 26, 1945. A mixture of fat acids (e.g., those from soybean oil) is dissolved in methyl ethyl ketone, or a mixture of methyl ethyl ketone and benzene, and the solution is cooled to precipitate the more saturated acids. (*Chem. Abs. 39,* 4243.)

PLASTIC-COATED NAILS. W. E. Book (American Steel and Wire Co. of New Jersey). *Can. 427, 632,* May 22, 1945. To increase the resistance to withdrawal, the nails are coated with a mixture of cumar CX 86, gilsonite 155, plasticizing oil (e.g., soybean oil) 2-8, petroleum naphtha 475, asbestine 125 and red ferric oxide 75-90 parts. (*Chem. Abs. 39,* 4265.)

COPOLYMERIZATION OF DRYING OILS AND VINYL COMPOUNDS. L. H. Dunlap (Armstrong Cork Co.). *U. S. 2,382,213.* This is a toluene-insoluble copolymer of oxidized linseed oil and a vinyl compound selected from the group consisting of styrene and acrylonitrile said copolymer containing about 85% by weight to about 95% by weight of said linseed oil.

LINOLEUM COMPOSITIONS. L. H. Dunlap (Armstrong Cork Co.). *U. S. 2,382,212.* This invention relates to linoleum composition which includes a cement comprising a copolymer of a drying oil and a vinyl compound selected from the group consisting of styrene and acrylonitrile.

METHOD OF PRODUCING FACTIS. I. Bencowitz (Texas Gulf Sulphur Co.). *U. S. 2,382,284.* The improvement in the production of factis comprises reacting in solvent naphtha a mixture of 1 part levulinic acid, about 2 parts of soybean oil and from 1-2 parts of S by weight leaving a part of the solvent naphtha in the factis and removing the excess solvent naphtha by distillation.

FLOOR COVERINGS. M. E. Cupery (E. I. du Pont de Nemours & Co.). *U. S. 2,382,297.* A floor covering, comprises an asphalt impregnated paper felt base and a coating therefor containing a gelled polyhydric alcohol mixed ester of a hexadien-2,4-oic acid and the acids of a natural drying oil and a pigmented filler.

VULCANIZED FATTY OIL EMULSIONS. L. Auer. *U. S. 2,382,532.* The stable oil-in-water dispersion of a vulcanized fatty oil contains Me cellulose and another surface-active agent which reduces the surface tension of the oil-water interface, the Me cellulose constituting a minor amount and not substantially more than about 2% in relation to the oil.

Abstracts

Soaps

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EVALUATION OF LIQUID SOAPS. D. H. Matheson. *Chemist Analyst 34,* No. 3, 63 (1945). The determination of the water softening power of liquid soaps provides an easy and reliable method of estimating the relative value of the products of different manufacturers. The water softening power may be defined as the volume of water of specified hardness which is completely softened by a unit volume of the soap. This is a significant property of liquid soaps, as water softening power is actually what is being purchased. Standard hard water is used in the test and directions are given for preparing the standard solution. The procedure of titration and results of the tests are given.

PEROXY COMPOUNDS IN SOAP MANUFACTURE. Kenneth W. Richmond. *Soap, Perfumery and Cosmetics 18,* 642-4, 647 (1945). The use of peroxy compounds in soap manufacture in pretreatment of the raw materials or the saponified fats and oils to produce soaps substantially white in colour is described. Basic methods using hydrogen peroxide, benzoyl peroxide, and persulphates are given. This process has been effected by the bleaching action of the active oxygen released on decomposition of the peroxy compound. A different use of peroxy compounds in soap manufacture lies in the utilization of their therapeutic properties in the treatment of skin ailments. In this case the undecomposed peroxy compound is incorporated in the fin-