ABSTRACTS

Oils and Fats

Edited by
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Tests on Carbonate Formation in Glycerol-Litharge Cements. *Chemical Abstracts,* Vol. 27, No. 6, Page 1456, March 20, 1933. *Typke. Angew. Chem.,* 46, 20-1 (1933).—Carbonate formation is favored by an increase in the proportion of glycerol to litharge and increasing water content of the glycerol. Temperature also influences it.

KARL KAMMERMEYER.

The Refractometric Measurement of Ethylene Glycol Type Antifreeze Mixtures. *Chemical Abstracts,* Vol. 27, No. 6, Page 1250, March 20, 1933. Ellery H. Harvey, *Am. J. Pharm.,* 104, 734-6 (1932).—Prestone, a brand of ethylene glycol antifreeze, was used to develop a table of ns. at varying volume-volume concentrations at 20/20°. The temperatures at which crystals begin to form in such solutions were also determined and reported in a table as the freezing points. A selected bibliography of articles on ethylene glycol is appended.

W. G. GAESSLER.

The effect of varying conditions in the catalytic hydrogenation of fatty oils on the nature of the reaction product. II. H. I. WATERMAN and C. VAN VLODROP. *Rec. trav. chim.* **52,** 9-17 (in English) (1933); cf. *C. A.* **26,** 5441.—The hydrogenation of Me and Et linolates *again indicates the effect* of temp. on the reaction, high. temps. (180°) favoring the formation of Me oleate and low temps. (65°) favoring the formation of Me stearate. Pressure is relatively unimportant. Anomalies in thiocyanogen values are mentioned. Linolic acid does not react with stearic acid to form oleic acid.

J. V. VAUGHEN.

Neutralization of oils and fats. J. LEIMDORFER. *Seifensieder-Ztg.* **60,** 15-16, 34-5, 50-1, 66-7 (1933).—I. Alkali methods. Free fatty acids are neutralized by passing moist NH_3 gas into the crushed oil seeds until the pressure becomes const. (Ger. pat. 525,946, *C. A.* **25,** 4728) or by treating the benzine ext. with NH_3, NaOH or $Ca(OH_2)$. Anhyd. soaps are sol. in oil; hydrated soaps are not; the "break" of the finely divided soap in the refining process with NaOH is due to the absorption of H_2O by the anhyd. pptd. soap, and this coagulation is analogous to the sepn. into soap and lye in the salting-out process, if the temp. has been too high and little H_2O is present, the sepd. oil may, on cooling, even gelatinize on account of the soap dissolved in it. The color of cottonseed oil *is 4-fold:* (1) the unsatd. fatty acids give the oil a yellow tinge; (2) impurities give it a brownish color; (3) some color is due to chlorophyll (green) or iron-chlorophyll (brown); (4) a red color results from absorption of albuminoid impurities. The red color is partly removed by an excess of NaOH during refining, the color passing into the neutral oil held by the pptd. soap. Neutralizing with an alc. NH_3 soln. (Wilhelm method) decreases oil losses and yields light-colored oils but requires distn. to recover the solvents. Neutralization with substances that do not dissolve oils, a new secret method, yields edible oils of light color.

P. ESCHER.

Determination of oxidized fatty acids. J. GROSSER. *Seifensieder-Ztg.* **60,** 49-50 (1933).—In the detn. of oxidized fatty acids by Fahrion's method in which they cling to the walls of the separatory funnel when the acidified soap soln. is shaken out with petr. ether, G. washes this residue with H_2O and ashes it in order to remove all mineral constituents.

P. ESCHER.

Vegetable oils by extraction. A. THIEME. *Z. Ver. deut. Ing.* 77, 45-7 (1933).—Illustrated. Solvents used are: extn. benzine, C_6H_6, CS_2, CCl_4 and $C_2H_3Cl_3$. App. consist of: diffusion batteries, Böhm's continuous extn. app. and the Hansa-Mühle Hamburg continuous extractor. The latter is a bucket-elevator and spray arrangement within a closed tank and is used for soy beans with a benzene-alc. (4:1) solvent; the dried extd. meal is used as *animal feed.*

P. ESCHER.

The solubility of fats in ethylene glycol monoethyl ether and in mixtures of this with petrolatum. E. JAFFE. *Ann chim. applicata* 22, 667-73 (1932); cf. *C. A.* **26,** 6167.—Cellosolve, CH_2OHCH_2OEt, has been used as a solvent for a large no. of fats in detg. the temp. at which the fat seps. out. The temps. varied from 15.4° for cacao fat to 57.8° for hydrogenated sperm oil. As the temp. of sepn. of many common fats is so low that they sep. as solids, a mixt. of 2 cc. petrolatum, 3 cc. of cellosolve and 1 cc. of fat was used. The temps of sepn. with this mixt. are higher, 50-54° for nondrying or semidrying vegetable oils, 45-47° for drying oils. Castor oil is quite distinct, sepg. at 66.3°, and fish oils sep. at 52 to 54°.

A. W. CONTIERI.

Fish oils. A. H. MENDONCA. *Official Digest Fed. Paint Varnish Production Clubs No.* **122,** 22-6 (1933).—The source and magnitude of fish-oil production are briefly indicated. In a new plant of the F. E. Booth Co., fish oil is sepd. by centrifuge instead of settling tanks, is destearinated by refrigeration and freed from antioxygen amino compds. by chem. treatment.

G. G. SWARD.

Studies in fish oils. II. The decolorization of pilchard oil. H. N. BROCKLESBY and L. P. MOORE. *Contrib. Can. Biol. Fisheries* 7, 413-24 (1933).—The effect of temp. and quantity of earth on decolorizing efficiency was studied. By a simple acid treatment, bentonite clay can be converted into an efficient decolorizing material. Acid earths tend to cause appreciable amts. of hydrolysis, but in these expts. the optimal temp. of the earths used is below 150° and the amt. of hydrolysis found was negligible. Spectroscopic examn. of the bleached oils showed little, if any, preferential adsorption of pigments by the various earths used.

F. L. DUNLAP.

Analysis of sulfonated oils. EDWIN R. THEIS and JOHN M. GRAHAM. *J. Am. Leather Chem. Assoc.* **28,** 52-63 (1933).—The Schindler method for sepg. sulfonated oils into neutral oil, free fatty acids and sulfated compds. (*C. A.* **24,** 4412) was applied to sulfonated neatsfoot oil to which was added variable wts. of neutral rapeseed oil and various fatty acids. The trend of the results as more neutral oil is added indicates that the sepn. gives low results for neutral oil and high results for the sulfated fraction. The following modified method gave better results: Dissolve the sulfonated oil in EtOH; ext. neutral oil and free fatty acids from the EtOH soln. with petr. ether in a Soxhlet extractor; det. unsaponifiable matter and free fatty acids in portions of the residue obtained by evapg. the petr. ether ext. Dil. the EtOH soln. with H_2O and ext. unneutralized sulfated compds. and oxy-acids by shaking with CCl_4. Acidify the EtOH soln. and ext. neutralized sulfated compds. and sapond. fatty acids with CCl_4.

H. B. MERRILL.

PATENTS

Refining Oils, Fats, Waxes, Etc. *Chemical Abstracts,* Vol. 27, No. 5, Page 1225, March 10, 1933.—Alexander Wacker Ges. Fur Elektrochem. Ind. G. m. b. H. (Walter Thomke, inventor). German 565,079, Feb. 7, 1931. Mucilage and albuminous impurities are removed from oils, fats, waxes or their conversion products by treatment in the liquid phase with an aqueous solution of a phosphate in the presence or absence of an organic solvent. The amount of phosphate should be less than 10% of the oil, etc. Examples are given.

Stabilizing fats and oils against rancidity. ROY C. NEWTON and WM. D. RICHARDSON (to Swift & Co.). U. S. 1,890,585, Dec. 13. A fat or oil such as lard or corn oil is treated with about 5-10% of palm oil rich in carotenoid pigment, the mixt. is treated with caustic alkali to remove free fatty acids and is then heated above the b. p. of water but below the temp. of decompn. to effect bleaching.

Purifying oils, fats and waxes. I. G. FARBENINDUSTRIE A.-G. Brit. 366,025, Oct. 27, 1930. Org. *O compds. consisting* mainly of aliphatic alcs., fatty acids, fatty acid esters and aliphatic ketones and aldehydes are sepd. from non-aromatic hydrocarbons contg. at least 8 C atoms by treating the mixts. with liquid SO_2 at below 75°. On standing 2 layers form, the upper being mainly hydrocarbons and the lower a soln. of the O compds. in the SO_2 from which they may be sapd. by evapn. or freezing.

Refining mixtures of neutral oils and free fatty acids. WILHELM GENSECKE. U. S. 1,889,652, Nov. 29. Material such as soapstock from oil refining is treated with an oil solvent such as benzene which is a non-solvent for soaps and the soln. is treated with a neutralizing agent to convert free fatty acids present into soaps; the soaps are sepd. from the soln. of oil and are washed with the oil solvent until they are substantially free from neutral oil, and the residual oil solvent is removed from the soap by distn. after converting the soaps in the mixt. into free fatty acids. Cf. *C. A.* **27,** 619.

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