Data Evaluation Report on the Acute Toxicity of Florasulam Degradate to *Daphnia magna*

PMRA Submission Number {.....} EPA MRID Number 468083-14

Data Requirement:

PMRA Data Code	9.3.2
EPA DP Barcode	D329529
OECD Data Point	{.....}
EPA MRID	468083-14
EPA Guideline	72-2

Test material: XDE-570 **Purity:** 99.2%
Common name florasulam
Chemical name: IUPAC 2',6',8-trifluoro-5-methoxy[1,2,4]triazolo[1,5-*c*]pyrimidine-2-sulfonanilide
CAS name *N*-(2,6-difluorophenyl)-8-fluoro-5-methoxy[1,2,4]triazolo[1,5-*c*]pyrimidine-2-sulfonamide
CAS No. 145701-23-1
Synonyms

Primary Reviewer: Peter Takacs
PMRA **Date:** 7.25..2000

Primary Reviewer: Brian D. Kiernan, Biologist **Date:** 3.06.2007
EPA

10/8/07

Reference/Submission No.: {.....}

Company Code	{.....}	[For PMRA]
Active Code	{.....}	[For PMRA]
Use Site Category:	{.....}	[For PMRA]
EPA PC Code	129108	

Date Evaluation Completed: 3.06.2007

CITATION: Kirk, H.D., Landre, A.M. and Hugo, J.M. (1996): Evaluation of the acute toxicity of 5-hydroxy-XDE-570 herbicide to the daphnid, *Daphnia magna* Straus. Dow AgroSciences, unpublished report No. DECO-ES-3117, 23 August 1996.

DISCLAIMER: This document provides guidance for EPA and PMRA reviewers on how to complete a data evaluation record after reviewing a scientific study concerning the acute toxicity of a pesticide to freshwater invertebrates. It is not intended to prescribe conditions to any external party for conducting this study nor to establish absolute criteria regarding the assessment of whether the study is scientifically sound and whether the study satisfies any applicable data requirements. Reviewers are expected to review and to determine for each study, on a case-by-case basis, whether it is scientifically sound and provides sufficient information to satisfy applicable data requirements. Studies that fail to meet any of the conditions may be accepted, if appropriate; similarly, studies that meet all of the conditions may be rejected, if appropriate. In sum, the reviewer is to take into account the totality of factors related to the test methodology and results in determining the acceptability of the study.

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EXECUTIVE SUMMARY:

An acute 48-hour static toxicity study was conducted to determine the effects of 5-hydroxy-XDE-570 (a major transformation of XDE-570) on daphnids (*Daphnia magna*). Three groups of ten 1_{st} instar daphnids were exposed to a single concentration of XDE-570 of the measured average of 96.7 mg ai/L under a 16 h light (2167 ± 151 lux):8 h dark photoperiod at 19 - 21 °C with dissolved oxygen levels of 8.6-8.8 mg O_2/L at a pH 6.3 to 7.6. The raw water from Lake Huron was adjusted to a hardness of 170 mg/L as $CaCl_3$ prior to autoclaving, cooling and aerating. Exposure levels were monitored and found that the test material was stable during the test. The study was conducted in compliance with EC method C2, Directive 92/69 and OECD Guideline No. 202 Part I and U.S. EPA FIFRA, Subdivision E, Guideline 72-2 (a) and the EPA GLP standards.

No mortality or sublethal effects were observed over 48 hours in this study. The 48-h LC50/EC50 and the NOEC values, therefore, were considered to be >96.7 mg a.i./L.

5-hydroxy-XDE-5703 is classified as practically non-toxic to daphnids in accordance with the classification system of the U.S. EPA.

This study is classified supplemental and is consistent with the guideline requirement for an acute daphnid toxicity study.

EFED accepts the PMRA DER in lieu of the generation of a new DER.

Results Synopsis

Test Organism Size/Age(mean weight or length):
Test Type: Static

EC_{50}: >96.7 mg a..i./L 95% C.I.: NA
NOAEC: 96.7 mg a..i./L
Endpoint(s) Affected: none

Appendix 9.3.2-2

PMRA Reviewer: Peter Takacs **27-July-2000**

STUDY TYPE: Daphnia sp. Acute Study
PMRA DATA CODE: 9.3.2-2
OECD Data Point: IIA 8.3.1 and IIA 8.3.1.1

TEST MATERIAL (PURITY): 5-hydroxy-XDE-570 (Florasulam) (97%)

SYNONYMS:

CITATION: Kirk, H.D., Landre, A.M. and Hugo, J.M. (1996): Evaluation of the acute toxicity of 5-hydroxy-XDE-570 herbicide to the daphnid, *Daphnia magna* Straus. Dow AgroSciences, unpublished report No. DECO-ES-3117, 23 August 1996.

SPONSOR: Dow AgroSciences Canada Inc. Suite 201, 1144 - 29th Avenue, N.E. Calgary, Alberta T2E 7P1

EXECUTIVE SUMMARY:

An acute 48-hour static toxicity study was conducted to determine the effects of 5-hydroxy-XDE-570 (a major transformation of XDE-570) on daphnids (*Daphnia magna*). Three groups of ten 1st instar daphnids were exposed to a single concentration of XDE-570 of the measured average of 96.7 mg ai/L under a 16 h light (2167 ± 151 lux):8 h dark photoperiod at 19 - 21 °C with dissolved oxygen levels of 8.6-8.8 mg O_2/L at a pH 6.3 to 7.6. The raw water from Lake Huron was adjusted to a hardness of 170 mg/L as $CaCl_3$ prior to autoclaving, cooling and aerating. Exposure levels were monitored and found that the test material was stable during the test. The study was conducted in compliance with EC method C2, Directive 92/69 and OECD Guideline No. 202 Part I and U.S. EPA FIFRA, Subdivision E, Guideline 72-2 (a) and the EPA GLP standards.

No mortality or sublethal effects were observed over 48 hours in this study. The 48-h LC50/EC50 and the NOEC values, therefore, were considered to be >96.7 mg a.i./L. The concentration of 5-hydroxy-XDE-570 tested (96.7 mg a.i./L) was equivalent to 38680 times the EEC for XDE-570 in water (0.0025 mg a.i./L), based on a single application at a rate of 7.5 g a.i./ha. Based on the results of this study, 5-hydroxy-XDE-570 would be classified as practically non-toxic to daphnids in accordance with the classification system of the U.S. EPA.

This study is classified acceptable and does satisfy the guideline requirement for an acute daphnia sp. toxicity study (PMRA DATA CODE: 9.3.2-2).

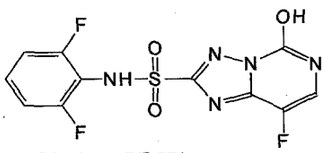
COMPLIANCE: Signed and dated GLP, Quality Assurance, Data Confidentiality, and Flagging statements were provided.

I. MATERIALS AND METHODS

GUIDELINE FOLLOWED: EC method C2, Directive 92/69 and OECD Guideline No. 202 Part I and U.S. EPA FIFRA, Subdivision E, Guideline 72-2 (a).

A. MATERIALS:

1. Test Material: 5-hydroxy-XDE-570
Description: technical herbicide, white powder.
Lot/Batch #: DECO-393-053
Purity: 97.0% a.i.
Stability of compound: not provided
CAS #: not provided
IUPAC name: 5-hyd DE-570, 2′,6′,8-trifluoro-5-hydroxy-s-triazolo[1,5-*c*]pyrimidine-2-sulphonanilide
Structure:



5-hydroxy DE-570

2. Test organism:
Species: *Daphnia magna*
Source: not provided
Acclimatization: Instars (less than 24 hrs old) were separated from adults. Daphnids were kept under 16 hr light/8 hr dark cycles at 20 °C.

B. STUDY DESIGN:

1. Experimental conditions:

a) Range-finding Study:
A 48 hour range finding study was conducted over a concentration range of 1, 10 and 100 mg/L. No adverse reactions were noted in the test orgnaisms.

b). Definitive Study

Table 1. Experimental Parameters

Parameter	Value	Remarks

Test vessel and number of replicates	3 replicates/treatment, 200 mL borosilicate jars were used	
Test concentrations (nominal)	100 mg a.i./L.	
Number of organisms per replicate	10	
Solvent	not provided	
Photoperiod	16 hr light/8 hr dark	
Temperature	19.0 to 21.0 °C	
Range for pH, dissolved oxygen	pH: 6.3 to 7.6 DO: 8.6 to 8.8 mg O_2/L	
Other parameters		

2. Observations:

Table 2: Observations

Criteria	Details	Remarks
Test duration	48 hrs	
Test dates: start end	May-14-1994 May-16-1994	
Observation intervals	day 0, 1, 2	
Observations at each time interval	mortality and immobility	
Others		

II. RESULTS AND DISCUSSION:

A. **Mortality:** No mortality or sublethal effects were observed at the nominal test concentration of 100 mg/L (mean measured: 96.7 mg/L) at 48 hours.

Table 3: Effect of 5-hydroxy-XDE-570 on mortality of *Daphnia magna*.

Treatment (measured concentration: mg a.i./L)	Observation period					
	Day 0		Day 1		Day 2	
	No Dead	% Mortality	No Dead	% Mortality	No Dead	% Mortality
Negative control	0	0	0	0	0	0
96.7	0	0	0	0	0	0

III. Study deficiencies: No deficiencies were noted in the study.

IV. Comments: The 48 hour EC_{50} for 5-hydroxy-XDE-570 must be in excess of 96.7 mg/L, the highest concentration tested.