

US EPA ARCHIVE DOCUMENT

DATA EVALUATION RECORD

CASE GS 0096

PICLORAM

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CHEM 005105

BRANCH EEB DISC _____ Aquatic Toxicity : Fish

FORMULATION _____ Solution

Duddles, G. A. 1968. The Acute Fish Toxicity of the Triethylamine Salt of 4-amino-3,5,6-trichloropicolinic Acid. Waste Control Laboratory. The Dow Chemical Company, Midland, Michigan.

SUBST. CLASS = S

DIRECT RVW TIME = _____ (MH)

REVIEWED BY: M. A. Mayes, Ph.D.
TITLE: Aquatic Toxicologist
ORG: Health and Environmental Sciences
LOC/TEL: The Dow Chemical Company

SIGNATURE: *Monte A Mayes*

DATE: *10-29-82*

APPROVED BY:
TITLE:
ORG:
LOC/TEL:

SIGNATURE:

DATE:

CONCLUSIONS:

This study is scientifically sound. This report provides data that indicate that the triethylamine salt of picloram is slightly toxic to fishes with 96 h TL_m's of 41.4 and 75.0 ppm for the rainbow trout and channel catfish respectively. However, this study does not fulfill guideline requirements for technical picloram.

DATA EVALUATION RECORD

1. CHEMICAL: Picloram (4-amino-3,5,6-trichloropicolinic acid)

2. FORMULATION: Picloram as the Triethylamine Salt. 50% active.
(Stock solution of 10 mg/ml AI was used for toxicity tests.)

3. CITATION: Duddles, G. A. 1968. The Acute Fish Toxicity of the Triethylamine Salt of 4-amino-3,5,6-trichloropicolinic Acid. Waste Control Laboratory. The Dow Chemical Company, Midland, Michigan.

4. REVIEWED BY: M. A. Mayes, Ph.D.
Aquatic Toxicologist
Health and Environmental Sciences
The Dow Chemical Company

5. DATE REVIEWED: July 13, 1982

6. TEST TYPE: Aquatic Toxicity : Fish
 - A. Test Species: Salmo gairdneri (Rainbow Trout)
Ictalurus punctatus (Channel Catfish)
Carassius auratus (Goldfish)

7. REPORTED RESULTS: The 96 hr TL_m was estimated to be 41.4, 75.0 and 62.0 ppm for the rainbow trout, channel catfish and goldfish respectively.

8. REVIEWER'S CONCLUSIONS: This study is scientifically sound. This report provides data that indicate that the triethylamine salt of picloram is slightly toxic to fishes with 96 h TL_m's of 41.4 and 75.0 ppm for the rainbow trout and channel catfish respectively. However, this study does not fulfill guideline requirements for technical picloram.

MATERIALS AND METHODS:

The procedures were those recommended by the U.S. Fish and Wildlife Service, "Procedures for Evaluation of Acute Toxicity of Pesticides to Fish and Wildlife."

Reconstituted water containing 30 mg/L CaSO₄, 30 mg/L Mg SO₄, 48 mg/L Na₂CO₃ and 3 mg/L KCl was used in all tests. Exposure chambers were either 5 gallon glass jugs or 10 gallon aquaria. Fish were obtained from private hatcheries and acclimated to laboratory condition at least 13 days prior to testing. During holding all fish were fed dry trout pellets. Ten fish were exposed per concentration; mortality was the effect criterion and was recorded after 24, 48, 72 and 96 hours of exposure. Test temperature (60°f for rainbow trout and 80°f for channel catfish and bluegill) was maintained by constant temperature water troughs. An adequate oxygen concentration was achieved by limiting loading to less than 0.5 gr fish/liter of water.

STATISTICAL ANALYSIS:

The TL_m was estimated by use of the straight line graphical interpolation method described in "Standard Methods for the Examination of Water and Wastewater", 11th Edition 1960, pages 457-471.

DISCUSSION/RESULTS:

The 96 hr TL_m values were estimated to be 41.4, 75.0 and 62.0 ppm for the rainbow trout, channel catfish and goldfish respectively. There was no mortality in the rainbow trout and channel catfish controls, but there was 30% mortality in the goldfish controls.

REVIEWER'S EVALUATION:

Examination of the raw data shows that in the rainbow trout test there were 5 test concentrations ranging from 10 to 100 ppm plus a control. The catfish test had four concentrations ranging from 32 ppm to 180 ppm plus a control. The goldfish test had only three test concentrations plus a control. The raw data also shows pH of 8.3 in the rainbow trout study, and pH of 7.5 in the channel catfish study. No pH data is available in the goldfish study. The catfish and trout data are scientifically sound. The goldfish data are unacceptable.

VALIDATION:

Category: Supplemental

Rationale: Test not conducted with technical picloram

Repairability: N.A.

Rainbow Trout Dose-Mortality Data
Triethylamine Salt of Picloram

Concentration (mg/L)	% Mortality 96 h
100	100
56	100
32	0
18	0
10	0
0	0

Channel Catfish Dose-Mortality Data
Triethylamine Salt of Picloram

Concentration (mg/L)	% Mortality 96 h
180	100
100	100
56	0
32	0
0	0