



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

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SUBJECT: Environmental Fate and Ecological Risk Assessment in Support of the Reregistration Eligibility Decision for Chlormequat Chloride

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The Environmental Fate and Effects Division (EFED) has completed an environmental fate and ecological risk assessment chapter in support of the reregistration eligibility decision for chlormequat chloride (Cycocel[®]; EPA Reg. No. 241-74). An environmental risk assessment in support of a Section 3 registration for use on containerized nursery crops and bedding plants was completed last year (DP Barcode D333104), and the only difference is a lower application rate. Based on current label uses at maximum rates there are potential risks to birds, reptiles, terrestrial-phase amphibians, mammals, and both terrestrial and aquatic plants. No chronic toxicity data are available for aquatic vertebrates; therefore, the potential chronic risks to fish and aquatic-phase amphibians cannot be evaluated and is presumed.

Table 1 lists the status of the ecological effect dataset. A major deficiency is the lack of a no-observed adverse effect concentration (NOAEC) for avian reproduction. Table 2 lists the status of the fate dataset. Major deficiencies include the lack of hydrolysis, photolysis and anaerobic soil metabolism data, as well as unidentified transformation products in the aerobic soil and aerobic aquatic metabolism studies.

This assessment also assumes that chlormequat chloride will be applied by low-

boom sprayer to bedding plants and by back-pack sprayer to most containerized ornamentals. If this assumption is not supported by the registrant, spray drift and runoff estimates may be affected.

Recommended label language:

"Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA."

"Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate."

"Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas."

Endangered Species

Levels of concern for threatened and endangered species are exceeded for several types of wildlife, including birds, mammals and both aquatic and terrestrial plants. Because potential risk is indicated in their surrogates, there is potential risk to listed amphibians and reptiles. Exceedance of LOCs for plants indicate concern for indirect effects on listed terrestrial animal species reliant on susceptible plant communities, or those solely dependent on a sensitive plant for some portion of their life cycle (obligate relationships). Due to lack of data, chronic risk to freshwater fish is presumed.

Table 1. Status of ecological data requirements for chlormequat chloride.

DATA REQUIREMENT			Adequate for Ecological Risk Assessment	CITATION: MRID or ECOTOX
850.2100	71-1A	Avian Acute Oral Toxicity	-	-
Non-guideline		Avian Acute Oral Toxicity	Yes	467152-11; supplemental
850.2200	71-2A	Avian Dietary Toxicity - Quail	Yes	467152-122; supplemental
850.2200	71-2B	Avian Dietary Toxicity - Duck	Yes	467152-13; acceptable
850.2300	71-4A	Avian Reproduction - Quail	-	-
850.2300	71-4B	Avian Reproduction - Duck	-	-
Non-guideline		Avian Reproduction - Quail	No	467152-14; supplemental
850.1075	72-1A	Fish Acute Toxicity Bluegill	Yes	001232-61; acceptable
850.1075	72-1B	Fish Acute Toxicity Fathead Minnow	Yes	000374-33; acceptable
850.1075	72-1C	Fish Acute Toxicity Rainbow Trout	-	-
Non-guideline		Fish Acute Toxicity Rainbow Trout	Yes	467152-17; supplemental
850.1010	72-2A	Invertebrate Acute Daphnid Toxicity	Yes	001387-19; supplemental
850.1075	72-3A	Estuarine/Marine Toxicity - Fish	Yes	ECOTOX
850.1025	72-3B	Estuarine/Marine Toxicity - Mollusk	-	-
850.1035	72-3C	Estuarine/Marine Acute Toxicity	Yes	ECOTOX
850.1300	72-4A	Daphnid Chronic Toxicity (life cycle)	Yes	467152-16; supplemental
850.1350	72-4B	Estuarine/Marine Invertebrate chronic (Mysid Shrimp, Life Cycle)	-	-
850.1400	72-4C	Freshwater Fish- Early Life Stage	No	Data gap
850.1400	72-4D	Estuarine Fish- Early Life Stage	-	-
850.4100	123-1A	Terrestrial Plant Toxicity, Seedling Emergence	-	-
Non-guideline		Terrestrial Plant Toxicity, Seedling Emergence	Yes	467152-19; supplemental
850.4150	123-1B	Terrestrial Plant Toxicity,	-	-

DATA REQUIREMENT			Adequate for Ecological Risk Assessment	CITATION: MRID or ECOTOX
		Vegetative Vigor		
Non-guideline		Terrestrial Plant Toxicity, Vegetative Vigor	No	467152-20; supplemental
850.4400	123-2	Aquatic Plant Growth- <i>Lemna</i>	Yes	467152-21; acceptable
850.4500	123-2	Aquatic Plant Growth- Algae	Yes	467152-22; acceptable
850.4550	123-2	Aquatic Plant Growth- Cyanobacteria	Yes	467152-23; supplemental
850.3020	141-1	Honey Bee Acute Contact	Yes	467152-24; acceptable

Table 2. Status of environmental fate and transport data requirements for chlormequat chloride.

Data Requirement and Guideline Reference Number	Adequate for Ecological Risk Assessment
Degradation - Lab 161-1 Hydrolysis 161-2 Photolysis in Water 161-3 Photolysis in Soil 161-4 Photodegradation in Air	No ¹ No ² NA NA
Metabolism Studies – Lab 162-1 Aerobic Soil Metabolism 162-2 Anaerobic Soil Metabolism 162-3 Anaerobic Aquatic Metabolism 162-4 Aerobic Aquatic Metabolism	No ³ No NA No ⁴
Mobility Studies – Lab 163-1 Leaching and Adsorption/Desorption 163-2 Volatility from Soil (Lab) 163-3 Volatility from Soil (Field)	Yes (MRIDs 46715228, 46715229) NA NA
Field Dissipation Studies 164-1 Terrestrial 164-2 Aquatic 164-3 Forestry 164-4 Combination and tank mixes 164-5 Terrestrial (Long-Term)	No NA NA NA NA
Accumulation Studies 165-1 In Confined Rotational Crops 165-2 In Field Rotational Crops 165-3 In Irrigated Crops 165-4 In Fish 165-5 Aquatic Non-Target Organisms	NA NA NA No NA

1. MRID 124063 is classified as unacceptable

2. MRID 124063 is classified as unacceptable

3. MRID 46715225 is classified as supplemental because all transformation > 10% may not have been identified.

4. MRID 46715227 is classified as supplemental because all transformation > 10% may not have been identified.