ABSTRACTS

Soaps

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Soap Powders. *Oil and Colour Trades Journal,* Vol. 84, No. 1812, p. 38, July 7, 1933.—British 378,973. Lever Brothers, Ltd., Port Sunlight, C. W. Moore, Grappenhall Cottage, Grappenhall, Warrington, and H. Ballantyne, Copt Hill Court, Burgh Heath, Tadworth.—Soap powders contain alkali perborate and a small percentage of a salt of magnesium having no reducing action on the perborate. Suitable salts are the sulphate, chloride, and nitrate in a proportion equivalent to 0.1 to 0.3 per cent of magnesium oxide. In an example, a solution of 1 lb. of crystallized magnesium sulphate in a small quantity of water, 10 lb. of 75° Tw. sodium silicate, and 22.5 lb. of anhydrous sodium carbonate are well mixed into 50 lb. of soap in a pasty or molten condition; when the temperature is below 50° C. 9.5 lb. of sodium perborate are added, and the mixture reduced to powder.

Detergents. *Oil and Colour Trades Journal,* Vol. 84, No. 1812, page 44, July 7, 1933.—British 379,438. R. Vidal, 26 Rue Jean Jacques Rosseau, Asnieres, Seine, France.—Fatty acids such as oleic acid or those derived from copra, castor, olive, groundnut or palm oil are treated with solutions of alkali-metal or ammonium sulphite or hyposulphite to yield sparingly soluble compounds which on subsequent treatment with caustic alkali, or alkali-metal or ammonium carbonates yield soluble crystalline substances suitable as detergents. The detergent may be obtained directly by acting upon fatty acids with the two reagents in admixture.

"Antifreezing" Composition for Radiators, etc. *Chemical Abstracts,* Vol. 27, No. 14, page 3571, July 20, 1933.—Oliver P. Greenstreet. U. S. 1,905,380, April 25.—Kerosene, 3 gallons, is mixed with oil of mirbane 6 oz., sulfonated bitumen 6 oz., glycerol 3 oz., flax seed 0.5 oz., and ZnO 0.5 oz.

"Antifreezing" Composition. *Chemical Abstracts,* Vol. 27, No. 14, page 3571, July 20, 1933.—Wm. E. Kemmerich. U. S. 1,906,972, May 2.—A solution suitable for automobile engine cooling systems contains urea 10 to 45 parts per 100 parts of solution such as H_2O. A ureide of glucose or the like also may be used.

Roofing Mastic. *Chemical Abstracts,* Vol. 27, No. 14, page 3581. July 20, 1933.—Albert C. Fischer (to Philip Carey Manufacturing Company). U. S. 1,905,376, April 25.—A bituminous base such as asphalt is incorporated with an adhesive ingredient such as a rosin and oil mixture with which glycerol is used to prolong the setting. Cf. C. A. 26, 3897.

Coating-Composition for Surfaces of Iron, etc. *The Industrial Chemist,* Vol. IX, No. 101, page 213, June, 1933.—British 386,542. British Thomson-Houston Company, Ltd., Crown House, Aldwych, London. June 15, 1932. (Convention date, June 17, 1931.)—Iron and steel surfaces are treated to prevent rusting by coating with an aqueous solution of ammonium oleate, which on drying decomposes to form oleic acid.

Transparent soap patent. *Perfumery and Essential Oil Record,* Vol. 24, No. 8, page 288, August 22, 1933.—A process has been developed by Henkel and Cie, G. m. b. H. of Dusseldorf (British 392,400) by means of which a clear, high-percentage, milled, transparent soap may be obtained without filler substances. The process consists essentially in saponifying a suitable batch of fatty matter having a high degree of purity with alkalies also having a high degree of purity in the presence of resin in amounts sufficient to retard the crystallization. Neither electrolytes nor the usual additions of glycerine, alcohol, sugar, soda crystals, or the like are used. The hot fluid soap is suddenly cooled to room temperature and if necessary dried in the air, taking care to avoid supersaturation. The glass-clear soap obtained is milled and if desired mixed with scent and other additional substances on cold rollers and then pressed into a rope-like form in a suitable press or plodder. For normal batches the content of fatty acid should not greatly exceed 70 per cent; otherwise a supersaturated solid solution is obtained and crystals are formed in the supply of the previous sudden cooling.

The Foaming of Soap Solutions. *Perfumery and Essential Oil Record,* Vol. 24, No. 6, page 217, June, 1933.—The capacity of a soap to lather freely is generally regarded by the public as a sign that it is a good detergent, notwithstanding that Preston & Richardson showed a few years ago ("P. & E. O. R.," 1929, 467) that there is no simple relationship between surface tension and lathering power, and that a low surface tension, i.e., a good detergent power, is not necessarily accompanied by a high tendency to foam.

The subject of the foaming of soap solutions has recently been very fully investigated by Lederer ("Fettschau. Umschau.," 1933, 69) both from the physical and mathematical point of view. He finds that for individual soaps the stability of the foam appears to increase with rise in carbon content of an homologous series of fatty acids, and that the presence of unsaturated acids in the soap decreases its stability, whilst concentration increases it. The "foam number" Fn (volume of liquid converted into foam under definite conditions) is less affected by external conditions, e.g., method of foam production, than is the "foam volume" Fv (the volume of foam formed from a given amount of solution).

Washing and Soap Powders Containing Sodium Silicate and Their Behaviour with Hard Water. Welwart *Seifensieder Ztg.,* 1932, 59, 489-490.—Sodium carbonate and sodium silicate mixtures are no better than is sodium carbonate alone. Certain commercial products contain insoluble sodium hydrogen silicate, which, with calcium carbonate and a little sodium carbonate forms a white deposit on the fabric. Sodium silicate with hard water forms a mixture of acid silicate, calcium carbonate, and magnesium carbonate. Sodium silicate does not stabilize perborate in presence of soap owing to hydrolysis. (P. & E. O. R., 24, 219.)

Investigation on Soap and Igepon Solutions. K. Boedeker. *Melliand Textilber,* 13,436-8 (1932).—Warm 3% solutions of Na stearate and oleate contain colloidal particles visible under the ultramicroscope, but on cooling to 20° the Na stearate solution gels and then contains closely interlocked needle crystals which gradually disperse when the solution is again heated; a 20% solution of Na oleate gels at 20° and then shows a structure similar to that of the Na stearate solution. Three per cent solutions of Igepon-A and -T (cf. C. A. 26, 2323) contain no colloidal particles and behave as true molecular solutions. The formation of insoluble Ca soaps of stearic and oleic acids in hard water is prevented by the presence of about 16% of Igepon-A (calculated on the weight of Na stearate or oleate). B. C. A. (C. A. 27, 3341).

The Application of Activated Carbon in the Decolorization of Glycerol. G. Vuigovskii. *Masloboino-Zhirovoe Delo,* 1932, No. 11, 51-3.—Conclusions: (1) Activated C completely decolorizes glycerol, thereby also decreasing the contents of ash and organic impurities. (2) The decolorization is facilitated by dilution; temperatures up to 60° do not interfere. E. Bielouss (C. A. 27, 3353).

Saponification of Oils and Fats by the Cold Process. J. Davidson and E. J. Better. *"Fett-chem, Umschau,"* 1933, 40, 26 and 52.—In an experiment employing a deficiency of alkali for the cold saponification of coconut oil, the amount of "free alkali" fell immediately after mixing (reaction with free fatty acids), and then gradually increased until the emulsified mass thickened (about 1½ hours) after which it decreased steadily as saponification proceeded in the frame. The "unsaponified fat" from a soap prepared with insufficient alkali (by the cold or the boiling process) appears to consist of a mixture of fatty acids and mono- and di-glycerides. Such a soap, e.g., saponified with 81 per cent of the theoretical requirement of alkali, and, containing 10 per cent of "unsaponified fat" still gives clear aqueous solutions. Traces of free alkali (of the order of 0.03 per cent sodium hydroxide) are to be found in all soaps, whether the theoretical, or a deficient, amount of alkali is used for the saponification. By proper manipulation, using the theoretical equivalent of alkali, full-saponified cold-process soaps can be manufactured which may be (1) perfumed and used directly; (2) milled as toilet soaps, this being less than usual, or (3) dissolved in water and grained and fitted in the usual manner, the last method being much applied commercially in Europe. (P. & E. O. R., 24, 6, 219.)

New Products from Fatty Acids. Raymond Vidal. *La Revue des Produits Chimiques,* 1932, Vol. 35, p. 577.—The chemistry of oleic acid is studied particularly as regards its behavior in hydrolysis. Structural formulae show the re-arrangement of atoms in the molecule during hydrolysis. Conditions are set up defining practical application of the process. New products formed by the action of hypochlorites on the hydrolyzed fatty acids are studied. This also applies to the action of sulfites on the same acids. The products obtained are in powder form, easily soluble in cold water. They are used to treat cotton and linen before bleaching to accelerate this process; also in the washing of wool, degumming silk, etc. The products obtained by the action of hypochlorites are acid in reaction and pastry in form. They may be used as detergents, solvents and softeners. They are used in the textile industry, in the leather industry for the preservation of skins and hides, etc. (*Soap,* 9, 7, 65.)