ABSTRACTS

David Wesson, *Abstract Editor*

The unsaponifiable volatile matter produced during the hydrogenation of fish oils is said to contain iso-aliphatic C_9, C_{10} and C_{13} primary alcohols of the saturated and olefine series together with hydrocarbons of the iso-paraffin and olefin series. *J. Soc. Chem. Ind. Japan,* 34, Suppl. Bind. 35-7 (1931).

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Decrease in speed in the progressive hydrogenation of oils is said not to be due to the catalyst, since that can be reused several times, nor to the concentration in the oil of ethylenic linkages, since linseed and fish oils are hardened less rapidly than cottonseed oil; but is due, it is claimed, to the increasing concentration of saturated acids and the manner of hydrogenating. By determining the insoluble bromides formed by highly unsaturated acids, at the different stages of fish-oil hardening, the fact was confirmed that clupanodonic acid can be reduced completely to less unsaturated acid, without forming stearin, by means of gentle hydrogenation, under the influence of reduced temperatures, less agitation and smaller amount of catalyst. *Z. Angew. Chem.* 44, 184-7, *Chem. Abstr.* 25,2582 (1931).

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In experiments on the progress of catalytically induced rancidity in oleic acid and oleic ethyl ester, hydroquinone reacted throughout as a strong negative catalyst. Ferric chloride acted as a strong positive catalyst, as judged by the Kreis test, while ferrous oleate appeared to be a negative catalyst. *Z. angew. Chem.* 43, 1108-12; *Chem. Abstr.* 25, 1693 (1931).

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Carbon dioxide gas or steam may be passed through hydrogenation converters before removal of the catalyst. Either has been found quite satisfactory for the purpose, according to experimenters in Russia. *Maslob. Zhir. Delo* No. 5, 23-4.

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Those support materials which inhibit the catalytic activity of platinum and palladium have been found to affect nickel similarly. The behaviour of supports with relation to the hydrogenation of cottonseed oil with nickel catalyst may be classified as follows: reducible heavy metal oxides completely inhibit the activity of the nickel; the salts of those metals that decompose upon heating in a stream of hydrogen completely inhibit activity; substances with corrosive properties retard but do not completely inhibit activity. The salts in every case have been found to yield more active supports than the corresponding oxides. The more inert the support becomes toward nickel, the greater is the tendency to enhance activity, and the less inert the support the greater its tendency to retard activity. *Trans. Elektrochem. Soc.* 59, preprint (1931).

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It is suggested that yield differences in the oil mill between the calculated yield based upon laboratory analyses and the actual factory yield (about 1%) may be due to phosphatides or lipoids showing different solubilities under laboratory and factory conditions. *Chem. Umschau Fette, Oele, Wachse u. Harze* 38, 33-4 (1931).

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A suggested modification of Dopfer's method for the determination of fat in oil seeds is as follows: place 4 grams of the ground seed in a round-bottom, heavy glass bottle together with 40 cc. of gasoline (b.p. 40-60° C.), 10-12 grams of sand and 5-6 steel balls of 10-12 mm. diameter and grind in a shaking machine for one to two hours or until apparently dust-free; allow to settle, evaporate twenty cc. of the gasoline extract, weigh and calculate the per-cent of fat according to the formula: $x = (100 \times 40 \times f)/4(20 - 1.0753f)$ in which f is the weight of the oil residue from 20 cc. gasoline solution and 1.0753 is the specific gravity factor for the oil (1.00/0.93). *Chem.-Ztg.* 55,70 (1931).

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The real cause of the temperature increase in the Mackey test is said to be rapid oxidation of the linolic or linolenic acid when present in the olein tested. This temperature increase is accelerated by iron soaps or other positive catalysts and is inhibited by negative catalysts such as beta-naphthol. *Seifensieder-Ztg.* 58, 29-32 (1931).