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**The ADBAC/DDAC Task Force\* Comments  
on the latest publication by Melin et al. in *Reproductive Toxicology***

The most recent study by Melin et al, in which mice were dosed with excessive quantities of concentrated quaternary ammonium compounds (QACs) should be viewed with grave doubt concerning the validity of the study methods and results. The study itself repeats improper research methods seen in the authors' previous work, including significant shortcomings in study design and data analysis and the failure to follow Good Laboratory Practices (GLP).

The authors appear to have ignored the difference between overt acute toxicity and a relevant compound-related effect on mammalian functions, including fertility. Lastly, the study conclusions ignore "real world" experience and scientific scrutiny over more than 30 years demonstrating the safety of QACs which are used safely every day in products including household disinfectants.

Comprehensive, robust toxicology datasets support the Environmental Protection Agency's (EPA) registration of QAC-based formulation for intended uses. Reproductive studies are included. The GLP-compliant data show no effects in pregnant animals and their offspring in studies conducted at dose levels relevant to human exposures.

Humans are not exposed in any way to the level of QACs fed to the female mice in this study. To achieve a human dose comparable to the study, **a 152-lb. person would have to drink 1.5 gallons of disinfectant daily for eight weeks.** Humans are also not exposed to such levels through food-contact surfaces disinfected with QACs. Other exposure routes do not pose an exposure issue, since QACs are not absorbed well through the skin, and inhalation is unlikely, because QACs, as diluted or as ready-to-use products, are not volatile.

EPA has stated that that ADBAC, one of the active ingredients in the concentrated product used in this study, does not pose unacceptable reproductive risks based on "available, reliable, quantitative animal data to characterize hazards associated with uses of ADBAC including reproductive function and effects on the developing mammalian fetus." EPA further states "...the endpoints used in risk assessment are

protective of infants and children.” The EPA makes similar statements with regard to DDAC, the other QAC in the formulation used in this study, in other agency documents.

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\*The ADBAC/DDAC Task Force operates under the auspices of the Consumer Specialty Product Association’s Research & Regulatory Management Council. It is supported by the world’s leading producers of quaternary ammonium compounds used for formulating cleaning, sanitizing and disinfection products for hard surfaces. It develops health-related and safety data for regulatory agencies and registrations in the U.S. and elsewhere.