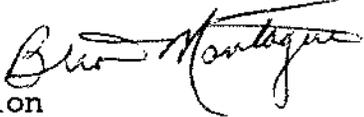


US EPA ARCHIVE DOCUMENT

**DATA EVALUATION REPORT  
ECOLOGICAL EFFECTS BRANCH**

1. **Chemical:** Methazole
2. **Test Material:** Technical Methazole 97.2% a.i., Lot #RA7822 was received from the Sandoz Corporation on 5/7/86. The material was stored in darkness at room temperature until test initiation.
3. **Study Type:** 48-hour Static Acute Testing with Daphnia magna,
4. **Study Identification:**
  - Study Author: Forbis, Alan
  - Study Lab: Analytical Bio-Chemistry Laboratories,  
Columbia, Missouri
  - Study Dates: July 8-10, 1986
  - Study Identification: Project No. 34708
  - Sponsor: Sandoz Crop Protection Corp., Des Plaines, Illinois
  - EPA Identification: MRID 40569004
5. **Reviewed by:** Brian Montague, Fisheries Biologist  
Ecological Effects Branch  
Environmental Fate and Effects Division 
6. **Approved by:** Ray Matheny, Supervisory Biologist  
Ecological Effects Branch  
Environmental Fate and Effects Division (H7507C)  5/31/90
7. **Conclusions:** Formation of a precipitate and failure to measure the concentrations, despite this fact, compromise the validity of the reported LC<sub>50</sub> value.
8. **Recommendations:** Repeat the study. See part 13, under repairability.

9. **Submission Purpose:** To fulfill reregistration guideline requirements.

10. **Study Methods and Protocol:** Protocol was based on ASTM guidelines as outlined by the Committee on Methods for Toxicity Tests with Aquatic Organisms.

**Test Organisms:** Daphnia magna were obtained from laboratory culture stocks. The adult Daphnia were fed algae at least once every three days and supplemented with yeast and ground cereal meal. Daphnia used in definitive testing were first instar, less than 24 hours old.

**Test Solution:** Dimethyl formamide was used as the solvent in stock solution preparation at a maximum concentration of 0.020 ml/L, equivalent to levels at the highest dosages. Based on earlier range testing the concentrations were set at 1.3 ppm, 2.5 ppm, 5.0 ppm, 10 ppm, and 20 ppm. Dilution water used was aged well water with a hardness of 225-275 ppm CaCO<sub>3</sub> of hardness and a pH of 7.8-8.3.

**Test Methods and Materials:** Ten Daphnia were randomly distributed to each of the 250 ml glass test beakers. Two replicates of each test concentration, the dilution control, and the solvent control were employed. Temperature was maintained at 20±2°C and lighting was 16D/8N at 50-70 foot candle intensity. Observation was made every 24 hours and temperature, pH, and dissolved oxygen were measured on day 0 and day 2 for the controls, 1.2 ppm, and 20 ppm test concentrations.

11. **Test Results:** Mortality was observed in the two highest test concentrations with 50% mortality recorded in the 10 ppm test concentration. The 20 ppm concentration caused 70% mortality. No mortality was seen after 24 hours of exposure. A precipitate was noted in all test concentrations initially, but at 24 hours after test initiation the precipitate was present only in the two highest test concentrations. The precipitate remained until test termination. Dissolved oxygen ranged from 8.2 to 9.2 mg/L, pH from 8.4 to 9.0, and temperature from 21 - 22°C.

Abnormal behavior prior to mortality included quiescence, surfacing, daphnids coated with undissolved precipitate and/or laying on the bottom. This behavior was displayed only in 10 ppm and 20 ppm concentrations and not in the three lower ones.

12. **Study Author's Conclusions:**" The results of the 48-hour static Daphnia magna toxicity study are summarized below. All requested values are based upon nominal concentrations.

<u>Compound</u>	<u>48-hour LC<sub>50</sub></u> <u>95% C.I.</u>
Technical Methazole	12 mg/L (9.8 - 16 mg/L)

The no-effect level observed for Technical Methazole was 5.0 mg/L after 48 hours which was based on the lack of mortality and abnormal effects."

13. **Reviewer's Discussion:** Though protocol generally followed acceptable EPA and ASTM guidelines, there are some disparities. Temperature was not monitored adequately during the study period, though it appears to have remained constant. There were apparently problems with maintaining solubility of the material, or of achieving it initially. Despite the fact that precipitation was noted at initiation, the study was continued. It is not possible therefore to reach a conclusion as to whether the organisms were actually exposed to the nominal concentration levels for a full 48 hours. No analysis was performed at study termination to determine what actual levels were present. The LC<sub>50</sub> is therefore not based on scientifically verified concentrations, only estimates.

**Classification:** Invalid

**Rationale:** Formation of a precipitate and failure to verify concentration accuracy at termination.

**Repairability:** Repairable only if the registrant or the laboratory can scientifically verify concentration accuracy, or provide evidence that degradation would not have been significant.