

MEMORANDUM

DATE: June 6, 2016

TO: Dr. Allan Hirsch, Chief Deputy Director
OEHHA

FROM: Dr. Jason Bush
CIC member
Associate Professor
California State University, Fresno

SUBJECT: PEER REVIEW OF PROPOSED NO SIGNIFICANT RISK LEVEL FOR
STYRENE

I have read the information sent to committee members and reviewed the materials. The rationale for the proposed NSRL level for styrene seems logical and consistent with available experimental animal studies specific to weight of evidence of carcinogenicity.

I do realize that standard procedure has been followed by OEHHA for the derivation of the NSRL calculation. The one query I would raise is the use of the general population assumption for bodyweight as 70 kg (man) in NSRL calculations according to Section 25703(a)(8) for Quantitative Risk Assessment. In the recent comprehensive review by Gelbke *et al.* (2015)* and references within, the authors evaluated the evidence for elevated serum levels of prolactin found in exposed GFR workers. They rigorously conclude that no plausible MoA could be attributed to styrene while several flaws/conflicting results were identified in the relevant studies. However, given the available data and the suggestion of possible neuroendocrine influence, I wonder whether the NSRL calculation might be more appropriately based on a subpopulation. Specifically, risk to woman. If the 58 kg body weight were to be used, the NSRL would then be slightly lowered to ~22 µg/day from the proposed 27 µg/day.

I offer this alternative merely as a point of reflection. Feel free to contact me if further clarification is required (jbush@csufresno.edu; 559.278.2068).

*Gelbke HP, Banton M, Leibold E, Pemberton M, Samson SL. A critical review finds styrene lacks direct endocrine disruptor activity. *Crit Rev Toxicol.* 2015;45(9):727-64.

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