

## ABSTRACTS

### Oils and Fats

Edited by  
M. M. PISKUR

2 mols. oleic acid at 280° for 2 hrs. caused reesterification and 50% of oleic acid was changed to triglyceride. Heating of mixts. of tristearin, lauric or behenic acid (1:3 mols) caused reesterification and changed 30-40% of each constituent. The heating of an equimol. mixt. of tristearin and triolein at 280° for 2 hours caused reesterification to give mixed glycerides and the amount of tristearin decreased. (*Chem. Abs.*)

SOAP AS AN EGG-SUBSTITUTE. Walter Meyer. *Seifensieder Ztg.* 66, 825-6 (1939). M. reviewed the literature on adding soap to bakery goods ingredients or shortening to make lighter and more moist bake goods. The process was known at least since 1893. This should be considered adulteration. A baker was prosecuted and punished for selling baby-food (Sanitäts-Kindernahr-Zwiebackextrakt) in which soap was used as an emulsifier instead of eggs.

#### PATENTS

PROCESS OF REFINING ANIMAL AND VEGETABLE OILS. B. Clayton et al. *U.S.* 2,182,755. In a continuous system the oil is heated before addition of refining agent.

COMPOSITION FROM RUBBER AND FATTY ACIDS AND PROCESSES OF PREPARING THE SAME. A. W. Ralston and W. M. Selby. *U.S.* 2,182,180. Rubber and fatty acids are condensed in the presence of a Friedel-Crafts reaction product.

PROCESS FOR MANUFACTURING SEBACIC ACID. H. A. Bruson and L. W. Covert (to Röhm & Haas Co.).

*U. S.* 2,182,056. Sebacic acid is prepd. by heating derivs. of ricinoleic acid with alkali under pressure.

ALKYL 12-KETOSTEARATE. H. L. Cox (to Union Carbide and Carbon Corp.). *U. S.* 2,170,730. 12-ketostearic is first prepd. from castor oil and this is esterified with an alc.

PROCESS FOR THE DEHYDROGENATION OF HYDROXY CARBOXYLIC ACIDS AND ESTERS THEREOF. W. A. Lazier (to E. I. du Pont de Nemours & Co.). *U. S.* 2,178,760. Example: 3,000 g. of hydrogenated castor oil was heated with 300 g. of Ni-kieselguhr catalyst at 184 to 273°C. for 6 hrs. On separation of reaction products by filtration and crystallization from acetone there was obtained a 65% yield of 12-ketostearin.

MANUFACTURE OF FLUID PHOSPHATIDE PREPARATIONS. K. Braun and R. Rosenbusch (to J. D. Riedel-E. de Haen Akt. ges.). *U. S.* 2,168,468. Fluid phosphatides are prepd. for incorporation into soap by mixing with castor oil fat acids and a small amt. of polyethanolamines.

THIOAMIDES AND PROCESSES OF PREPARING THE SAME. A. W. Ralston (to Armour & Co.). *U. S.* 2,168,847. Aliphatic thioamides are prepd. by reacting aliphatic nitriles with sulfur and NH<sub>4</sub>S in an inert non-aq. solvent. The aliphatic nitriles used in the prepn. are prepd. from fat acids.

PROCESS OF CONCENTRATING ORES. A. W. Ralston and W. O. Pool (to Armour & Co.). *U. S.* 2,168,849. Amines of fat acids are used in the process.

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### Soaps

Edited by M. L. SHEELY

WASHING SLUDGE FROM NEUTRALIZING GLYCEROL LIQUOR. V. Bukharin and N. Chirkova. *Masloboino Zhirvoe Delo* 1939, (3), 21. A successful procedure has been developed for recovering glycerol by washing filter-press mud in a cyclic autoclave process. A ton of sludge can be washed in 8 hrs., lowering the glycerol content from about 8-9% to 2.5% or less, sometimes as low as 0.8%. Losses from pptn. of sludge and glycerol entrainment are thus greatly diminished in the neutralization of glycerol liquors. (*Chem. Abs.*)

THE USE OF DISTILLED FATTY ACIDS IN THE SOAP INDUSTRY. F. Wittka. *Seifensieder-Ztg.* 66, 153,187 (1939). The frequently observed unsatisfactory storage behavior of soaps prepd. from distd. fatty acids has several probable causes, namely, (1) the presence of high proportions of easily oxidized unsaponifiable substances such as sterols in the fatty acids, (2) high isooleic acid content and (3) presence of pro-oxidants, e.g., certain Twitchell reagent components.

GLYCEROL IN PAPER TOWELS. W. L. Hardenburg. *Paper Mill* 62, No. 7, 22 (1939). A brief discussion

of the use of glycerol in tissue paper towels.

A NEW METHOD FOR DETERMINING CAUSTIC ALKALI IN THE PRESENCE OF ALKALI CARBONATES IN SOAPS. Cl. Bauschinger. *Fette u. Seifen* 46, 471-2 (1939). The new DGF method is especially superior for detg. small amts. of alkali. A 2:1 mixt. of alc. and cyclohexane is used as a solvent and the titration is carried out at room temp.

THE HEMOLYTIC ACTION OF MODERN SOAP SUBSTITUTES. F. Deichmüller. *Fette u. Seifen* 46, 645-6 (1939). The sulfonated products (Fewa, Igepon, lamepon, etc.) have weaker hemolytic effects than Na-oleate, but, in contrast to soap they are not affected by Ca salts.

THE CHEMICAL CONSTITUENTS OF SULFATED OILS. R. M. Koppenhoefer. *J. Am. Leather Chemist Assn.* 34, 622-41 (1939). Extensive analyses of sulfated castor oil, sulfated neatsfoot oil and sulfated cod oil indicated the following facts concerning the sulfation of these oils. Sulfation of castor oil occurs predominantly at the hydroxyl group of ricinoleic

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acid. Simultaneous sulfation, of a lesser degree, also occurs at the double bond of ricinoleic acid. As a result, the presence of dihydroxy acids was identified in the fatty acids derived from the sulfo oil. Sulfation of neatsfoot oil occurs predominantly at the double bond of the unsaturated acids. As a result, monohydroxystearic acid was identified in the fatty acids derived from the sulfo oil. Sulfation of cod oil occurs at the double bonds of the more unsaturated acids. As a result, the fatty acids derived from the sulfo oil fraction consist of dihydroxy acids and hydroxy-unsaturated acids. The free fatty acids of sulfated castor oil and neatsfoot oil, which are liberated during sulfation, have not been oxidized to any appreciable extent during the sulfation. Those of cod oil are high in oxidized acids. The same is true of the fatty acids of the neutral oil fraction. Partial esters of glycerin, probably diglycerides, are present in the neutral oil fraction as a result of sulfation. They were present in the greatest quantity in sulfated neatsfoot oil. Iso-oleic acid is formed during the sulfation of neatsfoot oil. Its presence was demonstrated in the separated neutral oil and free fatty acid fractions. The sulfo oil fractions, particularly that of castor oil, are heat labile and lose their combined  $\text{SO}_3$  on heating. There was little evidence that the sulfation process had been subsequently reversed during the processing of any of these three oils.

SUCCESSIVE PHASES IN THE TRANSFORMATION OF ANHYDROUS SODIUM PALMITATE FROM CRYSTAL TO LIQUID. Robert D. Vold and Marjorie J. Vold. *J. Am. Chem. Soc.* 61, 808 (1939). Anhyd. Na palmitate exhibits 5 successive phases between 70 and 300°. These are curd fibers over 117°, subwaxy soap to 135°, waxy soap to 208° and isotropic liquid neat soap to 253°, neat soap to 292° and isotropic liquid above 292°. These states are considered as successive stages of melting intermediate between crystal and liquid and may be formed during soap mfg. and persist from month to month.

ABRASIVES. THEIR USE IN SOAPS AND SCOURING POWDERS, THEIR OCCURRENCE AND CHARACTERISTIC. Richard J. Roley. *Soap* 15, No. 12, 24-6, 70 (1939). Abrasive for cleaning preps. should give the desired bulk. Certain constituents should not settle out, however, glue, gelatine, albumen, carbohydrates, glycerine, sodium alginate, sodium silicate trisodium phosphate, bentonite, colloidal kaolin and other materials are often added to prevent settling. The Fe content should be low. Abrasives may be used in pairs to achieve

special results. Sawdust, wood pulp, sand, marble dust, etc., are sometimes added to reduce cost. Abrasive for mechanic's hand paste should be that between 40 and 60 mesh fine, that for polishing A1, enamel and Ag should pass a 200 mesh sieve. Microscopic structures of some of the abrasives are discussed.

DETERMINING FATTY ACIDS BY MEANS OF THE LÜRING BURET WHEN SOAPS CONTAINING TYLOSE ARE ANALYZED. Bruno Schulz. *Seifensieder-Ztg.* 66, 327 (1939). Reflux 10 g. of soap sample dissolved in a little water with 10 cc. of concd. HCl for 15 min., transfer to a separatory funnel, shake with 70 cc. of ether and allow to stand. Draw off the acidic aq. soln., and rinse the funnel and filter with ether. Distil and ether off the combined ether solns. and det. the fatty acids in the Lüring buret in the usual manner. (*Chem. Abs.*).

**PATENTS**

LUBRICATING COMPOSITION. Stanley P. Waugh to Tide Water Associated Oil Co. *U.S.* 2,174,907. Lubricating composition suitable for use in metal work-in-goperations, which comprises a substantially neutral aqueous emulsion containing mineral oil and a saponified component derived from the fatty acid mixture obtainable from a palm oil.

DETERGENT IN POWDER FORM. Coleman R. Caryl and Alphons O. Jaeger to American Cyanamid and Chemical Corporation. *U.S.* 2,181,087. A detergent composition in the form of a neutral powder which is stable, non-caking and readily soluble in water, comprising a spray-dried mixture of the sulfosuccinic ester of an aliphatic alcohol having 5 to 8 carbon atoms and sodium sulfate.

PROCESS OF MAKING SOAP. B. Clayton (to Refining, Inc.). *U. S.* 2,178,987-8. Continuous method and app. for making soap comprises mixing fat with saponification agent, passing through saponification zone, and means of separating anhydrous soap.

SULPHO-CARBOXYLIC ACID ESTERS OF ALCOHOL AMINO DERIVATIVES. A. K. Epstein and M. Katzman (to The Emulsol Corp.). *U. S.* 2,178,139. Sulfo-carboxylic esters corresponding to the general formula  $\text{R-COO-R}_1$  in which R denotes a radical of less than 8 C atoms and at least 1 sulfonic group and  $\text{R}_1$  denotes a radical of an alc. amine contg. a lipophile radical.