

Certainly a new era—both of washing machines and detergents—has started.

4.3 Textile Trends Worldwide



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Textile trends and the resultant effects on the textile and detergent industries will be discussed. Changes in the usage of different fibers and apparel and projections to the future are presented as well as the factors affecting these changes. Worldwide textile and apparel trade has long been regulated to avoid disruption of markets and to provide orderly growth. However, in the past five years textile and apparel imports to the United States have doubled, causing widespread market disruption and the loss of 300,000 jobs. The U.S. cotton industry has been damaged as these imports now contain more than three million bales of foreign-grown cotton. The origins of this problem and some possible solutions are discussed, concluding with some observations about the fallacies of free trade and comparative advantage.

Session V—Formulation Technology: Surfactants in Laundry Products

5.1 European Laundry Powders



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Many changes have taken place in the European fabrics washing market during the past decade as detergent manufacturers have attempted to respond (a) to the growing consumer need for greater convenience and efficiency from wash products and (b) to the demands from local and national authorities for products that they perceive as being more acceptable in the environment. Modern laundry detergents are more effective at low wash temperatures, are better designed for use in drum machines than hitherto and, in some cases, offer benefits other than those derived solely from improved detergency. Greater diversification of product form also is evident as consumers are now offered a choice of powders, liquids or novel wash additives. While the introduction of multi-functional products has increased the demand for novel

surfactants, improvements in wash efficiency at low temperatures or in compatibility with machines have been achieved largely by optimization of existing technology. In many cases, modifications to the active mix have been of secondary importance to the exploitation of advanced bleaches and enzymes. For the future, however, it is argued that the feasibility of formulating products with significantly improved efficiency at low wash temperatures will require novel active systems that are considerably more effective than those based on current technology. This, together with continued interest in alternative wash benefits, will promote a probable trend toward greater complexity in the active mix or the exploitation of materials that represent a radical departure from existing molecular architecture.

5.2 North American Laundry Powders: Surfactant Choice—Marketplace Trends and Formulation Response



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Future choices of surfactant systems for laundry powders will be influenced by three key forces: (a) significant growth in liquid and other alternate product forms to meet emerging performance and convenience requirements; (b) consumer desire for single-step, multibenefit products that offer effective performance across usage conditions, particularly water temperature; and (c) widespread use of performance additives. Four workhorse materials—LAS, nonionic sulfates, nonionics and quaternaries—will remain the surfactants of choice into the future. New combinations for these surfactants will be used to enhance the utility for many functional additives: softeners, enzymes, bleaches and fragrance. Surfactant choice will be a function of the value equation, assessing the performance benefits of surfactants, any marketplace limitations to their widespread utility, and cost.

5.3 Laundry Detergents in the Far East



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Washing of clothes in the Far East seems to occupy a more important part of household affairs than in the cooler areas of the world because of the humid and sultry weather. Consequently, various types of detergents have been