

Alkyl ethoxylates have the general structure $RO(CH_2CH_2O)_nH$. When used in laundry products, Lynn said, the R contains from 9 to 18 carbon atoms, usually 12 to 16. Since a single ethylene oxide (EO) group does not provide sufficient solubility for use in aqueous laundering, an average of 5 to 18 EO groups is present, usually 6.5 to 13, he said.

Because the hydrophilic chain is neutral, nonionic surfactants are not inactivated by calcium as is the case with linear alkylbenzene sulfonates (LAS) or soaps. According to Lynn, detergency of nonionic surfactants is essentially hardness-insensitive. Nonionic surfactants are often characterized in terms of their hydrophile-lipophile balance (HLB) number. At low HLB, the nonionic is essentially insoluble; detergency increases with HLB until the surfactant becomes too soluble and detergency declines.

According to Lynn, the most widespread use of nonionics occurs in mixed surfactant systems. Such mixed active systems help protect the anionic against precipitation as calcium salts and also provide better performance with a wider variety of soils.

Lynn said nonionics are naturally suitable for use in liquid laundry detergents because they are miscible with water over a wide concentration range. "The ability to modify both the hydrophilic and hydrophobic parts of the nonionic molecule will frequently permit the formulation to be 'fine tuned' for optimum detergency and stability," he noted, adding that their neutrality is also useful when formulating detergents that provide softening in the wash. Because anionic surfactants and cationic softeners interact to reduce detergency by the anionic and softening by the cationic, one approach has been to use a nonionic surfactant as the cleaning active in combination with a cationic for softening.

When used alone or in mixed active systems, nonionics generally have low suds profiles. Lynn noted that this is an advantage in Europe, where front loading machines predominate. In the U.S., consumers have preferred a higher suds profile

for their top-loading washers. However, he added, the U.S. market appears to be moving in the direction of a lower suds profile.

Lynn noted that over the past several years, ethoxylation techniques have been developed, making peaked ethoxylates commercially available to detergent manufacturers. It has been suggested that these have a number of potential advantages over conventionally prepared ethoxylates. These include improved bulk handling characteristics, superior low temperature stability in heavy duty liquid detergents, improved odor, superior spray-drying efficiency and improved soil release of oily substances from synthetic fabrics when used in conjunction with soil release polymers such as methyl celluloses.

Toilet soap use in India

A report on toilet soap manufacture in India by K.S. Holla and R.R. Press of Tata Oil Mills Co. Ltd. notes that toilet soap consumption in India is expected to rise about 9.5% a year, to 374,000 metric tons (MT) by 1990, 580,000 MT by 1995 and 914,000 MT by the year 2000.

This, the authors add, will require expanding manufacturing capacity to approximately 735,000 MT by 1995 and 1,150,000 MT by the year 2000.

According to the report presented at a toilet soaps seminar conducted by the Oil Technologists' Association of India (Northern Zone) April 20, 1986, the largest growth potential is in rural markets.

The main raw native materials used in India for soap manufacturing, the report said, are rice bran oil, hardened rice bran oils and oils from mowrah, sal, neem, karanja and khakhan. Imported sources used include coconut and palm kernel oils. India currently has a total ban on the use of animal tallow. Also, groundnut is not permitted for soap manufacturing; it is solely used for edible purposes.

In urban sales of premium toilet soaps in 1984, the Liril brand

manufactured by Hindustan Lever had sales of 3,500 MT, representing 24.4% of the market share. Mysore Sandal made by Karnataka Soaps sold 1,588 MT, or 11% of the market share, and Shikakai manufactured by Swastik sold 1,500 MT, representing 10.6% of the market. For the same year, Hindustan Lever produced the three top brands of popular toilet soaps—Lifebuoy, with sales of 36,000 MT and a 38.5% market share; Lux, with sales of 17,600 MT for an 18.6% market share; and Rexona, with 11,300 MT for an 11.9% market share.

Philippine task force

The Philippine Trade and Industry Minister, Jose Concepcion Jr., has appointed a task force on soap and detergent feedstock to study the impact of using either alkylbenzene or coco fatty alcohol in domestic detergent production.

According to the United Coconut Association of the Philippines, LMG Chemicals has been promoting the use of the former, while United Coconut Chemicals (Unichem) supplies the latter. Both companies are represented on the task force, along with the Soap and Detergent Association of the Philippines (SDAP), the National Pollution Control Commission, the Board of Investments, the Philippine Coconut Authority and the Philippine Chamber of Commerce and Industry's committee on industry.

S&D committee

ASTM's Committee D-12 on Soaps and Other Detergents will hold its annual standards development meetings Sept. 16-18, 1986, in New York, New York. The meetings will mark the 50th anniversary of the committee.

Arno Cahn of Arno Cahn Consulting Services and Luther Meyers, president of Test Fabrics Inc., will speak at luncheons held Wednesday, Sept. 17, and Thursday, Sept. 18, respectively.

The executive subcommittee will meet at The Soap and Detergent Association, Park Avenue South, on Tuesday, Sept. 16. On Sept. 17 and 18, task groups, other subcommittees and Committee D-12 will meet at the Union League Club on East 37th St.

For more information, contact Janet Bove, ASTM, telephone 215-299-5517.

Household cleaners

Sales of household cleaning materials in France and Italy will surpass those in West Germany by 1991, while sales in the United Kingdom will continue to trail all three, according to a report by Frost & Sullivan.

The two-volume, 403-page report, "Household Cleaning Materials in Europe," by the New York and London-based market research firm predicts sales in the four countries will represent a \$5.1 billion market by 1991.

The study says that more than 5.4 million tons of product will sell for nearly \$4.8 billion in 1986, with the average per capita consumption of soap, detergents and cleaning materials totaling more than 45 pounds. The marketing firm noted that West Germany has high, stable consumption, while Italy shows growth potential.

The study shows laundry detergents and fabric softeners represent nearly 60% of the market value and predicts that detergent sales will continue to grow while fabric softener sales will decline both in value and tonnage. Hand dishwashing products, roughly 12% of the market, have shown gains of 10% to 12% annually. Household soap, window and glass cleaners, scouring products and lavatory cleaners are also discussed. Specific products are examined by country, with distribution channels, promotional environment, and manufacturer market shares detailed.

The report shows West Germany as the market leader on a tonnage basis. However, because it is quite price competitive, West Germany will be outstripped by France on a value basis by 1991, the study predicts.

Sales in France will represent 27% of the market in value by 1991, the study says. Italy's share of the market, meanwhile, is forecast to reach 28% in value by 1991, while the United Kingdom's share will drop to 20%.

Supplier analysis shows Henkel to lead overall in West Germany, ahead of Procter & Gamble and Lever Brothers. Lever holds the edge over Procter & Gamble in the United Kingdom, but their position is reversed in some portions of the French market.

For more information, contact Frost & Sullivan Inc., 106 Fulton St., New York, NY 10038, or Frost & Sullivan Ltd., 104-112 Marylebone Ln., London W1M 5FU, United Kingdom.

ICI reorganizes

Imperial Chemical Industries PLC, London, England, reorganized its U.S. businesses effective June 1. Under the reorganization, all of ICI's wholly owned businesses in the U.S. have been brought together under ICI Americas Inc.

Representing sales over \$2 billion and employing over 12,000 persons, the businesses have been divided into eight operating groups under ICI Americas Inc.: ICI Advanced Materials Group, ICI Agricultural Products Group, ICI Electronics Group, ICI Films Group, ICI General Products Group, ICI Pharmaceuticals Group, ICI Polyurethanes Group and ICI Specialty Chemicals Group.

According to the company, the changes will provide a stronger organization for future growth and create a more unified identity for the company's overall business in the U.S. Harry Corless, chairman of the board of directors for ICI Americas, said, "ICI's business in the U.S. has reached an important milestone. This is a stepwise change in our U.S. organization and positions us for future growth in major markets. Currently, ICI's U.S. businesses account for greater than 15% of ICI's worldwide business. By the early 1990s, we expect to increase our U.S. business to about 25%."

News briefs



Veronica Koch has joined Amerchol Corp. as a research chemist at the company's Edison, New Jersey, facilities. In her new position, Koch, a recent graduate of Southampton College of Long Island University, will be synthesizing and isolating new products including surfactants, hair conditioners and skin moisturizers.

Stepan Co. has hired Mark J. Talaber as a surfactant sales representative for the southwest U.S. region, based in Dallas, Texas. T. Anthony Thompson, formerly sales representative for the Houston, Texas, area, has transferred to the position of surfactant sales representative for the northeastern U.S. region.

The British Society of Cosmetic Chemists has installed P.J. Cooney as president for 1986/87. T.G. Harrison is vice-president. The society offices are at Delaport Hours, 57 Guilford St., Luton, Beds. LU1 2NL, United Kingdom.

A.E. Staley Manufacturing Co. announced it was forming a subsidiary, Horizon Chemical, to make a new line of chemicals derived from the starch portion of corn. The division will employ more than 100 workers at facilities in Decatur, Illinois, and Van Buren, Arkansas, to research, produce and market the new chemical products. The surfactants, methyl glucosides and reactive celluloses made by Horizon are designed to make detergents clean better, urethane foams smoke less in fires and dyes transfer to fabrics easier, according to the company.

Sugar Beets Products Co., a manu-