

Abstracts

economic, energy, performance and social factors have affected the detergent manufacturers' choice of builder and builder level. Perhaps the most significant and restrictive among these has been the environmental aspect of builder material selection and use. Response to some of these factors has contributed to significant trends in the detergent market; for example, the increasing popularity of liquid products in areas of the United States where legislation has banned the use of phosphates in laundry detergent products. This shift in product form has further restricted the use of builder products in detergents as the requirements for a builder become more difficult. Now in addition to providing hardness ion control and contributing to other aspects of detergent performance, the builder must be both soluble and stable in liquid formulations. At the same time it must not contain phosphorus. Frequently the manufacturer is forced to trade off performance contributions to meet these more stringent requirements. The impact of these factors on the builder market will be discussed and related to builder selection during the past 20-year period, with emphasis on the current situation. While the principal thrust of this paper is on builder trends for the U.S. laundry detergent market, mention will also be made of the Canadian market and other detergent and cleaner markets in the United States.

Session VIII: Formulation Technology— Special Functions

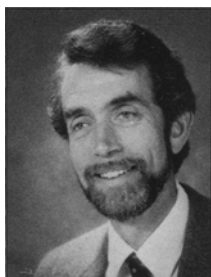
8.0 Special Detergent Functions: An Overview



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A number of special ingredients added to detergents have profound effects on the laundering end-result or consumer preference. These include fabric conditioners, bleaches, enzymes, fluorescers and fragrances. Out of proportion to their levels in detergent products, these special ingredients can dictate consumer satisfaction and a product's success or failure in the competitive marketplace. Five world experts are presenting their views on these special detergent ingredients.

8.1 The Use of Cationic Fabric Softeners in Laundry Detergents



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The history of fabric softening compositions in the United States is marked by innovations that have increasingly brought more convenience to the consumer. The combination of a laundry detergent and a fabric softener provides the ultimate in convenience. In the U.S. marketplace, convenience has become more important in recent years, as the people who do the laundry are typically working at another job outside the home. The wide range of cationic fabric softener actives now available makes it possible to formulate detergent/softener combination products that both clean and soften clothing. The use and number of these products has increased steadily during the past several years. At the present time they seem to be well established as viable products. Softener/detergent combinations can be formulated as liquids, powders and even as detergent packets that release fabric softener after the empty packet is transferred, with the clean clothes, to the automatic clothes dryer. Each type of product requires a different chemical type of softener. Liquid "softergents" are usually formulated with cationics that contain two unsaturated alkyl chains for maximum solubility. If anionic surfactants are used in liquid formulations the quaternary usually contains only one fatty chain. Powdered softener/detergent products are very often formulated with a higher melting quaternary, such as distearyl dimethyl ammonium chloride, that is supplied in a powdered form. With this wide variety of formulation

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