

## Detergent alcohols in the news

Increased discussion of detergent alcohols began this summer when Procter & Gamble announced in August that it plans to double the detergent alcohol capacity of its Cincinnati and Sacramento plants, which use natural fats and oils feedstocks.

About the same time P&G made its announcement, a marketing consultant was promoting a study of detergent chemicals which concluded that prices of natural fats and oils will increase less rapidly than those of petroleum-based chemicals. Detergent-grade alcohols can be made from either material. Egypt's state-owned Nasr Petroleum announced during late summer that it plans to build a 40,000-ton/year linear alkylbenzene plant near Alexandria.

Earlier in the summer, *Chemical Business* published an article on the merits of and prospects for LAS (linear alkylbenzene sulfonate) and alcohol-based surfactants in detergents. Citing data from Shell Chemical Co., the article said LAS' market share had declined to 22% in 1980 from 26% in 1970, whereas the C12-15 alcohol-based surfactants had climbed to 25% from 18%. Sources at Conoco, a major LAS producer with a new alkylbenzene plant under construction, told *Chemical Business* that its benzene-derived product will be more economical than ethylene-derived alcohol surfactants.

The figures accompanying this article are from the proceedings of the 1977 AOCS World Conference on Soaps and Detergents and indicate how the trends were perceived then by Shell's D.E. Haupt in a talk on petrochemicals as raw materials for the industry (Figs. 1 and 2). At that same conference, Arthur Lysons of Unilever said that soapers could expect natural fats and oils prices to decline in real terms through 1990, noting that coconut oil and palm kernel oil are the primary raw materials. Lysons noted additional palm plantings would provide more palm kernel oil. "In addition, the late 1980s might also see coconut oil supplies increasing from the new higher yielding hybrid varieties of coconuts now available," Lysons added. "Yields are conservatively estimated to be double those of existing trees and as there have been suggestions of five-fold increases in yields, it does at least hint of increasing coconut oil supplies in the long term future."

The market study by Colin A. Houston and Associates contends petroleum-derived detergent alcohols have peaked and forecasts future expansion will be from natural fats and oils. Price increases for lauric oils through 1990 will be only half those for petrochemicals, a promotional announcement for the study said. Houston estimated current free world use of detergent alcohols at 1.5 billion pounds and predicted an increase to 2.25 billion pounds by 1990.

Houston said Philippine government promotion of coconut oil for fuel will help stabilize coconut oil prices. "Ester Fuels from Coconut Oil," an article in the *Philippine Journal of Coconut Studies* (Vol. V, No. 2, December 1980), notes that in potential fuel use "the high saturated

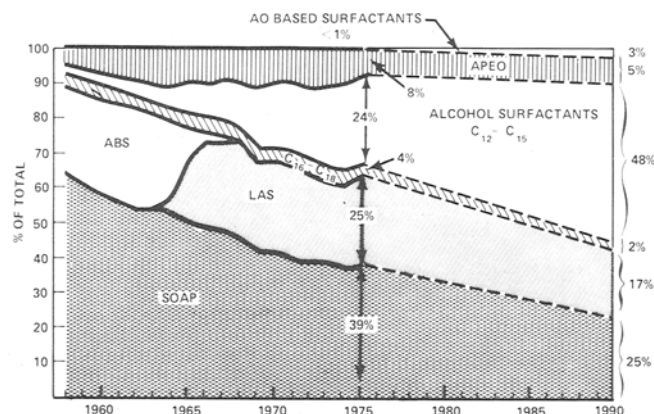


FIG. 1. Principal U.S. surfactant trends.

nature of coconut oil gives it a major advantage over the unsaturated and especially over the polyunsaturated oils: unsaturated leads to polymerization and condensation and breakdown of the chemical make-up and tends to form gums and undesirable substances."

Houston's study also said that "Lower washing temperatures worldwide coupled with the increasing use of less efficient builders such as zeolites require more alcohol-based surfactants and provide a sound end use base for expansion."

P&G's expansion of its alcohol plants is estimated to raise its capacity for those chemicals to about 170 million pounds/year, about double current capacity. The Cincinnati plant capacity was estimated at 25 million pounds/year and the Sacramento plant capacity at 60 million pounds/year in *Chemical Marketing Reporter*.

Eight of the last nine detergent alcohol plant expansions worldwide have been based on natural fats and oils as

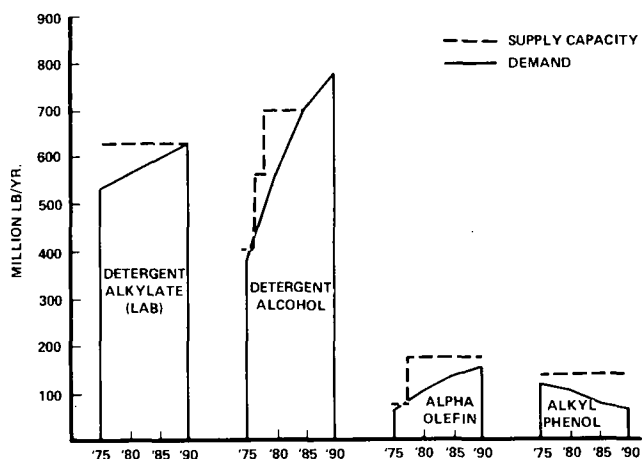


FIG. 2. Major hydrophobe supply/demand in U.S.

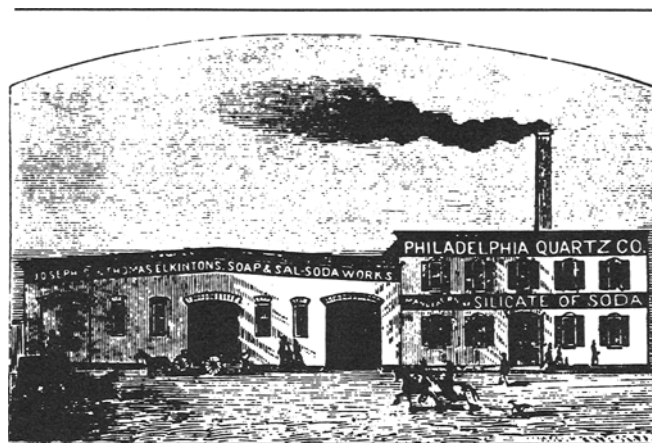
feedstocks, the P&G expansion statement said. P&G's proposals are included in that tally. P&G indicated its detergent alcohols will be used in lubricant additives and chemical intermediates as well as in consumer products.

*Chemical Business* said Conoco also expects increasing demand for natural-base detergent alcohols, but Shell officials are somewhat less enthusiastic because (a) most coconut oil comes from the Philippines, where political and economic changes may affect supply; and (b) natural-base products are not as uniform in composition as those from petrochemicals.

The study by Colin A. Houston & Associates is available at \$25,000 per copy from that firm at 1154 Old White Plains Road, Mamaroneck, NY 10543. □

## Primary emulsifier

Cyclo Chemicals has developed an acid-stable, self-emulsifying form of cosmetic-grade glyceryl monostearate designed to eliminate the need for auxiliary emulsifiers. Cyclochem GMS 21 is intended for use as a primary emulsifier and can be used over a wide range of pH values on both the acid and alkaline sides. Contact: Cyclo Chemicals Corp., 7500 NW 66th St., Miami, FL 33166. □



**The first Philadelphia Quartz Company factory for the manufacture of silicate of soda**

PQ Corporation, the chemical company that started as a soap and candle maker in Philadelphia in 1831, is celebrating its 150th birthday this year. Shown here is an engraving depicting its factory at 9th and Mifflin Streets in Philadelphia, which was the company's primary manufacturing facility from 1870-1905. PQ's new zeolite production facility in Kansas is scheduled to be completed during 1982. □

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## Meetings

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### Surfactant symposium announced

An International Symposium on Surfactants in Solution will be held June 27 through July 2, 1982, at the University of Lund in Lund, Sweden.

The event is the fourth biennial symposium in a series begun in 1976 in Albany, New York, with subsequent sessions held in Knoxville, Tennessee, and the third in Potsdam, East Germany.

Both theoretical and applied aspects of the behavior of surfactants in solution will be covered, including adsorption and aggregation behavior. The 13 general topics are: surfactant association: recent theoretical development; surfactant liquid crystals: phase diagrams and phase structure; surfactant association: laser light scattering investigations, magnetic resonance studies, photophysical methods, and kinetics and development; solubilization; micellar catalysis; applications of surfactants; microemulsions: phase diagrams, structure and applications; biological amphiphile systems; adsorption of surfactants; and biodegradation and health aspects of surfactants.

Persons wishing to submit papers or who seek further information about the meeting should write either of the symposium cochairmen: Dr. K.L. Mittal, Dept. 49Fm Bldg. 300-40E, IBM Corporation, Hopewell Junction, NY 12533 USA, or Prof. B. Lindman, University of Lund, Physical Chemistry 1, Chemical Center, PO Box 740, S 220 07 Lund 7, Sweden. □

### Symposium to be Nov. 10

"Recent Advances in Surfactant and Surface Chemistry" will be the theme for the 1981 fall symposium of the Northeast Section of the AOCs. The meeting is scheduled for Tuesday, Nov. 10, at the Carteret-Rahway Holiday Inn at Carteret, New Jersey.

Seven speakers have been announced by Warner Linfield, chairman for the meeting. Speakers and topics are:

Kevin W. Dillan, Union Carbide Corporation, "A Discussion of Factors Affecting Interfacial Tension and Oily Soil Removal in Nonionic Surfactant Solutions."

Henry Rosano, City University of New York, "Microemulsion and Cosolubilization."

Martin J. Schick and J. Villa, Diamond Shamrock Corp., "Surfactants in Coal Technology."

Raymond A. MacKay, Drexel University, "Physical-Chemical Studies in Microemulsions."

Kenneth C. Kipers, Pilot Chemical Co., "Development of a New Consumer Product, Liquid Hand Soap."

Anthony M. Schwartz, consultant, "Analysis and Control in Surfactant Technology."

Thomas Karalis, Witco Chemical Corp., "Half-Ester Sulfosuccinates."

Registration fee will be \$35 and will include a luncheon and coffee break. Luncheon speaker will be former AOCs President Frank C. Naughton. Registration will be from 9 to 9:30 a.m. □