6-4-82

CASWELL FILE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MEMORANDUM JUN - 4 1982

TO: Henry Jacoby (21)
Registration Division (TS-767)

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

THRU: Orville E. Paynter, Chief
Toxicology Branch
Hazard Evaluation Division (TS-769)

SUBJECT: Request for New Use; Vorlex on Utility Poles,
Reg. No. 2139-55 CASWELL Nos.: 175 & 573

Submitted By: Nor-Am Agricultural Products
350 West Shuman Blvd.
Naperville, Illinois 60566

Action Requested:

To amend the registration of Vorlex soil fumigant to allow the treatment of utility poles to control internal decay and insects.

Background Information:

Very little toxicology data has been submitted for Vorlex, per se, however data submitted for two other closely related fumigants has been reviewed by this branch. The data on the related fumigants suggest possible adverse toxicological effects (see Discussion, below) of Vorlex which merit consideration relative to this requested use.

The chemical compositions of Vorlex and two other related fumigants are as follows (Farm Chemicals Handbook, 1981):

Vorlex	D-D	Telone II
1,2-dichloropropane, 1,3-dichloropropene and other related chlorinated C_3 compounds 80%	1,2-dichloropropane, 1,3-dichloropropene, 3,3-dichloropropene, 2,3-dichloropropene, and other chlorinated hydrocarbons 100	1,3-dichloropropene 92% Other chlorinated hydrocarbons 8%
methyl isothiocyanate 20%		

Recommendation:

Toxicology Branch has determined that available data do not support the new use. Prior to assessment of human hazards resulting from the requested use, the following data is needed:

1) An exposure assessment
2) A teratology study of Vorlex
3) Acute dermal and oral toxicity of Vorlex
4) Skin sensitization of Vorlex
5) Oncogenic studies of Vorlex in two species
6) Reproduction study of Vorlex
7) Subchronic inhalation and dermal studies of Vorlex

Discussion

The memo of May 12, 1982 from Environmental Fate Branch states that "The potential for human exposure is high for this use... (but) EFB does not have adequate data to perform an exposure assessment at the present time."

It is the opinion of Toxicology Branch that the potential for human hazard is also likely to be high for this use. Although little toxicity data exists for the formulation to be used, this reviewer has discussed the toxicity of 1,3-dichloropropene in a number of previous reviews (e.g., December 2, 1981, October 22, 1981, January 8, 1980, February 6, 1980 and June 24, 1980). It has been noted that it is mutagenic (De Lorenzo et al, 1977) and the preliminary report of the NCI bioassay indicates that 1,3-dichloropropene is oncogenic in rats and mice, in both sexes, and at a variety of tissue sites. Case reports of central nervous system disturbances (e.g., severe headaches, irritability, easy fatiguability, anxiety, hyperactivity, fearfulness, loss of sex drive and convulsions) have been published (Peoples et al 1976). The entire toxicity data base for D-D was generated at IBT and has been declared "Invalid" with the exception of a recently submitted non-IBT 10-week inhalation reproduction study conducted in the rat. Toxicity data for Vorlex consists only of acute inhalation and eye irritation studies.

DeLorenzo, F., 'egl' Innocenti, S., Ruocco, A., Silengo, L., Cortese, R. utagenicity of Pesticides Containing 1,3-Dichloror e", Cancer Research, 37, 1915-1917, 1977.

Pe , Maddy, K.T., Thomas, W., "Occupational Healt xposure to 1,3-Dichloropropene", State of Californ HS-241, May 21, 1976

Given the potential for high applicator exposure, it is therefore suggested that such exposure to be quantified prior to hazard evaluation. It is also suggested that data gaps in the areas of teratology, reproduction, acute dermal and oral toxicity, skin sensitization, oncogenicity and subchronic toxicity (by the appropriate routes of exposure) be addressed by the registrant.

Toxicity Data Summary

Vorlex

(See review of January 31, 1978 from W. Dykstra.)

Acute Inhalation, Rats	LC_{50} = 11.0 gm/m^3 Tox. Cat. III	Core-Minimum
Acute Inhalation, Rats	LC_{50} = 1.9 mg/L Tox. Cat. II	Core-Minimum
Eye Irritation, Rabbit	Tox. Cat. I	Core-Minimum
Eye Irritation, Rabbit	Tox. Cat. I	Core-Minimum

Gary J. Burin 5/26/82

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Toxicology Branch
Hazard Evaluation Division (TS-769) 6/4/82

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