ABSTRACTS

Soaps

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Relation between properties of fats and their soaps. *The Perfumery & Essential Oil Record,* June, 1932.—It has long been recognized that the suitability of an oil or fat for soap-making is largely determined by its titre and iodine value, fats with a high titre and low iodine value being suitable for hard soaps, and those with low titre and high iodine value for soft soaps. Krafft showed many years ago that the setting point of the neat soda soap is approximately the same, in general, as the melting point of the fatty acids from which it is made, but made no attempt to express the relationship more exactly. During recent years, however, several attempts have been made to correlate more definitely the properties of a soap with the constants of the fat or fats from which it is made, and express them in mathematical formulae. Thus, we have had the I. N. S. or hardness factor and solubility ratio of Webb, followed by the formulae of Das Gupta ("P. & E. O. R.," August, 1931, p. 209) of $\frac{\text{iodine value}}{\text{titre}}$ for hardness and $\frac{\text{saponification value}}{\text{titre}}$ for solubility and lathering power. Two new formulae connecting the setting point of a neat soap with titre and iodine value have now been devised by Kawakami, who has carried out in Japan a most exhaustive scientific investigation of the whole process of soap-boiling. He finds (J. Soc. Chem. Ind., Japan, 1932, 31-35) that if T_s is the setting point of the neat soap, T_f that of its fatty acids, and J the iodine value of the latter, then

$$T_s = 1.34\,T_f - 8.5$$

and

$$T_s = 70 - 0.606J\ \ 0.0062J^2$$

Soaps containing coconut fatty acids are exceptional in having abnormally high setting points.

Rosin soap and rancidity. *Soap Gazette and Perfumer,* June, 1932.—It is shown that when free fatty acids are added to a rosin-fat grain soap, and the whole boiled for one hour, the free acids at the end of this period are for the most part rosin acids. Secondly, the rancidity development in soaps due to the presence of free fat, is prevented by small additions of 2 to 3 per cent. of rosin soap; and thirdly, soaps made from charges containing drying oils show practically no deterioration when 3 per cent. rosin soap is present. The author's general conclusions are that small additions of rosin soaps to the soap base have a pronounced protective colloid action against rancidity and make for the improvement in quality of the soap from every standpoint. —C. Bergell (Zts. Oel-u. Fett. Ind. 25; 233-4).

Improving the foam properties of soaps. *The Oil & Colour Trades Journal,* June 24, 1932.—The kind of fat used, method of saponification, base used, and, finally, added materials, all have an effect on the foaming power of soaps. Soaps made from coconut and palm kernel give soaps which foam well. The foam is, however, of a coarse character, and such soaps are not economical. The best effect is obtained by using in the mixture some hard fats. There appears to be opinion in favor of cold soaps, which may depend on the presence of small amounts of mucilaginous emulsifying materials. No general rule can be stated as to the relative effects of sodium and potassium soaps. A writer in "Allg. Oel u. Fett Z." (1932, p. 293) gives an example of a potassium soap made from 60 per cent coconut oil and 40 per cent olive oil, which had very good foaming powers. On the other hand, sodium oleate foams better than the potassium salt. Good results are obtained by adding to a sodium soap 5-10 per cent of a potassium soap made from the saponification of 10 per cent coconut fatty acids and 30 per cent stearic acid with 40 per cent KOH liquor. Triethanolamine soaps reduce the foaming power, but the addition of 5 per cent of a soap prepared from 5 kg. coconut oil fatty acids and 1 kg. triethanolamine with an addition of 1 kg. of glycerine effects an improvement. If castor fatty acids or stearic acid are added, the amount must be confined to 3 per cent. Greater additions increase and raise the danger of rancidity. Sulphonated products are added to soaps to increase foaming power. Additions of very small amounts of saponins as gum tragacanth may be made (0.1-0.2 per cent).

Solvent soaps. *The Oil & Colour Trades Journal,* June 24, 1932.—According to Krings ("Allg. Oel u. Fett. Ztg.," 1932, p. 288), owing to the present economic difficulties, soapmakers are turning their attention to the production of solvent-containing soaps. The solvent in these soaps aids the emulsification of the soap, and assists the removal of the fat, oil, and dirt present on goods being washed. Due to the fact that many of the newer emulsifying agents which can be used as soap assistants are covered by patents, they cannot be used universally by soapmakers. However, it is possible to use sulphonated castor oil for this purpose. This oil may be used as a carrier for a number of solvents, which can then be incorporated with soaps, which are thus converted into better wetting agents. A favorable addition is about 6-8 per cent of the solvent mixture which contains about 3 per cent of the sulphonated castor oil and a solvent such as benzene, turpentine, or petrol. Precautions have to be taken against the danger of fire and the loss of solvent during the preparation of the material. Suitable tight packing is necessary.

Radioactive salts in soap. *The Perfumery & Essential Oil Record,* June, 1932.—During the last few years there have been proposals to add vitamins to soap, and also to irradiate soap by subjecting it to ultra-violet light. A new development consists in adding to soap a mineral water from a radioactive spring in Spain, or the salts derived therefrom, and such a soap, containing 5 per cent of these salts, is now on the market, and claimed to have remarkable curative and prophylactic properties. The water contains small quantities of iodine, caseium and rubidium, appreciable amounts of lithium chloride and sodium bromide, a large amount of potassium chloride, together with salts of calcium and magnesium, and a very large proportion of sodium chloride. An unusual feature of the water is the presence of 0.14 part per 100,000 of sodium arsenate. A "mud" is also obtained from the same source; this contains as much as 0.64 per cent of arsenic anhydride. The soap appears to be made entirely from babassu oil, and for ordinary toilet purposes it is recommended that it should be used in the usual way, but that for the treatment of disease, a layer of thick lather should be allowed to dry on the affected part.

Patents

1,877,291—Continuous method for olefin esters from fatty acids. K. Frolich and P. L. Young. (Standard Oil Development Co.)

1,871,927—Textile Oil with an Antioxidant. F. W. Sullivan, Jr., Whiting, Ind. (Standard Oil Co.)

1,874,388—Making a cake soap from sprayed soap. P. M. Travis, Ridgewood, N. J.

1,871,889—Sulfonated mineral textile oil. A. M. Kinney, Chicago. (Standard Oil Co.)

German Patents.

552,986—Saponifying fatty acids from oxidized hydrocarbons. I. G. Farb. A. G.

COD-LIVER OIL EXPORTED FROM NEWFOUNDLAND from January 1 to July 22, 1932, totaled 29,825 gallons as compared with 40,000 gallons for the same period in 1931. (Consul General Edward A. Dow, St. John's.)

IMPROVED BRITISH GLYCERIN OUTPUT REFLECTED IN TRADE FIGURES—British exports of glycerin during the first six months of 1932 totaled 17,380 hundredweight (of 112 pounds of crude and 73,827 hundredweight of distilled as compared with 13,791 and 34,107, respectively in the first half of 1931 coincident with the rise in exports, British imports fell to 6,268 hundredweight of crude and 1,717 hundredweight of distilled, as compared with 11,957 and 10,667, respectively in the corresponding months of 1931.