The Vinyl Institute

A Division of The Society of The Plastics Industry, Inc.

May 15, 1997

Dr. Hasmukh Shah
Chemical Manufacturers Association
1300 Wilson Blvd.
Arlington, VA 22209

Dear Has:

Attached is a reference to the 1996 publication on understanding the risk of vinyl chloride, benzene and butadiene. Please advise the thought of the Vinyl Chloride Panel regarding this article, as I know this has been of continued interest to the Panel members.

Sincerely,

Frank E. Borrelli

Frank E. Borrelli
Technical Director

FEB:kc
attachment

c: R. Burnett
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and selected candidates for future replacements. The paper also reviews the widely [illegible]

(from BIOL, 1997, V 77, N 1, P 59 (97-0069, M 1170))

HUMAN EXPOSURE - VC, BZ - UNDERESTIMATING RISK FOR THREE IMPORTANT HUMAN CARCINOGENS: VINYL CHLORIDE, BENZENE, AND BUTADIENE

UNIV-OF-TEXAS (order #671981)
LEGATOR-MS
JOURNAL OF CLEAN TECHNOLOGY AND ENVIRONMENTAL SCIENCES (US) NOT in Collection
(Language : EN)
1996 V 5, N 3, P 199-205, Refs

A review and discussion with several refs. Contrary to frequently expressed opinions, the extrapolation from high-dose animal expts. to low-dose chronic human exposure may underestimate rather than overestimate the true risk of exposure to carcinogens. Benzene, vinyl chloride, and butadiene are examples where animal risk extrapolation may significantly underestimate the actual risk. Since a variety of different enzymes or metabolic systems are involved in bioactivation reactions, which include both phase 1 and phase 2 reactions, any concn. dependent alteration in either activation or detoxification would have a significant effect on mutation and cancer. Limited evidence would indicate that proportionately less active metabolite is formed at high concn. where phase 2 enzymes predominate, while at lower concns. pathways leading to active metabolites are favored. The overall effect would lead to an underestimate of risk from high-dose animal expts. when extrapolating to low-level, chronic human exposure. Data with three potent carcinogens, benzene, vinyl chloride, and butadiene indicate the possible error in risk estn. from animal cancer bioassay studies. This may be a general pattern with chems. that require enzymic conversion to active metabolites. The public health significance of this underestimation could be considerable and underscore the urgency of reexamg. the present risk procedures. New procedures, including biomarkers of effect such as chromosome painting, DNA repair evaluation, and somatic cell mutation studies can be applied to monitoring individuals exposed to toxic substances. Known animal carcinogens as delineated by the International Agency for Research on Cancer, where there is a distinct possibility of underestimation of risk based on animal studies, should be evaluated by multiple biomarker studies in exposed populations.

(from CHABA 126-85674 CA COPYRIGHT 1997 CAS)

SODIUM BICARBONATE AND POTASSIUM BICARBONATE : TOLERANCE EXEMPTIONS

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