

S&D productivity reviewed

The U.S. soap and detergent industry had an average 2.9% annual increase in productivity during the period 1958-1977, according to a report on "The Productivity Trend in the Soaps and Detergents Industry," published earlier this year in *Monthly Labor Review*.

The article attributed the increase to intensive capital investment in new machinery and equipment, improving production and packaging operations. Production increased 4.1% annually, while employee hours rose 1.2%, the report said.

From 1958 to 1965, average productivity growth was 1.9%. From 1965 to 1974, productivity increased at a much faster rate, averaging 4.3% each year. The trend was reversed in 1975, a recession year, when productivity fell 7.1%. By 1976, productivity growth had returned with a 3.0% gain. In 1977, productivity again showed a decrease, this time a slight 0.6% decline. Increased use of home laundry equipment and dishwashers, population growth, successful advertising and sales promotions have contributed to expansion from 1958-1977, the article said.

Growth has been influenced by the availability of a wide variety of products advertised to handle different types of cleaning problems. The range of products includes light-duty, mild hand-dishwashing products, all-purpose and heavy-duty laundry detergents, presoak products, automatic dishwashing detergents and laundry soaps, plus the classical bar of toilet soap which is available in an assortment of sizes, colors and scents, with or without additives such as cold creams and deodorants.

The industry also has grown in response to new fabrics developed by the textile industry, the article said. Because

oily soils are more difficult to remove from synthetic fibers, which were increasingly used in clothing during this period, new detergent products were formulated. Products were developed that retained their cleaning abilities at lower temperatures, recommended to prevent the setting of oily soils in some synthetics.

Most soap and detergent production takes place in large plants. Of the 642 plants in operation in 1972, fewer than 60 had 100 or more employees and produced 80% of the total value of shipments. About 440 plants employed fewer than 20 persons.

About half of all production originates in the north central region of the U.S. because of a former trend of locating near the source of principal raw materials. With increased use of detergents, this factor is less important and sites are increasingly chosen for their nearness to distribution centers.

Capital expenditures in the soaps and detergents industry, \$4,191 per employee, are higher than the manufacturing average, \$2,300 per employee. As in other manufacturing segments, in the soaps and detergents industry, about three-fourths of capital expenditures have been for new machinery and equipment.

Productivity forecasts for the soaps and detergents industry continue to be favorable. Demand for all products should be up with an increased output of dishwasher detergents as more dishwashers are purchased. The number of washing machines in U.S. households also is expected to increase, resulting in additional growth in the soaps and detergents industry. □

Calendar

AOCS NATIONAL MEETINGS

Annual Meeting, 1981: May 17-21, Fairmont Hotel, New Orleans, LA.

Annual Meeting, 1982: May 2-6, Sheraton Centre, Toronto, Ontario, Canada.

Annual Meeting, 1983: May 8-12, Chicago Marriott, Chicago, IL.

AOCS SHORT COURSES

AOCS Short Course on Soaps and Detergents, Sept. 14-17, 1980, Hershey, PA.

1980

Society of Cosmetic Chemists Annual Seminar, May 15-16, 1980, Hyatt Regency, San Francisco, CA. Contact: Susan W. Cole, SCC, Suite 1701, 1995 Broadway, New York, NY 10023.

Technical Exhibition of the Oil and Colour Chemists Association, May 13-15, 1980, Cunard International Hotel, London, England. Contact: British Information Services, 845 Third Ave., New York, NY 10022.

"Colloids and Surfaces," short course sponsored by Carnegie-Mellon University, May 19-23, 1980, Carnegie-Mellon University in Pittsburgh, PA. Contact: Carolyn B. Simon, Carnegie-Mellon University, Post College Professional Education, 405 MMCH, Pittsburgh, PA 15213.

"Principles of Color Technology," June 2-6 and June 9-13, 1980, sponsored by Rensselaer Color Measurement Laboratory, Rensse-

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Calendar

- laer Polytechnic Institute, Troy, NY. Contact: Office of Continuing Studies, Rensselaer Polytechnic Institute, Troy, NY 12181.
- Society of Cosmetic Chemists—COSA Annual Educational Conference, June 8-11, 1980, cosponsored by SCC and Arnold & Marie Schwartz College of Pharmacy & Health Sciences of Long Island University, Henry Chauncey Conference Center, Princeton, NJ. Contact: Society of Cosmetic Chemists, 1995 Broadway, Suite 1701, New York, NY 10023.
- International Exhibition for the Pharmaceutical, Cosmetics, Toiletry, Perfumery and Allied Industries, June 10-13, Metropole Exhibition Centre, Brighton, England. Contact: British Information Services, 845 Third Ave., New York, NY 10022.
- 11th Congress of International Federation of Societies of Cosmetic Chemists, Sept. 23-27, 1980, Venice, Italy. Contact: IFSCC, P. Salzedo, 56 Kingsway, London WC2B 6DX, England.
- 1980 Conference on International Cosmetic Regulations, Sept. 27, 1980, Venice, Italy, sponsored by the International Federation of Societies

- of Cosmetic Chemists.
- Symposium: "Sensory Evaluation of Product Performance," Oct. 20-22, 1980, sponsored by the Society of Cosmetic Chemists, Hilton Hotel, Stratford-upon-Avon, England. Contact: M. Callingham, 56 Kingsway, London WC2B 6DX, England.
- Eighth Residential Postgraduate Course in Cosmetic Science, Nov. 9-15, 1980, sponsored by the Society of Cosmetic Scientists, Palace Court Hotel, Bournemouth, England. Contact: M. Callingham, 56 Kingsway, London WC2B 6DX, England.
- Society of Cosmetic Chemists Annual Scientific Meeting, Dec. 11-12, New York City. Contact: Program Co-chairmen, Robert L. Goldemberg or Harvey S. Schnur, c/o Society of Cosmetic Chemists, 1995 Broadway, Suite 1701, New York, NY 10023.
- 1981**
- The Soap and Detergent Association Industry Convention, Jan. 28-Feb. 1, 1981, Boca Raton Hotel & Club, Boca Raton, FL.
- "Color Technology for Management," June 16-17, 1980, sponsored by Rensselaer Color Measurement Laboratory, Rensselaer Polytechnic Institute, Troy, NY. Contact: Of-

- fice of Continuing Studies, Rensselaer Polytechnic Institute, Troy, NY 12181.
- "Advances in Color Technology," June 23-27, 1980, sponsored by Rensselaer Color Measurement Laboratory, Rensselaer Polytechnic Institute, Troy, NY. Contact: Office of Continuing Studies, Rensselaer Polytechnic Institute, Troy, NY 12181.
- Fourth International Conference on Surface and Colloid Science, July 5-10, 1981, Jerusalem, Israel. Contact: A.S. Kertes, Institute of Chemistry, The Hebrew University, Jerusalem, Israel.

1982

- The Soap and Detergent Association Industry Convention, Jan. 27-31, 1982, Boca Raton Hotel & Club, Boca Raton, FL.

1983

- The Soap and Detergent Association Industry Convention, Jan. 26-30, 1983, Boca Raton Hotel & Club, Boca Raton, FL.

1984

- The Soap and Detergent Association Industry Convention, Jan. 1984, Boca Raton Hotel & Club, Boca Raton, FL. □

Abstracts

Soaps, detergents and cosmetics

THE EFFECT OF ORGANIC ADDITIVES ON THE HYDROPHILIC-LIPOPILIC BALANCE OF NONIONIC SURFACTANTS. L. Marzal. *Tenside Deterg.* 16(6), 303-5 (1979). The effects of water-soluble additives: formamide derivatives, acetone, dioxane, urea and urethane on the cloud points and phenol index values were compared. The results were interpreted as the change of the effective hydrophilelipophile balance of polyoxyethylenated nonionic surfactants.

PHOSPHATE ACTIVATION IN CATIONIC FLOTATION OF CELESTITE. S.F. Estefan. *Tenside Deterg.* 16(6), 306-9 (1979). Adsorption isotherms of phosphate anions and cetyl pyridinium bromide cations onto celestite were plotted at controlled ionic strength, pH, and temperature. Flotation tests were carried out in a modified Hallimond tube for a fixed flotation time.

THE REACTION OF FATTYACIDS AND THEIR DERIVATIVES WITH ETHYLENE OXIDE V. A KINETIC STUDY OF THE SECOND REACTION STAGE OF THE REACTION OF STEARIC ACID WITH ETHYLENE OXIDE. M. Bares, et al. *Tenside Deterg.* 16(5), 308-15 (1979). Reported were the results of an experimental investigation of the reaction between stearic acid and ethylene oxide. Kinetic relationships of the polyaddition reaction in the second reaction stage expressed through the formation of a diadduct were mathematically evaluated.

THE PURITY OF AQUEOUS SURFACTANT SOLUTIONS AND THE DYNAMIC SURFACE TENSION BEHAVIOR. K. Lunkenheimer and R. Miller. *Tenside Deterg.* 16(6), 312-6 (1979). The time dependence of the surface tension of various surfactant solutions (n - octanoic acid, Na-dodecylsulfate, Na-dodecanesulfonate,

Na-undecanesulfonate) was measured in the case of adsorption and desorption. The original solutions of the surfactants used show an own, apparent surface tension equilibrium each for the compressed and the expanded state.

PHOSPHORIC ACID ESTERS IN LIQUID AND POWDERED FORM. Washing and cleansing agents. G. Sorbe. *Seifen, Ole, Fette, Wachs.* 105(18), 545-6 (1979). Preparation and properties.

ACTION OF SURFACE-ACTIVE SUBSTANCES ON BIOLOGICAL MEMBRANES. V. HEMOLYTIC, LYTIC AND MEMBRANE-PERTURBING EFFECTS OF N-LAUROYL DERIVATIVES OF AMINO ACIDS WITH ALIPHATIC SIDE CHAINS. B. Zaslavsky, et al. *Colloid Polym. Sci.* 257(9), 953-8 (1979). The hemolytic action of a number of N-lauroyl derivatives of amino acids with aliphatic side chains on human red cells has been examined.

MECHANISM OF DEMULSIFICATION OF OIL-IN-WATER EMULSION IN THE CENTRIFUGE. A.U. Hahn and K.L. Mittal. *Colloid Polym. Sci.* 257(9), 959-67 (1979). The mechanism of demulsification of 30% Nujol-70% water emulsions with various surfactants has been studied using a Coulter Counter to monitor the particle size at various depths in the cream layer as a function of time of centrifugation. It was found that the cream layer is stratified with varying sizes of oil globules along the centrifuge cell.

THE CONTACT ANGLES OF SURFACTANT SOLUTION ON THE QUARTZ SURFACE. Z.M. Zorin et al. *Colloid Polym. Sci.* 257(9), 968-72 (1979). The contact angles formed on the quartz surface by 0.1 N NaCl aqueous solution at different pH were measured. The effect of surfactants such as anion-active sodium dodecyl sulfate and cation-active cetyltrimethylammonium bromide was investigated.