

US EPA ARCHIVE DOCUMENT

MEMORANDUM

Subject: Review of Methamidophos for Pilot Program

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 Environmental Fate and Effects Division (H7507C)

To: Henry T. Craven, Head - Section IV  
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Ecological Effects Branch has reviewed the generic data requirements for methamidophos. Six studies have been submitted to the Agency in response to the guidance documents. Of these studies, two studies meet the guideline requirements and other two studies do not. The remaining two studies have not been received or reviewed by EEB. The current data requirements are summarized as follows:

- A. The data required in the original guidance document:
  - 1. Simulated and actual field testing - Mammals and Birds (71-5)
  - 2. Acute toxicity to estuarine and marine organisms (72-3)
- B: The Data submitted in response to the guidance document:
  - 1. Avian simulated field study(MRID 00146999) - unacceptable.
  - 2. Acute LC50 estuarine and marine organisms (Bay shrimp)(MRID 00144430) - fulfills the guideline requirements.
  - 3. Acute LC50 estuarine and marine organisms (Sheephead minnow)(MRID 00144431) - fulfills the guideline requirements.
  - 4. Shell deposition in Eastern oyster(MRID 00146137) - unacceptable.
  - 5. Acute toxicity (Eastern oyster)- one study (Report #BW-86-12-2248) with two different MRID's(40074701 & 40088601) -have not been received.
- C. If the oyster acute toxicity study is determined to be acceptable, there will be no data requirement for acute LC50 for estuarine and marine organisms. The studies that have been reviewed and found acceptable to fulfill guideline requirements gave the following information: Shrimp 96 hr. LC50 = 1.1 ppm and the estuarine fish 96 hr. LC50 = 5.6 ppm.

D. The new data requirements is as follows:

1. Simulated and actual field testing - Mammals and Birds (71-3) The simulated field study that was submitted is not sufficient to address EEB's concern for the effect under actual use conditions, since the original request EEB is requiring actual field testing to fulfill this data requirements. A study on cabbage in Wisconsin is scheduled to take place this summer.

It took eight hours to review methamidophos registration Standard for pilot program.

TABLE A-5

PERMITTERS

Generic Data Requirements: TOXICOLOGICAL EFFECTS \*

Guideline Citation	Name of Test	Completion	Does EPA have data to partially or totally satisfy this requirement?	Bibliographic Citation	Must additional data be submitted under FIFRA 3(c)(2)(B)? **
163.71-1	Avian Single-Dose Oral LD <sub>50</sub>	Technical Grade (TG)	yes	00041311 <sup>N</sup> , 00014064 <sup>N</sup> , 00014065 <sup>N</sup> , 00041-011 <sup>C</sup>	no
163.71-2	Avian Dietary LC <sub>50</sub>	TG	yes	00041-002 <sup>C</sup> , 00041654 <sup>D</sup> , 00014064 <sup>N</sup> , 00014304 <sup>N</sup>	no
163.71-4	Avian Reproduction	TG	yes	00014111 <sup>N</sup> , 00014114 <sup>N</sup>	no
163.71-5	Simulated/Actual Field Testing for Mammals and Birds	End-use Formulation (Monitor & Spray)	no	--	yes <sup>2/</sup>
163.72-1	Fish Acute LD <sub>50</sub>	TG	yes	00041312 <sup>N</sup> , 00014063 <sup>N</sup>	no
163.72-2	Acute Toxicity to Aquatic Invertebrates	TG	yes	00041311 <sup>N</sup> , 00014110 <sup>N</sup> , 00014305 <sup>N</sup>	no
163.72-3	Acute Toxicity to Estuarine & Marine Organisms	TG	no	40094701, 40088601 00174431 00144430	no

\* All requirements apply to registrations for "non-domestic, terrestrial, food crop" uses, only. Registration for other uses patterns may involve different data requirements.

\*\* All data must be submitted within 36 months (due September '85).

*Based on the assumption that the submitted study is acceptable and fulfill guideline requirements.*

MINUTES

1. This formulation was selected because it has the highest active ingredient concentration of currently registered formulations.
2. A ~~short-term~~ field study on birds using an end-use product is required when the use of the product is likely to result in adverse effects on avian wildlife exposed to the pesticide. Three registered end-use products (Monitor 4 Spray, Monitor 6 Spray, and Monitor 4) can be used on cotton, potatoes, and vegetable crops at rates (1 lb. active ingredient per acre) that will very likely have adverse effects on birds. The maximum calculated residues on avian food items (ppm) and the calculated amount of toxicant that different size birds might be exposed to in their diets (mg/kg) are, in many cases, greater than the laboratory acute (LD<sub>50</sub>) and subacute (LC<sub>50</sub>) toxicity levels. In addition, a 1980 bird kill in Wisconsin was reported to be the result of an aerial application of Monitor 4 to cotton.
3. Testing is required to establish the acute toxicity of the technical pesticide to ~~enduring or marine invertebrates~~ when the end-use product is expected to enter the estuarine or marine environment in significant concentrations because of its use or mobility pattern. ~~In the case of arthropods, it is very soluble in water and mobile in the soil and it is toxic to cotton and on vegetable crops by field and other Gulf coastal states adjacent to aquatic estuaries and marine habitat.~~
  - A. Studies submitted by Chevron Chemical Company. These studies may be compensable.
  - B. Studies submitted by Mobay Chemical Corporation. These studies may be compensable.
  - C. These studies may be compensable.