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*File-Surfactants
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Interoffice Communication

To Distribution

From O. C. Kerfoot

Date September 10, 1981

Subject A. D. LITTLE REPORT ON SURFACTANT SAFETY TO THE SOAP AND DETERGENT ASSOCIATION

Earlier this year, Arthur D. Little Inc. published a supplemental report updating their 1977 report on "Human Safety and Environmental Aspects of Major Surfactants." This covers information on surfactant safety published or made available since 1977. For your information I have reprinted, below, the summary statements from the different sections of the report regarding each active ingredient:

1. LAS (Linear Alkylbenzene Sulfonates)

"LAS, therefore, remain acceptable with respect to both human health and environmental safety for consumer and industrial use."

2. AS (Alcohol Sulfates)

"The minimal amounts of AS in detergent formulations taken with their facile biodegradation and generally low order of toxicity indicates that the use of alkyl sulfates does not pose a significant hazard to human health."

3. AE (Alcohol Ethoxylates)

"These data suggest that use of AE as a component of detergent formulations poses no threat to environmental quality or to human safety."

4. AES (Alcohol Ethoxy Sulfates)

"Recently, trace levels of 1,4-dioxane, an animal carcinogen, have been detected in AES concentrates. Since there are no data which indicate that commercial AES are mutagenic, teratogenic, or carcinogenic, and in that substantial dilutions of these concentrates are made during formulation of commercial products, and once again at the time of use, consumers do not appear to be at risk from use of these products."

5. APE (Alkylphenol Ethoxylates)

"From currently available information, it appears that the use of APE does not pose a hazard to the environment or to human health. Some areas of uncertainty, however, such as findings of cardiotoxicity information, could be addressed by further investigation."

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6. AOS (Alpha-Olefin Sulfonates)

"Although data on the reproductive effects of AOS and by-products are limited, all of the human safety information presently available suggests that normal use levels of AOS do not pose either an environmental hazard or a significant risk to human health."

7. SAS (Secondary Alkane Sulfonates)

"Human safety and aquatic toxicity data are scant and do not allow any general conclusions to be drawn in terms of environmental acceptability or human safety of SAS surfactants. The limited data available, however, suggest no significant hazards to either man or the environment."

The bottom line continues to be that, based on available information, none of these surfactants appear to pose a hazard. In some cases, however, such as APE, AOS, and SAS, further investigations may be warranted.

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