

US EPA ARCHIVE DOCUMENT

000701
SHAUGHNESSEY NO.

REVIEW NO.

EEB BRANCH REVIEW

DATE: IN 1/25/83 OUT MAR 11 1983

FILE OR REG. NO. 1070⁷-9

PETITION OR EXP. PERMIT NO. _____

DATE OF SUBMISSION 1/5/83

DATE RECEIVED BY HED 1/24/83

RD REQUESTED COMPLETION DATE 4/4/83

EEB ESTIMATED COMPLETION DATE 3/28/83

RD ACTION CODE/TYPE OF REVIEW 305/Amendment

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

DATA ACCESSION NO (S). _____

PRODUCT MANAGER NO. R. Mountfort (23)

PRODUCT NAME (S) Magnacide H

COMPANY NAME Magna Corporation

SUBMISSION PURPOSE Proposed Conditional Registration of Labeling
Revisions concerning storage and holding time
of treated irrigation water.

SHAUGHNESSEY NO.	CHEMICAL, & FORMULATION	% A.I.
<u>000701</u>	<u>Acrolein</u>	<u>92%</u>
_____	_____	_____
_____	_____	_____

Magnacide H Herbicide

100 Pesticide Label Information

Magnicide is registered for control of submersed and floating weeds and algae in irrigation canals and drainage ditches. It can be applied at up to 15 ppm in the irrigation water.

Acrolein is the active ingredient (92%) of Magnacide®

102 Behavior in the Environment

The Environmental Fate Branch indicates that there is no valid fate data available on acrolein.

103 Toxicological Properties

See previous EEB reviews for reports of toxicity studies. Apparently magnacide® is very highly toxic to fish and aquatic invertebrates.

104 Hazard Assessment

Magna Corporation proposed a label change. Presently the label requires a 6 day holding period for any treated water before allowing it to enter public fish-bearing waters. Magna wants to change the label to read: "Make application in such a manner that concentrations lethal to fish will not enter fish-bearing waters."

The Ecological Effects Branch is unable to complete an indepth hazard assessment on this proposed partially because of a lack of "core" toxicity and fate data. The major reason, however, is because the proposal is too vague for us to assess its potential hazard.

Magnacide is obviously highly toxic to fish as evidenced by the numerous unvalidated test results in the files, the (8/26/76) fish kill and the field study reviewed with this submission. It apparently degrades rapidly (in a matter of days) and is probably rendered non-toxic within the "6 days" required as the holding time on the existing label, although there is no "valid" data to solidly support even that precautionary statement.

Obviously, if the proposed precautionary statement was followed "to the letter" there would be no adverse effects to fish in public waterways. However, I seriously question the likelihood of such a limitation working, considering the problems involved with a user "predicting" when the treated water was non-toxic and then following through with appropriate actions. It is likely that if the present label restriction is followed there is little or no hazard to in public waterways. However, it is impossible to say that the proposed change would continue to protect those fish.

104.4 Endangered Species

No assessment can be made as to the potential effect of this proposal to endangered species.

104.5 Adequacy of Data

The data were not adequate to perform a hazard assessment on this proposal.

107 Conclusions

107.2 Data Requests

Before any hazard assessment pertaining to magnacide® can be performed, at the least the following core data are needed.

- Two 96-hour acute toxicity studies with both a warmwater and a cold water fish.
- One 48-hour acute toxicity study with an aquatic invertebrate.
- One Acute oral toxicity test with waterfowl because of the use. (mallard duck is recommended)
- Two Avian dietary studies, one with an upland gamebird and one with a waterfowl.

Note that many studies similar to those listed have been through the Branch, i.e. the results appear in various reviews. However none were reported as having been validated and the actual studies are not available.

Additional "Tier 2" studies would most likely be needed as well as environmental fate data and possibly field studies.

107.6 Recommendations

There are insufficient data to perform a hazard assessment at this time.

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Ecological Effects Branch

Clayton Bushong 3/24/83
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DATA EVALUATION REPORT

1. Chemical: Magnacide

Sha #: 000701

2. Formulation: 92% Acrolein

3. Citation: Brady, J.L. 1982. Memo entitled; Magnacide H in Imperial Irrigation District's Trifolium 14 Lateral. An unpublished report prepared by Magna Corporation submitted 1/20/83 under registration no. 10707-9. Data Acc. # 249308.

4. Date Reviewed: 3/4/83

5. Reviewed by: Daniel Rieder
Section II/EEB

6. Test Type: Small field study

Species: Channel Catfish

Magnacide was added to water in ponds. The catfish were then exposed to the water over time.

7. Results:

Channel Catfish up to 8" long died in Magnacide H[®] treated water after up to 30 hrs of aging. Apparently mortality ceased at this time.

8. Category: Supplemental

This study provides some useful data but would not fulfill the requirements for a field study. It supports the contention that water treated with Magnacide H[®] is highly toxic to fish.

METHODS

Three sequential ponds were drained and then filled with water treated with approximately 11 ppm Magnacide® several hours, after they began circulating the pond water through a 60 liter aquarium adding 6" to 8" channel catfish. Temperature and dissolved oxygen was measured throughout the study. The fish were added 1 (or 3) at a time and as the previous one(s) died, new ones were added. The study ended when several hours passed with no mortality.

RESULTS

Table 1 shows that fish were dying 30 hours after treatment.

EVALUATION

The test was with approximately 11 ppm concentration, this is based on actual measurements. (These residue measurements have not been approved by EFB). Further more the study would have been more useful if the maximum concentration (15 ppm) had been used, observations made longer than 33 hours and shorter (younger) fish had been tested. Also it would be necessary to conduct the studies at various different sites to get a range of results.

As it is, extrapolation from this study with 11 ppm to a hypothetical 15 ppm results in a "time to no mortality" of 37.5 hours. Note that as of 3/4/83, no field study had been requested.

Conclusions:

Category: Supplemental

Rationale: See Evaluation above.

Repairability: Not repairable.