

2700 Å increasing slowly if measured in alcohol but more rapidly if measured in alkaline solution. Destruction of the peroxides formed gave products absorbing much more strongly at 2700 Å in either alcohol or alkali than the parent oxidized compounds. Decomposition of all peroxides to conjugated trienes and dienes would have produced much larger increases in absorption than were observed. The dihydroxy stearic acids, isomeric 9,10-ketolstearic acids, 9,10-diketostearic, and 9,10-oxidostearic acids were examined in alcoholic and alkaline solutions, both in the absence of and in the presence of oleic acid. These substances were also studied after autoxidation. However, under no conditions could they be responsible for the absorption of oxidized fats in the region of 2750 Å. It is suggested that the increased absorption of the oxidized fats is due in part to conjugated systems containing carbonyl groups or to conjugated polyenes formed by enolization of these systems. II. THE OXIDATION OF DIENOIC FATTY ACIDS. R. T. Holman, W. O. Lundberg, and G. O. Burr. *Ibid.*, 1386-1390. The absorption spectra of ethyl linoleate, linoleic acid, and 10,12-linoleic acid were studied in neutral and alkaline alcoholic solutions before and after oxidation. Autoxidation of each of these compounds is accompanied by an increase in the absorption at 2750 Å which is not directly related to the peroxide value. Oxidation of the conjugated linoleic acid greatly reduced the absorption at 2300 Å. However, the absorption of the oxidized linoleic acid is spectroscopically unlike that of oleic acid. The absorption of acrolein, *alpha*-methylacrolein, mesityl oxide, phorone, crotylideneacetone, and *beta*-ionone, used as reference substances, indicates that the structures represented by these compounds could not account for the absorption of autoxidized linoleic acid. Cool alkali was

found to have no effect upon the absorption of conjugated or non-conjugated fresh fatty acids but to produce marked changes in the oxidized products. III. ULTRAVIOLET ABSORPTION SPECTRA OF OXIDIZED OCTA-DECATRIENOIC ACIDS. R. T. Holman, W. O. Lundberg, and G. O. Burr. *Ibid.*, 1390-1394. The changes in ultraviolet absorption spectra were followed during the oxidation of linolenic acid, ethyl linolenate, elaidolinolenic acid, pseudooleostearic acid, *alpha*-eleostearic acid and *beta*-licanic acid. In the case of the non-conjugated trienes, oxidation was accompanied by increased absorption with production of maxima at 2350 and 2750 Å. Oxidation of the conjugated trienes decreased absorption in the region of 2600-2800 Å, and increased absorption near 2300 Å and above 3200 Å. Since the spectra of purified fatty acids, conjugated or unconjugated, are not affected by cold alkali, it is concluded that the absorption bands which appear with autoxidation are due to oxygen-containing chromophores.

PATENTS

METHOD OF TREATING VULCANIZED OILS. K. W. Posmansky (Stamford Rubber Supply Company). *U. S. 2,384,491*. In the manufacture of vulcanized oil products from oils, the steps comprise mixing with sulfur and heating until vulcanized to the desired degree and then treating the vulcanized oil at room temperature with ammonia until the hardness of the vulcanized oil is substantially increased.

PLASTIC COMPOSITION AND METHOD OF PREPARING SAME. J. C. Cowan and H. M. Teeter (Secretary of Agriculture). *U. S. 2,384,443*. A process of manufacturing a plastic composition comprises intimately mixing a polyester of a dihydric alcohol and a polymeric fat acid with rubber compounding agents, heating the mixture until it becomes millable and then plasticizing the resulting composition by milling.

Abstracts

Soaps

FATTY ALCOHOLS. Ernest Stossel. *Soap* 21, No. 8, 38-9, 70, 78 (1945). By catalytic hydrogenation processes, using copper chromite or nickel, any natural fat or mixture of fats can be converted into the corresponding alcohols almost quantitatively. Higher fatty alcohols have been available from natural waxes, from the high pressure hydrogenation of fats and by synthesis from paraffin hydrocarbons and ethylene oxide. The oxidation of paraffins is another possible source, but this process involves the following problems: Attempting to increase optimum yields of alcohols and decrease the amount of by-products formed, the separation of alcohols from undesirable by-products, and selection of appropriate raw material. The yield can be increased by oxidizing in the presence of weak inorganic or organic acids of low molecular weight acids. The separation of the oxidized fraction from the non-oxidized may be effected by distillation or by pressing with or without selective solvents. To separate alcohols from the oxidized fraction the acids are removed by saponification and the neutral products esterified with sulfuric or phosphoric acid. The calcium and magnesium salts of the monosulfuric esters of these fatty alcohols are soluble

in cold water. Thus the sodium salts can be used in hard or soft water as detergents and wetting agents. These salts are not affected by dilute mineral acids and can be used as detergents in acid media. The hydrosulfates and sulfonic acids derived from these alcohols also have excellent detergent properties.

NEW SURFACE-ACTIVE AGENTS. W. K. S. Wallersteiner. *Soap, Perfumery & Cosmetics* 18, 538-41 (1945). The general field of the new surface-active agents is reviewed. Types are classified as anionic, nonionic, sulphonated peroxy-fatty alcohols, and cationic agents. Methods of determining the following properties are given: foaming, wetting, surface tension, kataphoresis, emulsion stability, germicidal activity, tissue toxicity and solubilizing activity.

PATENTS

DETERGENT COMPOSITION. Truman E. DeVilliers (Cities Service Oil Co.). *U. S. 2,383,114*. A detergent mixture comprises approximately 30% of orthodichlorobenzene, approximately 20% of ethylene glycol monobutyl ether, approximately 15% of glycerin, approximately 7% of water, the remainder of the mixture consisting essentially of an ethanolamine oleate soap.

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