



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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MEMORANDUM

OFFICE OF
PESTICIDES AND TOXIC
SUBSTANCES

SUBJECT: Metam Sodium - Notification of Adverse Effects
Under FIFRA Section 6(a)2

FROM: Yiannakis M. Ioannou, Ph.D., Section Head
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THRU: Marcia van Gemert, Ph.D., Branch Chief
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Registrant: Metam Sodium Task Force

Action Requested: Review information relating to potential immunotoxic adverse effects of dithiocarbamates and of metam sodium (sodium methyldithiocarbamate) in particular.

Recommendations: On behalf of the Metam Sodium Task Force, Buckman Laboratories International have submitted to the Agency two abstracts which were obtained from a regional meeting of the society of Toxicology (at Mississippi State University) evaluating the immunotoxic potential of dithiocarbamates including metam sodium.

In the first abstract titled "Investigation of In Vitro and In Vivo Immunotoxic Effects of Dithiocarbamates in B6C3F1 Female Mice," metam sodium was administered orally to female mice for 7 days at dose levels of 150, 225 and 300 mg/kg/day. The results indicated that metam sodium at all dose levels tested caused a significant decrease in percent lysis of Yac cells indicating suppression of Natural Killer Cell activity and also resulted in significant decrease in thymus weight/thymus cell numbers.



In the second abstract titled "An Investigation of the Immunotoxic Effects of Sodium Methyl-dithiocarbamate in B6C3F1 Female Mice" metam sodium was administered dermally for 7 days to female mice at dose levels of 200 and 300 mg/kg/day as a solution of the active ingredient or as a commercial preparation at 300 mg/kg/day for 2 days. Primary effects observed with the 300 mg/kg/day dose group over a 7-day period, included: significant decrease in thymic weight, significant decrease in subpopulations of thymocytes, and in polymorphonuclear neutrophils and a significant increase in lymphocytes. the commercial preparation of metam sodium had similar but more potent effects.

Based on the summary data provided in the two abstracts, it appears that metam sodium (and other dithiocarbamates) is potentially an immunotoxic agent. However, Toxicology Branch II cannot make final conclusions as to the immunotoxicity of metam sodium until receipt and review of the two immunotoxicity studies.