

EEE BRANCH REVIEW

DATE: IN \_\_\_\_\_ OUT \_\_\_\_\_ IN 5/11/76 OUT 5/13/76 IN \_\_\_\_\_ OUT \_\_\_\_\_  
FISH & WILDLIFE ENVIRONMENTAL CHEMISTRY EFFICACY

FILE OR REG. NO. 337-AU

PETITION OR EXP. PERMIT NO. \_\_\_\_\_

DATE DIV. RECEIVED \_\_\_\_\_

DATE OF SUBMISSION \_\_\_\_\_

DATE SUBMISSION ACCEPTED (3)(C)(1)(D) Status = 2B yes

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

PRODUCT MGR. NO. 33 Banks

PRODUCT NAME(S) MICROBIOCIDE 100

COMPANY NAME Lester Laboratories, Inc.

SUBMISSION PURPOSE Registration for use on cooling water, secondary oil recovery and paper mills.

CHEMICAL & FORMULATION Methylenebis (thiocyanate)

1. INTRODUCTION

Applicant wishes to register Methylenebis (thiocyanate) for a number of industrial applications described below. Microbiocide-100 is CYTOX 3522 repackaged. It contains .94 lb a.i./gal.

2. DIRECTIONS FOR USE

- 2.1 PAPER MILLS - MICROBIOCIDIC - 100 is added to the white water system or to the stock furnish at normal rate of to 8 fluid ounces per ton of paper. For heavy slime add as a periodic *Shock* ~~shock~~ dose; otherwise meter continuously.

- 2.2 SECONDARY OIL RECOVERY - For control of sulfate-reducing bacteria in water used for secondary oil recovery or surface injection, 1 to 8 fluid ounces of MICROBIOCIDIC-100 per 1000 gallons of water (10 to 62 part per million of product) as a slug treatment is applied ~~once~~ *OR TWICE A DAY*

2.3 INDUSTRIAL RECIRCULATING COOLING WATER SYSTEMS

Initial Dose: When the system is noticeably fouled, apply 6 to 13 fluid ounces per 1000 gallons of water (45 to 100 parts of MICROBIOCIDIC - 100 per million parts of water) daily until control is achieved.

Subsequent Dose: When a microbial control is evident, add 2 to 8 fluid ounces per 1000 gallons of water in the system (12.5 to 62 parts of MICROBIOCIDIC-100 per million parts of water) every 2 to 7 days.

- 2.4 "Treated effluent should not be discharged (SIC) where it will drain into lakes, streams, ponds, or public water. Do not contaminate water by cleaning of equipment or disposal of wastes.

- 2.5 Do not reuse empty drum. Return to drum reconditioner or destroy by perforating or crushing and burying in a safe place."

3. DISCUSSION

No environmental chemistry data was referenced or submitted.

4. RECOMMENDATIONS

We do not concur with the proposed use.

The following radio-labelled studies must be submitted:

1. Hydrolysis studies at pH 5, 7, and 9 at 20°C for a period of 4 weeks or until 75% of parent compound is hydrolyzed. The percentages of parent compound and its major degradation products are needed.

2. Activated slug test.

For consideration of deletion of the discharge restriction, the following environmental chemistry data will be required using radiolabelled pesticide.

1. Hydrolysis study
2. Microbial study

- a. Studies of effects of pesticide on soil, microbial populations, appropriate laboratory culture and/or soil enzyme systems.

- b. Studies to determine the relative role of microbes in the degradation of a pesticide.

3. Photodegradation study in water at pH of maximum stability. The percentages of parent compound and its major photodegradation products are needed. Water temperature should be around 20°C and should not exceed a depth of six inches. The study is to continue until 1/2 of the parent compound is photodegraded or for one week.

4. A fish accumulation study.

The following non-radiolabelled EC studies will be needed.

5. The degradation in water containing sediment should be studied to determine:
  - a. Persistence and degradation in water with bottom sediment;
  - b. Rates of adsorption of applied parent residues from the water to the sediment phase and ~~desorption~~ *desorption* from the sediment in the presence of clean water;
  - c. Effects of oxygen depleted (anaerobic) conditions on the rates and mechanisms of degradation and adsorption. Data gathered for this type of study may substitute for anaerobic soil metabolism studies for some uses. However, anaerobic soil metabolism studies are not to be substituted for aquatic degradation studies without prior consent of the Agency.

6. Water and soil moving water study

- a. Field persistence data in aquatic environments will required for all aquatic uses, but not for forest uses.
- b. Studies on rate and extent of movement in flowing water are obtained at selected points downstream from point of entry by chemical analysis of residues in water and by bioassay using sensitive aquatic plants or animal organisms.

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