

Abstracts

Oils and Fats

Edited by
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WOOL FAT. H. Wontner Smith and S. G. Campbell. *Manufg. Chemist*, 13, 135-40 (1942). The history of its recovery, derivatives and uses.

THE IODINE VALUE AS AN INDEX OF THE RELATIVE FIRMNESS OF PIG BACK DEPOT FAT. W. Bolton and R. G. Baskett. *Chem. & Industry* 61, 249 (1942). (Presented at meeting of Soc. Public Analysts.) For pig back depot fat a close correlation was found to exist between the I value (Wijs) and the firmness as measured by means of the grease penetrometer of the Institute of Petroleum Technologists. The firmness measurements were carried out at 30.5°, 32° and 46.5°F., at which temps. the av. depths of penetration were 4.5, 6.4 and 15.3 mm. The correlation coefficients between I values and depths of penetration were +0.9564 (23 samples) at 30.5°, +0.8543 (28 samples) at 32°, and +0.7136 (28 samples) at 46.5°F. In laboratories where the close temp. control necessary for penetrometer or similar direct tests of firmness are impracticable, the I value will give a more accurate measure of the firmness of these fats.

A STUDY OF THE QUALITY OF RETAIL BUTTER IN MICHIGAN. I. A. Gould. *Mich. Quart. Bull.* 24, 298-304 (1942). Butter samples were collected at random from retail stores in 4 different Mich. markets. These samples were examnd. for flavor, mold and yeast count, mold mycelia count, extraneous matter and composition. Results indicate no definite relationship between flavor of butter and price, nor between claims on the package as to quality and the flavor. Also, a non-uniformity of flavor was noted in certain brands. The flavor defects were largely of a type attributable to the quality of the cream, and from this angle, the producer should logically be given the blame. The results obtained in this study indicate the desirability of establishing a butter grading system as a means of protecting the consumer. Such a system may be operated either through local or state control. At the present, the consumer has no reliable means of ascertaining the quality of butter which is available for purchase.

VITAMIN B₆, PANTOTHENIC ACID AND UNSATURATED FAT ACIDS AS THEY AFFECT DERMATITIS IN RATS. L. R. Richardson, A. G. Hogan and K. F. Itschner. *U. of Mo. Col. Agr. Expt. Sta. Bull.* 333, 12 pp. (1941). Pyridoxine and pantothenic acid were both required for permanent healing of dermatitis. When both vitamins were supplied in a ration that contd. cod liver oil, females attained weights of 175 to 180 gms. even though they did not receive any additional fatty acids. Either pyridoxine or pantothenic acid temporarily healed the dermatitis in most of the rats, but it recurred in every one that survived long enough. The addn. of pyridoxine and pantothenic acid to a low fat basal ration prevented or healed the characteristic dermatitis but after a prolonged survival period every rat died of a fatty acid deficiency. If linoleic acid or methyl arachidonate was supplied in addn. to the 2 vitamins the rats grew fairly rapidly and females attained wts. of 175 to 195 gms. Neither linoleic acid nor methyl arachidonate

protected permanently against dermatitis. A combination of the fatty acids with only one of the 2 vitamins, pyridoxine or pantothenic acid, was equally ineffective.

THE EFFECT OF ADRENALECTOMY ON THE ABSORPTION OF HYDROGENATED COTTONSEED OIL, CORN OIL, TRIBUTYRIN AND SODIUM BUTYRATE. Lucien A. Bavetta and Harry J. Deuel, Jr. *Am. J. Physiol.* 136, 712-15 (1942). A definite inhibition in the absorption of both hydrogenated cottonseed and corn oils were noted in adrenalectomized rats. Furthermore, large amounts of fatty acids accumulated in the intestines of such animals as contrasted with the normal. This would indicate that the adrenal glands play a role in the absorption of the longer chain fatty acids. However the absorption of tributyrin and of Na butyrate was unaffected by adrenalectomy which suggests that the absorption of the water soluble fatty acids is probably not dependent on adrenal activity.

PATENTS

SOLVENT EXTRACTION OF GLYCERIDES. A. H. Batchelder (Standard Oil Co. of Calif.). *U. S.* 2,285,795. Selective solvents such as furfural, aniline, acetone, Bu OH, HAc, triethylene glycol and Me Et ketone are used for fractionation of unsatd. fat acids from satd. fat acids.

SHORTENING. J. R. White and J. A. Dunn (Lever Bros.). *U. S.* 2,285,478. Egg yolk is added to the shortening fat.

EMULSION. A. K. Epstein and B. R. Harris. *U. S.* 2,285,422. An emulsion of oleaginous and aq. materials contains a proportion of a glycerol, sucrose and a saccharide only partially esterified with a fatty acid.

CHEMICAL PROCESS. Elmore L. Martin (E. I. du Pont de Nemours). *U. S.* 2,283 683. Amino-fat acid compds. are removed from crude prepsns. by treatment with org. acid, filtering and ppt. the desired compd. from the filtrate.

NONFOAMING EMULSIFIABLE OILS. A Nörring (Shell Development Co.). *U. S.* 2,285,940. Sulfonated marine animal and fish oils are used as nonfoaming compds.

CHEMICAL SUBSTANCE. B. R. Harris (Colgate-Palmolive-Peet Co.). *U. S.* 2,285,773. Na salts of sulphated cetyl glycerate is an example.

EMULSIONS. E. Gröner (Röhm & Haas Co.). *U. S.* 2,285,579. An aq. emulsion stable at temps. above 80° and adapted for waterproofing fabrics comprises paraffin emulsified in an aq. soln. comprising water, soap and Na polyacrylate and a water-sol. salt of Al.

MERCURATED ARYL-ALKYL KETONES. A. W. Ralston and R. J. Vander Wal (Armour & Co.). *U. S.* 2,286,226. The products are used as germicides and antiseptics.

PROCESSES OF HYDROGENATING NITRILES. H. P. Young and C. W. Christensen (Armour & Co.). *U. S.* 2,287,219. The process of prepng. aliphatic amines having at least 6 C atoms comprises catalyt-

ically hydrogenating a liquid mixt. composed of the corresponding fatty acid nitrile in the presence of an aq. soln. of an alk.-reacting material in sufficient quantity to maintain free OH ions in the mixt.

PROCESS OF SEPARATING LEAD AND ZINC SULPHIDES. A. W. Ralston and E. W. Segebrecht (Armour & Co.). *U. S. 2,287,274*. The process of sepg. ZnS from PbS in ores contg. the same comprises subjecting an aq. pulp of the ground ore to froth flotation in the aq. pulp of the ground ore to froth flotation in the

presence of a mixt. of unsubstituted primary aliphatic amines obtained by hydrogenating coconut oil fatty acid nitriles.

ART OF MANUFACTURING LUBRICATING OILS. E. Lieber (Standard Oil Development Co.). *U. S. 2,287,110*. A lubricant comprises a hydrocarbon lubricating oil and a condensation product of phenyl hepta-decyl ketone with ethylene dichloride.

PREPARATION OF POLYHYDRIC ALCOHOLS. D. J. Loder (du Pont). *U. S. 2,285,448*,

Abstracts

Soaps

Edited by
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NEUTRALIZATION OF ALKALI IN THE SKIN. M. Zingsheim. *Dermatol. Wochschr.* 110, 258-62 (1940); *Chem. Zentr.* 1940, I, 2976. Injury of the skin by alkali frequently appears as eczema in structural workers (working with lime and cement), housewives, and those employed in laundries and in the soap industry. The method of Burkhard was used in studying the skin condition. It consists in applying blotting paper impregnated with NaOH and phenolphthalein (both 1:2000) to the skin of the patient and noting the time required for decolorization. The patients could be divided into 3 groups on the basis of this test: those in which neutralization was rapid (3.75 min.), a middle group (3.75-5.75 min.) and those showing slow neutralization (over 5.75 min.). The skin of artists and painters having psoriasis neutralized the alkali slowly. Patients having constitutional eczema neutralized the alkali rapidly, from which it follows that they are probably less sensitive to treatment with ointments and to external injury than persons with other types of eczema. Men who did not have and had not had eczema neutralized the alkali slowly; this was obviously due to an occupationally conditioned hypo-functioning of the skin. (*Chem. Abs.*)

METALLIC SOAPS. Stanley B. Elliott. *Soap Sanitary Chem.* 18, No. 7, 26-27, 73-4 (1942).

NEW OINTMENT BASES. H. Stanley Redgrove. *Manuf. Chemist*, 13 130-4 (1942).

DETERGENTS FROM PETROLEUM. Lawrence Flett. *Chem. & Eng. News*, 20, 844-8 (1942).

FOUR BASIC FACTORS IN DETERGENCY. Foster Dee Snell. *Food Industries* 13, No. 10, 48-50 (1941). The factors are (1) initial alky. of pH of the detergent soln., (2) total alky. or buffer value of the detergent soln., (3) effect of lowering of interfacial tension between the foreign matter and water, (4) deflocculating and emulsifying power. For the expts. of synthetic foreign matter was made up of 4 g. C black, 5 g. mineral oil and 0.3 g. of cottonseed oil contg. 0.38% free acidity as oleic. The use of certain "sequestering" agents such as Na hexametaphosphate and several org. compds. prevent the pptn. of Ca and Mg curds from hard waters. The use of such agents with soap is one of the greatest advances in detergency in the present century. (*Chem. Abs.*)

THE PHYSICAL AND CHEMICAL PROPERTIES OF AQUEOUS SOAP AND ALKALI SOLUTIONS AND THEIR RELATION TO PRACTICAL DETERGENCY TESTS. James F. Oesterling. *Univ. Microfilms.* (Ann Arbor, Mich.) Pub. No. 368, 101 pp. (1941). (*Chem. Abs.*)

SOLUBILITY OF SODIUM PALMITATE IN ORGANIC LIQUIDS. C. W. Leggett, Jr., R. D. Vold and J. W. McBain. *J. Phys. Chem.* 46, 429-40 (1942). Soly. curves are given for Na palmitate in glycerol, diethylene glycol, palmitic acid, iso-propyl, ethyl, n-heptyl and n-cetyl alcs., o-, m-, and p-cresols, n-heptane, n-cetane and Nujol. The phys. appearance of the systems above and below the soly. curve is indicated in terms of gels, jellies and liquid-cryst. phases and curd. (*Chem. Abs.*)

WORLD-WIDE CHEMISTRY: FRANCE: SOAP MANUFACTURE AND CONSUMPTION RESTRICTED. *Ind. & Eng. News* 20, 733 (1942). The shortage of vegetable oils has necessitated reductions in the max. contents of fatty acids in soaps and soap powders. Toilet soaps must not contain more than 18% of fatty and resinous acids, household soap not more than 26.5%, and cleaning powders not more than 9%. Fatty substances will be allocated for soap manuf. only to firms which possess adequate facilities for the recovery of glycerol. The glycerol lyes must be concentrated to at least 80% glycerol contents. The soap ration for the general public has been fixed at 100 grams of household or 75 g. of toilet soap plus 75 g. of household soap or 250 g. of cleaning powders per month, but special allowances are made for certain classes of industrial workers, etc.

WAR TIME PROBLEMS OF THE SOAP MAKER. Alan Porter Lee. *Soap* 18, No. 6, 23-26, 73 (1942). As substitutes for coconut oil, rosin, looked upon as the next best detergent, leaves much to be desired; babassu oil is scarce; palm oil is competed for with other industries. For the immediate future, palm kernel oil seems most promising. Lower-grade tallow-rosin-palm kernel combinations, with possibly some babassu will provide a working substitute for previous high-grade tallow-coconut oil combinations. In solving problems of substitution, equipment for refining, bleaching and hydrolysis of oils and for fatty acid distn. is a great asset.

Tables I and III list comparative constants of coconut, babassu, palm and palm kernel oils.