# Abstracts

## Oils and Fats

Edited by
**M. M. PISKUR**

Ltd.) *U. S. 2,188,273.* Gaseous $SO_2$ is used as a catalyst in the process.

CONDENSATION PRODUCT AND METHOD. E. T. Clocker. *U. S. 2,188,885-90.* The products suitable for resins, lacquers, varnishes, enamels, plastic masses, etc., are condensation products of fat acids and phenols, acyclic olefinic alc., acyclic olefinic aldehydes, their esters or like material.

CONDENSATION PRODUCTS OF HIGHER FATTY ACID COMPOUNDS WITH BORIC ACID. K. Stickdorn (to Deutsche Hydrierwerke A.-G.). *U. S. 2,187,334.* A hard wax-like product is prepd. by the condensation of hardened castor oil, boric acid and acetic acid anhydride.

GLYCERIN FROM CARBOHYDRATES. Heinkel and Cie G.m.b.H. *Ger. 682,911 Cl6b30.* Example: The fermented sludge is mixed with sawdust, dried, extd. with ethyl acetate at 70°; glycerine is exted. from the solvent with water and separated from the latter by distn.

FERMENTATION GLYCERINE. Deutsche Gold- und Silber-Scheideanstalt. *Ger. 684,014* C16b30. Glyerine is extd. from fermentation mash with pyridine, separated by distn. and treated in a known manner with activated carbon.

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## Soaps

**Edited by M. L. SHEELY**

DRY-CLEANING VS. CLOTH SCOURING. Roland E. Derby. *Textile World 89,* (11), 73 (1939). Experience indicates that the continuous dry-cleaning process is safe and economical. It eliminates one of the most causes of streaky, cloudy, and shady fabrics. The method leaves the cloth in excellent condition for subsequent processing. No wool oil is present; hence, soap in fulling mills has but one duty — felting. Fulling now can be done without consideration of dirt removal; and methods already known, such as acid fulling, can be applied to many fabrics. If in some cases it is found necessary to use soap to obtain a certain finish, the amount required is far less than that necessary to full a greasy piece. Cold-water soaps and sulphated fatty alcohols are all that are needed for scoured finishes, and no hot water is required for rinsing. In no instance is addition of more soap required for scouring operations.

LABORATORY DETERGENCY TESTS. Frank A. Lucy. *Textile World 89,* (11), 73 (1939). In the case of some soaps, other investigators have noticed a similar correlation, the temperature for greatest efficiency being roughly the melting point of the fatty acids of the soap. However, soaps of oleic acid, while effective in cold water, are reputed to be more efficient at higher temperatures, so the correlation may be accidental.

Adsorption of the detergent from solution onto the fiber and dirt is thought to be the principal factor in detergent action. The shape of these curves can be explained in a general way by assuming that at low temperatures, the solution, as molecules, of the detergent from colloidal particles and coarser aggregates is slight and perhaps rather slow, so that the process of cleaning is correspondingly retarded. At somewhat higher temperatures the conditions become more favorable, but when the temperature is too high, the adsorption will be reduced by much redissolving of the agent from the adsorbed layers, and the stability of the complex with removed soil will also be reduced. This explanation is capable of considerable refinement, but further discussion here is unnecessary.

The general rule is that detergents composed of large molecules work best at high temperatures. Structurally related compounds with molecules that are too small will be most efficient below the freezing point of water, while if the molecules are too large, a temperature above the boiling point will be required for good cleaning. Thus the size of molecules to be used is restricted. The tests confirm the fairly well-known fact that for each detergent there is a set of conditions for which this detergent is most effective, and that no one agent can be expected to work well under all conditions.

COLD PROCESS SOAPS — II. J. M. Vallance. *Soap 16,* (2), 30 (1940). Up to 10% of Na silicate or 5% soda crystals are reasonable minimums for addition to cold process soaps. Both exert a hardening effect, while the carbonate will effloresce to form an unsightly white powdery film on the surface of the cake if an excessive quantity is incorporated. 2-5% of buffered sodium metaphosphate and sodium pyrophosphate deserve inclusion in good quality, lightly filled soaps by virtue of their ability to increase lathering power and disperse lime soaps. Methyl cellulose has also been suggested as a filler. 5% of Cornish China clay or bentonite have been proved to be efficacious as colloidal detergents, and can also absorb and neutralize free alkali. Bentonite may be incorporated with the fats, the alkali being added last of all, which is said to facilitate complete and rapid emulsification and saponification. As to perfuming, only the most alkali-stable essential oils, synthetics and isolates should be employed, such as geranium, Java citronella,

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gingergrass, patchouli, linaloe, rosemary, sassafras, East Indian and Australian sandalwood, spike, white thyme and wintergreen. As to color, rhodamine reds, tartrazine and metanil yellows, naphthol orange, mandarin and disulfine blue may all be used to good effect. Scrap from colored soaps may be added to white soap to form mottled soaps, and used in the manufacture of milled toilet soap and of powdered soap. Mineral salts can be incorporated into cold process soaps as this is the only type of soap capable of binding large amounts of electrolytes and of yielding solutions with low surface tension, in order to obtain the requisite depth action and penetrability. Shaving soaps, transparent soaps, floating soaps and mechanics hand soaps are made by this process.

Soap stabilization. R. L. Sibley. *Soap 16,* No. 2, 21 (1940). The effectivenes of an antioxidant is determined by storing soap in an oven at a temperature of 50° C. and observing the time period required for an untreated soap to develop rancidity and the period for a treated soap to develop odor. A neutral soap is prepared from three parts of edible tallow and one part of coconut oil, and incorporated therein is 0.1% by weight of the antioxidant to be tested. Five grams of the treated soap were then placed in a 250 c.c. glass stoppered flask, and a piece of filter paper saturated with water was torn into small pieces, and added to the soap in the flask. The flask was tightly stoppered and placed in an oven maintained at a constant temperature. The thioureas described by Martin in U. S. 2,154,341 exhibited particularly favorable properties; s-di (p-fluoro phenyl) thiourea exercized a stability for 40 days. In general the aryl substituted thioureas are somewhat superior to the alkyl substituted thioureas as soap antioxidants. In the case of the substituted groups, one containing an ortho substituent and preferably a negative or acidic ortho substituent is more favorable. The sulphur atom present in the thiourea plays some major part in the preservative action. This oven ageing test does not give the same results as the peroxide test proposed by D. H. Wheeler, but it is thought that it more closely approximates the commercial conditions.

Zinc oxide in soap making. Paul I. Smith. *American Perfumer 40,* (1), 57 (1940). Zn oxide, while achieving a high degree of pigmentation, tends to decrease the percentage of free fatty acids present in the soap by reacting with them to form an insoluble zinc soap which is uniformly mixed throughout the body of the soap.

Zn oxide is also useful as a fixative for both color and perfume. Its active surface enables it to draw foreign substances into its capillaries, i.e., to bind them by adsorption.

The properties of the pigment can best be exploited if the soap is on the hard side. Inferior grades of the oxide should be avoided when using in good white soaps as lead or iron salts or oxides present could cause spotting in the soaps.

### PATENTS

Detergents in cake form for toilet purposes. Wm. G. Beckers. *U. S. 2,169,829.* A mildly acid detergent of good lathering and cleansing properties is formed of boric acid (which serves as a binder) and the Na salt of the acid sulfuric acid ester of tech. lauryl alc. or other suitable water-sol. salts contg. an alkyl radical of at least 8 C atoms and radicals of sulfuric or phosphoric acid.

Apparatus for making, removing, and processing soap and the like. Benjamin H. Thurman (to Refining, Inc.). *U. S. 2,185,653.* An apparatus for producing and cooling comminuted soap in substantially anhydrous condition comprising, in combination: a vapor separating chamber; conveyor mechanism associated therewith, said conveyor mechanism having an element positioned in said chamber constructed and arranged to push the comminuted soap continuously from said chamber while preventing the ingress of air thereto; means for cooling the anhydrous and comminuted soap in said conveyor mechanism comprising means for withdrawing water vapor from said conveyor mechanism to provide for vaporizing pre-determined portions of said water whereby to cool and hydrate the comminuted soap to the desired extent.

Lubricating oil. Joseph Cole (to Sinclair Refining Co.). *U. S. 2,183,009.* The method of depressing the pour point of a petroleum lubricating oil which comprises reacting chlorinated paraffin wax with stearic acid in the presence of anhydrous aluminum chloride, to form a liquid product, removing solid constituents from this liquid product, and adding the liquid product to the petroleum lubricating oil.

Detergent composition. Souren Z. Avedikian. *U. S. 2,187,536.* An alkaline detergent composition giving a solution of substantially constant pH comprising a strongly alkaline substance of the group consisting of tri-basic alkali metal phosphates and alkali metal carbonates buffered with a mixture of di-basic alkali metal phosphates and borax in substantially the ratio of 1:1.