ABSTRACTS

Soaps

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Copper for Twitchell Fat-Splitting Tanks. *Chemical Abstracts.* Vol. 27, No. 9, page 2322, May 10, 1933.—*R. Heublyum. Fettchem. Umschau* 40, 6-8 (1933).—Based upon favorable laboratory experiments the fat-splitting tanks in a Krasnoder, Caucasus, factory were constructed of Cu and have been in use since 1929 without complaints.

Copper Vats for Fat Decomposition. *Chemical Abstracts.* Vol. 27, No. 9, page 2322, May 10, 1933. *R. Heublyum. Metallwirtschaft* 12, 121-2 (1933).—Wooden and lead-coated steel vats have not been entirely satisfactory for continuous operation of the Twitchell process for fat decomposition. To test the suitability of Cu for this purpose the loss in weight of Cu strips 0.71 mm. thick was determined when immersed in boiling solutions of 1% H_2SO_4 and in a mixture of 100 g. oil, 50 g. H_2O, 0.5 g. H_2SO_4 and 1 g. decomposition reagent. The loss in 1% H_2SO_4 was 0.00038 g. per square cm. during the first day and 0.00214 g. in 10 days. In the mixture the loss in weight also showed up after the first day, probably because of the formation of a protective coating. In further tests it was found that Cu had no effect on the yield of fatty acids. A 5-mm.-thick Cu sheet hung in a production vat for 4 months lost 0.5% of its weight. As a result of these tests Cu was used in the construction of vats in a soap factory in Krasnodar, Russia, in 1929, and the vats have operated satisfactorily since. C. E. MacFARLANE.

Japanese hardened fish oil and the lather test. *Chemical Abstracts,* Vol. 27, No. 12, page 3099, June 20, 1933. G. Knigge. Seifensieder-Ztg. 60, 255-6 (1933).—A sample of Japanese hardened fish oil was tested for lathering ability by preparing in the laboratory a 10 per cent rosin soap containing 10, 20 and 30 per cent of the hardened fish oil. The results at 20° showed the maximum lather in the 10 per cent soap, but at 50° the 20 per cent soap gave the highest lather of the three soaps, though less than at 20°. P. ESCHER.

Kusum oil in soap making. *The American Perfumer and Essential Oil Review,* Vol. XXVIII, No. 4, page 222, June, 1933 R. L. Dutta, T. Basu, and P. K. Ghose (*Perf. Ess. Oil Rec.,* 1932 23, 427-428). Kusum oil, expressed from Schleichera trijuga, the host tree of the best grade of lac, has: d^{32} 0.909, acid val. (after keeping for 3 months) 14.0, sap. val. 215.8, I val. 57.5, titer of fatty acids 46.5°. The soap gives a scanty and greasy lather but forms a thick emulsion when mixed with H_2O and has excellent cleansing and emulsifying powers. It does not develop rancidity and its incorporation (2-15 per cent) in a soap charge improves the lathering qualities and softens the soap.—*British Chemical Abstracts.*

Preparation of stearin from highly hardened fats without pressing. *Chemical Abstracts,* Vol. 27, No. 12, page 3097, June 20, 1933. F. Wittka. *Allgem. Oel-u. Fett-Ztg.* 29, 323-30 (1932).—Large-scale experiments showed that the fatty acids obtained by hardening palm oil (or beef tallow) to m.p. about 58° and saponifying by the autoclave process were very similar in composition (stearic, palmitic and iso-oleic acid contents) to commercial press-stearins, and possessed many, although not all, of the desired physical properties. B. C. A.

Fatty acids. *Chemical Abstracts,* Vol. 27, No. 12, page 3101, June 20, 1933. *I. G. Farbenind.* A.-G. British 370-964, November 5, 1930. Improved fatty acids are produced from low quality animal and vegetable oils containing unsaturated fatty acids by esterifying the unsaturated acids with an aliphatic alcohol, then polymerizing by heating to say 200-300° but not to the boiling point, if desired while passing through a current of inert gas, with or without reduced pressure, and finally splitting the polymerized substances and recovering the free fatty acids. Examples of the treatment of acid train oil, train-oil fatty acids and soapstock fatty acids are given: Cf. C. A. 27, 2162.

Grease insoluble in gasoline. *Chemical Abstracts,* Vol. 27, No. 12, page 3069. June 20, 1933. Maurice H. Arveson (to Standard Oil Company of Indiana). U. S. 1,900,759, March 7. A composition suitable for lubricating gasoline pumps, etc.; comprises free fatty acids 2.5, fatty acid soap 17.5, glycerol 37 and an oil such as lubricating oil 35 parts.

World soap production. *Perfumery and Essential Oil Record,* Vol.24, No. 5, page 181, May, 1933.—The estimated world production of soap in 1932 was 4.7 million tons, according to figures published in *Die Chemische Industrie* (March 18, 1933, p. 197). Of this 2.5 million tons was made in Europe and 1.8 million tons in America. Almost all countries have increased their production over the pre-war level. In Russia production has been tripled, though it still represents only 2.5 kg. per head of the population. The greatest use of soap per person is in the U. S. A. (11.5 kg.), while England has a consumption of 9 kg. per head per annum.

Soap in asphalt emulsion industry (continued). *American Perfumer and Essential Oil Review,* Vol. 28, No. 4, page 219, June, 1933.—When asphalt emulsions are made by dispersion in soap solution directly, the best plant practice is first to make up a concentrated soap solution. By mixing fatty oil with an aqueous solution of caustic until it is completely saponified, emulsions of the smallest average particle size are obtained when the alkali concentration of the soap solution is somewhat in excess. The solution is then diluted to the concentration desired for emulsification of the asphalt.

Several patents describe the manufacture of asphalt emulsions by incorporation of saponifiable ingredients in the asphalt and agitation with a solution of alkali. Trisodium phosphate and silicate of soda are sometimes used.

Caustic soda and caustic potash are usually the alkalies used for the preparation of the soap. Caustic potash is preferred.

The soap content of emulsions ranges in the commercial numbers between 1 and 5%. Close regulation of the soap as well as the asphalt content of emulsions is the rule, but for different conditions, varying degrees of stability, obtainable by variation of the soap content, are necessary.

Kinetics of soap making. *The American Perfumer and Essential Oil Review,* Vol. 28, No. 4, page 220, June, 1933.—E. L. Smith (J. S. C. I., 1932, 51, 337-348T). The velocity of saponification of cod-liver oil and coconut oils and of triolein by the "cold process" has been studied. Aqueous NaOH and KOH were used, the quantity of alkali in excess of that equivalent to the oil being varied. After thorough mixing, which produced lye-in-oil emulsions, the saponification mixtures were kept at constant temperature (25° or 45°). Usually, after an initial period of induction, the reaction accelerated spontaneously to a rate 10-200 times the initial velocity, whcih did not diminish appreciably until saponification was 80-90% complete.

Evidence is presented showing that both oil and alkali are soluble in soap, whether it is in aqueous colloidal solution, or, as in "cold saponification" mixtures, salted out to neat or curd soap. After the initial period of slow interface reaction, saponification must occur mainly in homogeneous solution in soap phase.

The ratio of the saponification velocities of the two oils saponified under the same conditions was not a constant independent of such conditions as temperature and the concentration and the nature of the alkali used. The addition of soap or fatty acids reduced or eliminated the period of induction.

PATENTS

Flake soap from liquid soap. *The American Perfumer and Essential Oil Review, Vol. XXVIII,* No. 4, page 221, June, 1933. German Patent Number 540,762; Welter, Krefeld, Germany. A method claimed to be very economical, and ensures a saving of time, heat, power and labor, and gives a better and more uniform product. The liquid soap mass made from castor oil or olive oil, or with coconut oil, etc., and mixed or not with sodium silicate or other substance, and with a fatty acid content of 88 to 90 per cent, is atomized in the usual way into a dry soap powder, and is then either forced through a nozzle into a fine thread or sprayed on to a roller mill to form flakes or soap wool.—*Soap Trade Review.*

Soap composition. L. B. RASMUSSON. Swed. 70,883, Dec. 31, 1930. A soap mass, that may be mixed with calcined Na_2CO_3, is treated with O_3 and BzH.

Laundry Scouring Composition Containing an Aniline Blue and a Fluosilicate Such as That of Sodium. *Chemical Abstracts.* May 20, 1932. Robert A. Phair (to H. Kohnstamm & Co.). U. S. 1,849,535, March 15.

Composition for Preventing Condensation of Drops of Water on Windows, etc. *Chemical Abstracts.* Vol. 27, No. 6, page 2543, May 20, 1933. I. G. Farbenind. A.-G. German 565,724, June 13, 1929.—The windows, etc., are treated with a solution containing sulfonated hydrocarbons or derivatives and a substance such as glycerol which lowers the m. p. Examples are given.