8/27/84

034401
SHAUGHNESSEY NO.

REVIEW NO.

EE BRANCH REVIEW

DATE: IN 6/19/84 OUT 8/27/84

FILE OR REG. NO. 239-16 33, 239-2297

PETITION OR EXP. PERMIT NO.

DATE OF SUBMISSION 6/1/84

DATE RECEIVED BY HED 6/18/84

RD REQUESTED COMPLETION DATE 10/8/84

EEB ESTIMATED COMPLETION DATE 10/1/84

RD ACTION CODE/TYPE OF REVIEW 400/Miscellaneous data

TYPE PRODUCT(S): I, D, H, F, N, R, S Insecticide

DATA ACCESSION NO(S). W. Miller (16)

PRODUCT MANAGER NO.

PRODUCT NAME(S) Dibrom Technical: 239-2297

Naled Technical: 239-1633

COMPANY NAME Chevron Chemical Company

SUBMISSION PURPOSE Submission of miscellaneous data: EEB should determine if any of Reg. Std. data requirements are satisfied

SHAUGHNESSEY NO.	CHEMICAL, & FORMULATION	% A.I.

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

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

TO: William Miller
Product Manager, Team 16
Registration Division (TS-767)

THRU: Raymond Matheny
Head, Section 1
Ecological Effects Branch
Hazard Evaluation Division (TS-769)

THRU: Clayton Bushong
Chief, Ecological Effects Branch
Hazard Evaluation Division (TS-769)

SUBJECT: EEB comments on data submitted by registrant (Chevron Chemical Co) to support the registration standard requirements for Naled Technical (239-1633) and Dibrom Technical (239-2297).

EEB has evaluated the fish and wildlife toxicity studies submitted under Accession No. 253450 and the nontarget insect data submitted under Accession No. 253450. Conclusions are as follows:

A. Wildlife and Aquatic Organism Data EPA Accession No. 253450

Reference 1. Kenaga, E.E. 1979. Acute and Chronic Toxicity of 75 Pesticides to Various Animal Species. Down to Earth. Vol. 35 No. 2.

This article summarizes data from a variety of sources. Test procedures are not described. Information cannot be used to fulfill guideline requirements.

Reference 2. USFWS. August 1965. Effects of Pesticides on Fish and Wildlife, Circular 226.

EEB cannot evaluate the data from this document because a description of test procedures was not provided.

Reference 3. Johnson, W. and M. Finley (editors). "Handbook of Acute Toxicity of Chemicals to Fish and Aquatic Invertebrates." USFWS Resource Publication 137.

EEB finds the data from this publication to be acceptable for use in a hazard assessment.

Reference 4. Coppage, D. and E. Matthews. 1974. "Short-term Effects of Organophospate Pesticides on Cholinesterases of Estuarine Fishes and Pink Shrimp." Bull Environ. Contam and Toxicol. Vol. II No. 57.

This study is not of a type currently required to support registration of a pesticide.

Reference 5. Sanders, H. and O. Cope. 1966. "Toxicities of Several Pesticides to Two Species of Cladocerans." Trans. Amer. Fish. Soc. 95.

The data presented in this publication are summarized in Johnson and Finley (1980) [Reference 3] and are considered acceptable for use in a hazard assessment.

Reference 6. Sanders, H. 1969. "Toxicity of Pesticides to the Crustacean Gammurus lacustris." USFWS Technical Paper.

This study was evaluated under the Registration Standard procedure for naled and the results were discussed in the EEB Chemical Profile. While the study cannot be used to fulfill the guideline requirement for an acute toxicity study on an aquatic invertebrate, the data are acceptable for use in a hazard assessment.

Reference 7. Sanders, H. and O. Cope. 1968. "The relative toxicities of several pesticides to naiads of three species of stoneflies." Limnol. Oceanogr. 13(1): 112-117.

The data presented in this publication are summarized in Johnson and Finley [Reference 3] and are considered acceptable for use in a hazard assessment.

Reference 8. Sanders, H. 1970. "Pesticide Toxicities to Tadpoles of the Western Chorus Frog, Psedacris triseriata and Fowler's Toad, Bufo wood housii fowleri." Copeia. No. 2.

This study is not of a type required under current guidelines. However, the results provide supplemental information that may be utilized in a hazard assessment.

Reference 9. Tuskes, P. No date found. "An investigation into the effects of Dibrom 14 Concentrate on adult brine shrimp Artemia salina." No other information.

This study may not be used to fulfill the guideline requirement for an acute toxicity test on a shrimp species. This is because the exact formulation of the test material was not stated in the report and it could not be determined if nominal concentrations were based on amounts of active ingredient or total product. Also, the brine shrimp is not a recommended test species. Study procedures along with water and test animal characteristics were not adequately described.

Reference 10. Gusey, W. No date found. "Organic Phosphate Pesticides and Fish and Wildlife Resources." (Draft).

This is a review article and does not contain any information on test procedures utilized to perform the referenced studies.

Reference 11. Coppage, D. and E. Matthews, 1975. "Brain acetylcholinesterase inhibition via Marine Teleost during Lethal and Sublethal Exposure to Naled in Seawater." Toxicology and Applied Pharm. 31, 128-133.

This study is not of a type required under current guidelines.

Reference 12. Korn, S. and R. Earnest. 1974. "Acute Toxicity of Twenty Insecticides to Striped Bass (Morone saxatilis). Calif. Fish and Game. 60(3): 128-131.

This study was reviewed by EEB under the Registration Standard procedure. The results may not be used to fulfill a guideline requirement on an estuarine fish species. This is mainly because the striped bass is not a recommended test species. Also, the test temperature was not controlled, D.O. levels were not specified, and information on controls was not provided.

Reference 13. Vance, B. and A. Maki. 1976. "Bioconcentration of Dibrom by Stigeoclonium pachydermum." Bull. Environ. Contam. Toxicol. 15(5).

This study should be reviewed by Exposure Assessment Branch.

Reference 14. Bearden, C. June 1967. Field Tests Concerning Effects of Dibrom 14 Concentrate (Naled) on Estuarine Animals." Bears Bluff Lab. S.C." Contribution No. 45.

This study was previously reviewed by EEB (see memo from Fred Betz to Pat Critchlow; dated August 7, 1978.) The results may not be used to fulfill a guideline requirement for simulated field tests with naled. This is mainly because test organisms were only exposed to the pesticide for a very brief time (1 to 4 hours).

Reference 15. Goode, J.P. et al. May 1967. "Field Observations on the Effects of Ultra-low Volume Application of Dibrom on Fish and Wildlife in South Florida." Performed in conjunction with the USFWS.

This study was evaluated under the Registration Standard procedure for naled. The results cannot be used to fulfill a guidline requirement for field study, however, the study provides supplemental information.

Reference 16. Lesser, C.R. 1977. "The Effects of Naled on Selected Species of Salt Marsh Organisms." Maryland Dept. of Agriculture. Unpublished Study.

This study was evaluated under the Registration Standard for naled. Results cannot be used to fulfill a guideline requirement for a field study, however, the study did provide some supplemental information about the chemical.

Reference 17. Livingston, J.M. et al. December 1974. "The Effects of Ultra-low volume Aerial Dispersal of Naled on an Aquatic Habitat: Robins Air Force Base, Georgia."

EEB previously evaluated this study (memo from Fred Betz to Pat Critchlow; dated August 7, 1978). The results were found to provide supplemental information regarding naled field use, however, the study cannot be used to fulfill a guideline requirement.

Reference 18. Dean, H.J. and J.R. Colguhoun. January 1977. "Effects of Naled (Dibrom-14) on Non-target Organisms in the Horseheads Swamp Area of Catherine Creek." Submitted to Chevron Chemical Co.

This field study may not be used to fulfill guideline requirements. Site descriptions were inadequate, sample sizes were too small, residue monitoring was not performed, sampling of water and sediments were infrequent. The text of the report was confusing and methods were inadequately discussed.

Reference 19. Goode, J.P. 1966. "Product Performance Report. Effect on Fish and Wildlife." Submitted by Chevron Chemical Co.

The data on brain cholinesterase levels of fish and mammals exposed to naled, as presented in this document, cannot be evaluated. Analyzation methodology was not reported.

Reference 20. Kelley, B.J. 1970. "Evaluation of the toxicity of aerial ULV applications of Dibrom 14 to estuarine organisms." Chevron Chemical Co.

This information provided in the report of this study was insufficient for evaluation of data. For example, a site description was not included, the number of animals exposed was not reported and measured water characteristics were not provided. This study cannot be used to fulfill a guideline requirement for a field study with naled.

B. Nontarget Insect Data EPA Accession No. 253452

Reference 1. Atkins, E.L. Jr., L.D. Anderson, D. Kellum, and K.W. Neuman. 1977. "Protecting honey bees from pesticides." Univ. of Calif., Div. Agric. Sci., Leaflet 2883.

Data from this study were reviewed during development of the nontarget insect portion of the registration standard for naled.

Reference 2. Kenaga, E.E. 1979. "Acute and chronic toxicity of 75 pesticides to various animal species." Down to Earth 35(2): 25-31.

This is a review article and contains only secondary information.

Reference 3. Womeldorf, D.J., E.L. Atkins, and P.A. Gillies. 1974. "Honey bee hazards associated with some mosquito abatement aerial spray applications." California Vector Views 21(9): 55-55.

This study was reviewed during development of the nontarget insect portion of the registration standard for naled.

Reference 4. Caron, D.M. 1979. "Effects of some ULV mosquito abatement insecticides on honey bees." J. Econ. Entomol. 72 (1): 148-151.

This study is irrelevant to the development of the non-target insect portion of the registration standard for naled.

Reference 5. Colburn, R.B. and G.S. Langford. 1970. "Field evaluation of some mosquito adulticides with observations on toxicity to honey bees and house flies." Mosquito News 30(4): 518-522.

Study is irrelevant to the development of the nontarget insect portion of the registration standard for naled. This study adds no information which would change the hazard assessment already completed for naled.

According to the June 1983 publication "Guidance for the Reregistration of Manufacturing-Use and Certain End-Use Pesticide Products Containing Naled", the following are unfulfilled fish and wildlife data requirements for this chemical.

1. Data from acute studies on freshwater fish species (96 hour LC_{50}) using typical end-use products containing naled.

2. Data from an acute study on a freshwater aquatic invertebrate (48 hour EC_{50}) using typical end-use products containing naled.

The above data are required for products that are used in aquatic sites.

3. Data from acute studies on marine/estuarine aquatic species using the technical product. Tests include:
   a). 48 hour EC_{50} study on oyster embryo-larvae or 96 hour LC_{50} oyster shell deposition
   b). 96 hour LC_{50} study on a marine/estuarine fish species (preferably spot or pinfish)
   c). 96 hour LC_{50} on a juvenile shrimp species

The above data are required because significant concentrations of the chemical are expected to reach marine/estuarine environments when the pesticide is used according to label directions.

None of the references submitted under Accession No. 253450 contained information acceptable for fulfilling the outstanding fish and wildlife data requirements for reregistration of naled.

The June 1983 reregistration document indicates that the non-target insect data requirements for naled are fulfilled.

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