ing rancidity of fats and oils absorbed by paper wrappers from products in proximity thereto comprises wrapping such products in paper containing phosphoric acid.

SEPARATION OF FATTY ACIDS FROM ROSIN ACIDS. A. W. Hixson and R. Miller (The Chemical Foundation, Inc.). *U. S. 2,344,089.* In the fractionation of tall oil process of separating rosin acids from fatty acids dissolved in a liquefied, normally gaseous, hydrocarbon comprises in vaporizing part of the solvent to chill the sol.; thus causing the pptn. of the rosin acids as crystals, separating the crystals from the soln., and treating the soln, to recover the hydrocarbon and the fatty acids.

COMPOSITION FOR COATING CONCRETE. G. W. Whitesides. *U. S. 2,344,578-9.* A coating compn. adapted to be spread in the form of a relatively thin film over freshly placed concrete as a curing membrane, comprises a non-volatile, water-repellent, film-forming base of resinous material; a volatile solvent for the base; and a substantially water-insol. water-repellent, metallic fatty-acid soap mixed with the solvent and base in the form of a mechanical dispersion and in an amt. of between 1% and 5%.

VITAMIN FORTIFICATION. A. E. Briod and L. O. Buxton (National Oil Products Co.). *U. S. 2,345,571.* A process of producing a dry, vitamin-fortified product comprises treating cottonseed or soybean meal with acetic acid to liberate antioxidants in said meal, forming an aq. slurry of said material, dispersing a fat-sol. vitamin-contg. material in the aq. slurry and finally drying the mass.

STABILIZATION OF OXIDIZABLE SUBSTANCES. L. O. Buxton. *U. S. 2,345,576.* A process for obtaining antioxidants from oil comprises contacting the oil with isopropanol at a temp. above room temp. so as to form a soln. of the oil in the isopropanol, cooling the soln. to below 0°C. whereby layers are formed and sepg. the solvent layer contg. the highly active antioxidant ext. from the remainder of the oil.

PROCESS FOR REFINING FATTY MATERIALS. L. O. Buxton. *U. S. 2,345,577.* A process for refining fish liver oils comprises contacting the oil with a vegetable meal in the presence of a solvent for said oil, said solvent contg. between about 1% and about 10% of a lower aliphatic monocarboxylic acid.

STABILIZATION OF OXIDIZABLE ORGANIC MATERIALS. L. O. Buxton (National Oil Products Co.). *U. S. 2,345,578.* Antioxidants are obtained from oil meals by extn. with isoPrOH and on cooling the solvent 2 layers are formed, the highly active antioxidant concs. in the solvent layer.

STABILIZATION OF MOTOR FUELS. L. O. Buxton. *U. S. 2,345,579.* Natural antioxidants of vegetable and fish oils are used.

STABILIZATION OF MINERAL OILS. L. O. Buxton. *U. S. 2,345,580.*

SOLVENT EXTRACTING APPARATUS. E. C. Pattee (National Distillers Products Co.). *U. S. 2,345,626.* Means of passing oil-bearing material counter-currently to solvent in a "U" shaped app. is described.

CENTRIFUGAL HIGH VACUUM STILL. K. C. D. Hickman (Distillation Products, Inc.). *U. S. 2,343,667.*

TREATING OF LEATHER. E. A. Robinson and R. E. Porter (National Oil Products Co.). *U. S. 2,347,712.* A method of fat-liquoring leather comprises incorporating into the leather a compn. which consists essentially of a blown fatty oil and a water-insol. liquid monohydric alc. ester of a higher fatty acid.

PRINTING TEXTILES WITH PIGMENTS. W. L. Morgan and N. L. Vaughn (Arnold Hoffman & Co.). *U. S. 2,346,041.* A self emulsifying base suitable for the formation of an oil in water emulsion textile printing paste by diln. with water comprises a binder selected from the group consisting of urea formaldehyde and ethyl cellulose 5%, lacquer solvents 77%, a water sol. soap of a fatty acid of at least 12 C. atoms 12.18%, fatty acid of at least 16 C. atoms .70%, and water 5.12%.

LUBRICANT POUR DEPRESSOR. E. Lieber (Standard Oil Development Co.). *U. S. 2,346,926.* Alkyl aryl ketones prepd. by reacting fat acid halides and aromatic ketones (Friedel-Crafts reaction) are used as pour depressor.

Abstracts

Soaps

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LIQUID TOILET SOAPS. Andrew Treffler. *Soap 20,* No. 4, 29-32, 73, 75 (1944). Replacements in the formulation of liquid toilet soaps have been needed due to the shortage of coconut oil. These substitutions have not lowered the detergency but have reduced the sudsing character. Sudsing qualities, which are in no way identical with detergent qualities, are most highly developed in soaps made from lauric and myristic acids. The sudsing qualities of the different soaps are usually determined by shaking 100 c.c. of a soap solution, containing 0.6 per cent fatty acid in a graduated cylinder for 30 seconds and observing for 3 minutes the setting of the foam, the amount of suds formed and the amount of solution transformed into suds.

The detergent value of a soap solution is determined by titrating 58.3 cc. tap water with the 1 per cent soap solution to a permanent lather, lasting at least 5 minutes, in a 4 oz. oil bottle, and comparing the number of cc. obtained with the cc. hardness titration, found by using a standard soap solution. However, sulfonated products and synthetic detergents cannot be included in this determination as they act in an entirely different manner toward Ca, Mg, Fe soaps and paraffin oil.

The use of tall oil and rosin as substitutes in liquid soaps is discussed. The problems of rancidity and accurate control of pH are described and tests are given for determination of pH.

ANALYSIS OF SOAP-SYNTHETIC DETERGENT MIXTURES IN BAR FORM. Donald Berkowitz and Rubin Bernstein. *Ind. & Eng. Chem. Anal. Ed. 16,* 239-41. A procedure for the analysis of commercial soap-synthetic detergent mixtures is proposed which has given suffi-

ciently accurate and reproducible results. The sample is extracted with 95% ethyl alcohol to remove the major portion of the active ingredients, followed by solution of the alcohol-insoluble salts in water and reprecipitation of them by the addition of excess ethyl alcohol. Soap, fatty matter, and alcohol-soluble chlorides are determined directly, synthetic detergent being determined as the difference between total alcohol-soluble matter and the sum of soap, fatty matter, and alcohol-soluble chlorides.

MEASUREMENT OF DETERGENCY. A PHOTOMETER FOR DETERMINATION OF FILMS ON TRANSPARENT SURFACES. John J. Wilson and Elwyn E. Mendenhall. *Ind. & Eng. Chem. Anal. Ed. 16,* 251-3 (1944). A simple inexpensive photometer has been designed for the quantitative determination of "hard water" films formed on transparent glass plates during certain detergent processes such as commercial dishwashing. Constructional details and the electrical measuring circuit are discussed and information on the sensitivity of the instrument is presented. DETERMINATION OF RATE OF HARD WATER FILM FORMATION IN THE WASHING OF GLASS OBJECTS. *Ibid.* 253-4. A method is outlined for measuring the tendency of precipitates formed by the reaction between detergents and calcium and magnesium salts to adhere to glass surfaces during washing. Data are presented to show the reproducibility of results obtained by the suggested method and the ease and accuracy with which differences between detergents may be determined.

COPPER SOAPS AS ROT-PROOFING AGENTS ON FABRICS. Paul B. Marsh, Glenn A. Greathouse, Katharina Bollenbacher, and Mary L. Butler. *Ind. & Eng. Chem. 35,* 176-181 (1944). Copper naphthenate prevents rotting of cotton fabric in soil at lower concentrations on the fabric than do copper oleate, copper "tallate," or copper hydrogenated resinate. Several methods have demonstrated that the high preservative capacity of copper naphthenate in contact with soils is related to the fact that naphthenic acid itself is a potent fungicide. Various factors affecting the behavior of copper preservatives in contact with soils are studied. They include solubilization by acid hydrolysis and by complex formation, and deactivation by chemical combination. Data from pure culture test procedures are contrasted with the results obtained by exposure to soils.

SOME PHYSICAL CHEMICAL ASPECTS OF WAX EMULSION POLISHES. II. Charles S. Glickman. *Chem. Industries 54,* 213-5 (1944). The surface tension of various emulsifying agents is given. The relationship of soap to dispersed solids is discussed. It is found that weight for weight the soaps of the caustic alkalies produce better dispersions than the corresponding amine soaps. The use of carnauba wax and its substitutes as protective colloids is described. The importance of stability of emulsions is pointed out. Factors which affect stability are: possible saponification of acidic materials present in the disperse phase, insufficient protective colloid or soap necessary to maintain the suspension, and interference with the Brownian movement which is basically responsible for non-separation or homogeneity of the finished product. Tests for determining stability are described.

THE REGENERATION OF USED WASHING WATERS AND FAT RECOVERY FROM THEM. Bruno Walther. *Deut. Waescherei-Forsch. Ber. 8,* 71-72, 84, 86-7 (1940), *Chem. Zentr. 1941,* II, 425. The difficulties involved in the employment of used soap solns. are discussed. The fats in these soap solns. can be recovered by decompn. with acids, pptn. with Ca salts, or the use of filters contg. ZnO. The dirt is removed from the used soap solns. by the addn. of salt and blowing with air. The air bubbles formed absorb the soap and this can be sepd. by centrifuges and converted to a washing agent. (*Chem. Abs.*)

SOAP USED IN DRESSING HOLLOW GLASSWARE. V. A. Kreshmar, *Legkaya Prom. 1943,* No. 3-4, 13. For grinding the edges of hollow glassware, the hand holding the glass is soaped to enable the glass to rotate freely in the hand. For this purpose, household soap has been replaced by a liquid soap made of rosin 3, synthetic drying oil 3, and potash lye (made from wood ashes) approx. 2.4 kg. The rosin, and the oil are melted, the potash is added and the mixt. is boiled for approx. 4 hrs. Yield, 7.5 kg. of liquid soap. (*Chem. Abs.*)

ELECTRODEPOSITION OF AG FROM SOLUTIONS OF $AgNO_3$ IN THE PRESENCE OF WETTING AGENTS. Robert Taft and Erwin N. Hiebert. *Trans. Kansas Acad. Sci. 46,* 142-60 (1943). The electrodeposition of Ag from $AgNO_3$ solns. in the presence of 84 wetting agents was studied and the results of detn. of masses and characteristics of deposits were recorded. Those wetting agents which decreased the grain size of the deposit were Aerosol IB, diglycol stearate, ammonium laurate, ammonium stearate, Proflex, pyridine and tris(hydroxymethyl)aminomethane. Of these 8 tris(hydroxymethyl)aminomethane gave the best deposit. Many types of deposits were encountered among which were striated, treed, nonadherent, spongy, fuzzy, powdery, discolored, brittle, dull-white and shiny deposits. Discolorations and low and high masses of deposits indicated that other reactions than just formation and discharge of simple Ag ion were taking place in some of the baths. In general, increases of c.d. and decreases of temp. caused a decrease in crystal size. The formation of large crystals was quite often accompanied by treeing. From this study, there seems to be no obvious relationship between the mol. structure of the wetting agent and the type of the deposit. (*Chem. Abs.*)

SEDIMENTATION VOLUMES AND RIGIDITY IN SUSPENSIONS OF NA SOAPS IN MINERAL OILS. Wilfred Gallay and Ira E. Puddington. *Can. J. Research 22B,* 16-20 (1944). The vol. occupied by finely powd. Na soap after sedimentation equil. has been reached, increases greatly with decrease in the viscosity index of the oil. Flow-pressure relations, detd. with a torsional viscometer, show that suspensions with large sedimentation vols. possess rigidity, whereas the flow is Newtonian in suspensions, having small sedimentation vols. Variation in sedimentation vol. is therefore caused by difference in the tendency toward agglomeration or attraction between particles leading to the formation of branched chains and scaffolding structures, with consequently greater sedimentation vols. (*Chem. Abs.*)

SOAP IN THE PAPER INDUSTRY. Dorothy Bayles. *Domestic Commerce 32,* No. 2, 14-15 (1944). When pulp paper is coated, sizing materials are used containing combination of clay, starch, earths, and calcium car-

bonates, held in suspension in many instances by means of soap solutions. They are applied to the surface of the paper as a thin film by means of coating rolls and dried with the aid of steam-heated calender rolls. Soap is considered a good agent because it helps spread sizing easily and evenly, and because it stability permits standard mixing procedure of the coating materials. Soap is also a general aid in reprocessing scrap paper. Soap aids in removing ink, old sizing, and oils, so that the paper can be used again.

SPECIALIZED USES OF SOAP IN TEXTILES. Georgia Leffingwell and Milton A. Lesser. *Rayon Textile Monthly 44*, No. 4, 78-9 (1944). The ordinary role of soap is that of a detergent and scouring agent. But specialized used include piece dyeing, bleaching cotton sizing, lubricant, increase resistant finishes, primer in rubber coating and for fire resisting finish. Typical formulas for these uses are given.

PATENTS

FATTY ACID NEUTRALIZATION. Stanley J. Holuba (Colgate-Palmolive-Peet Co.). *U. S. 2,325,320.* Continuous manufacture of soap and neutralization of fatty acids with sodium carbonate in reaction kettle built to remove excess foaming rapidly.

SOAP CAKE. Carl O. Swanson. *Can. 418,490.* A cake of soap is so constructed as to permit securing a used piece of soap to its side. Pointed members extend from the side of the soap cake for the purpose of entering the used piece of soap. (April *Soap.*)

DETERGENTS. Lever Brothers & Unilever, Ltd. *Brit. 550,757.* A process is described for the manuf. of bars or cakes from nonsoapy detergents, consisting of derivs. of sulfocarboxylic acid ester of alc. amine. (*Chem. Abs.*)

ANTIOXIDATION AGENTS AND THE STABILIZATION OF ORGANIC SUBSTANCES AGAINST OXIDATION. National Oil Products Co. *Brit. 550,983.* An antioxidant ext. for fat-sol. vitamin-contg. substances is prepd. from wheat-germ oil. corn-germ oil or soybean oil. The oil is dissolved by heating it in isopropanol and the solution is cooled to a temp. below 0°. Two layers sep., and the soln. contg. the ext. is then sepd. from the immiscible layer. (*Chem. Abs.*)

WASHING AGENT IN FORM OF A POWDER, GRANULES, FLAKES, ETC. August Noll to Zellstofffabrik Waldhof. *Ger. 714,681.* Powdered, water-free or nearly water-free residue of sulfite liquor free of Ca and Fe is intimately mixed with dry soap. (*Chem. Abs.*)

METALLIC SOAP. F. J. Licata to National Oil Products Co. *Can. 418,734.* Aluminum soap compositions are prepared by saponifying hydrogenated castor oil and the corresponding fatty acids with caustic soda The aluminum soap is precipitated by reaction of the alkali soap with aluminum sulfate. (*Chem. Abs.*)

WETTING AGENT. Oranienburger Chemische Fabrik A.-G. *Ger. 734,337.* The wetting agent used is a mixt. consisting of high mol. sulfonic acids (I) or their H_2O-sol. salts and aminocarboxylic acid or their H_2O-sol. salts. I are obtained by the action of strong sulfonating and condensing agents, e.g., H_2SO_4-halohydrin, on neutral fats, fatty acids, rosins, wool fat, naphthenic acid, mineral acids or on a mixt. of these substances with hydrocarbons, alcs., ketones, phenols or carboxylic acids. (*Chem. Abs.*)

Circulating Stirrers, a Handy Laboratory Tool

B. S. VAN ZILE
Hercules Experiment Station, Hercules Powder Company
Wilmington, Delaware

The circulating stirrer, described in *Oil & Soap* of March, 1943, by Van Zile, Schneider and Blank, has been found to have a great many uses other than the preparation of fatty acids for which it was originally designed.

In making titrations where a mechanical stirrer is used, the ordinary stirrer is replaced with a circulating stirrer, and the buret tip is located so that it delivers into the vortex formed by the stirrer. The titrating solution is sucked down by the stirrer and becomes distributed through the solution much more rapidly than when an ordinary stirrer is used.

This stirrer is also very handy when adjusting solutions to definite pH and for effecting solution of finely divided powders that are not readily wet by the solvent, e.g., boric acid or powdered soap in water.

If one has several of these stirrers around the laboratory, it will be found that they will expedite many operations.