ABSTRACTS

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Fatty acids of high molecular weight may be sulfonated to a high content of combined sulfuric acid by carrying out the sulfonation in the presence of chlorides of sulfur, boron chloride, boric acid or its anhydride, or mixed anhydrides of acetic acid or its homologs with inorganic acids such as boric, sulfuric, or chromic. Fr. Pat. No. 688,637.

In a new method for the preparation of soluble oils, castor oil was esterified by treating for twelve hours with the product of reaction of chlorosulfonic acid and pyridine. The trisulfuric ester of castor oil was isolated by neutralizing with sodium carbonate and distilling in vacuo at 40°. It was purified by solution in absolute alcohol. *Bull. soc. ind. Mul.* 96, 636-42 (1930). *Chem. Abstr.* 27, 1111 (1931).

Fat-containing solid animal material is digested under high steam pressures to melt fats and oils, and the digested material is continuously dehydrated in a vacuum to a moisture content below 20%. U. S. Pat. No. 1,789,751.

For the production of high-grade soaps from low-grade fats, it is claimed that dark low-grade fats, high in fatty acids may be esterified with methyl or ethyl alcohol and the esters distilled in a vacuum; the distilled esters are used for the manufacture of light-colored neutral soaps, the alcohol being recovered. Distilled esters obtained from original material of high iodine value may be partly hydrogenated before saponification. Alternately the low-grade fat may be hydrolyzed before esterification and the glycerol recovered. U. S. Pat. No. 1,701,703.

A pulverizable soap may be made by producing a uniform emulsion of fatty oils with an alkaline solution and a water-absorbing substance such as soda or potash 60°-70°, then allowing the emulsion to stand for a short period, say 4 to 5 hours. Brit. Pat. No. 288,584.

The darkening of fatty acids obtained by the Twitchell process is said not to be due to the addition of sulfuric acid. All reagents used in the catalytic saponification process increase the depth of color of the fatty acids with increase in heating time. The presence of air also increases the color. *J. Soc. Chem. Ind. Japan.* 33, Suppl. Bind. 500-4 (1930).

J. Davidsohn, in *Metallborse* 20,1742-3 (1930), reviews Russian contributions on hydrogenation of vegetable oils. Carbon monoxide gas is said to be a poison against the conversion of oleic into stearic acid, but not against the conversion of linolenic or linolic acid into oleic acid. *Chem. Abstr.* 27,5519 (1930).

Oxidation products of paraffin hydrocarbons may be treated with caustic alkali and the unsaponifiable portions separated out by cooling to 15° C. or lower, preferably in easy stages. The soap solution is filtered out and after neutralization with peanut oil fatty acids, may be concentrated for liquid, soft or hard soaps. *Brit. Pat.* No. 308,985.

Turbidity in soap solutions may be due to hydrolysis or to precipitated lime soaps. The latter may be prevented by the addition of 0.5% potassium chloride or 1 to 3% sugar solution on the basis of the soap solution. *Chem. Umschau Fette, Oele, Wachse u. Harze,* 37, 3233 (1930).

In experiments to determine the rate of oxidation of linseed oil at 160°, samples of raw linseed oil, linseed oil acids and synthetic esters of oleic and linolenic acids were blown with oxygen in a closed apparatus supplied with an electromagnetic circulating pump. The water and carbon dioxide evolved during oxidation were absorbed in sulfuric acid and soda lime. The hydrocarbons evolved were burned to water and carbon dioxide, which were likewise absorbed. Gelation of the pure oil occurred after 5 hours, when approximately 12.5 percent of oxygen had been absorbed. Dilution of the oxygen stream with 50 percent of nitrogen increased the time of gelation to over 9 hours and decreased the oxygen absorption by 5.7 percent. Though the free linseed oil acids gelled slowly and absorbed much oxygen, the presence of 15 percent of these acids accelerated the gelation of the raw linseed oil. *Ind. Eng. Chem.* 23, 53-7 (1931).