Data Evaluation Report on the Acute Toxicity of Florasulam to Marine Shrimp

PMRA Submission Number {.....} EPA MRID Number 468083-18

Data Requirement:

PMRA Data Code	9.4.2
EPA DP Barcode	D329529
OECD Data Point	{.....}
EPA MRID	468083-18
EPA Guideline	72-3c

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:** 10.04.2000

Primary Reviewer: Brian D. Kiernan, Biologist, ERBIV **Date:** 2.07.2007
EPA

10/08/07

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

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

Date Evaluation Completed: 2.08.2007

CITATION: Ward, T.J., Magazu, J.P. and Boeri, R.L. (1995): XDE-570: Acute toxicity to the grass shrimp, *Palaemonetes pugio*. Dow AgroSciences, unpublished report No. 643-DO, 29 September 1995.

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 aquatic species. 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.

EXECUTIVE SUMMARY:

An acute 96h static toxicity study was conducted to determine the effects of XDE-570 on the salt water grass shrimp (*Palaemonetes pugio*). Three replicates of ten shrimp (mean wt 0.16g and mean length 27mm) were exposed to a 130 mg ai/L nominal solution (mean measured concentration 120 mg ai/L), prepared using natural sea water. The test was conducted at 22.1 to 22.6°C (mean 22.3°C) and pH 7.5-7.9 under a 16h light : 8h dark photoperiod with dissolved oxygen levels of 6-8.1 mg O_2/L (mean 6.7 mg O_2/L). The study was conducted in accordance with US EPA FIFRA, Subdivision E, Guideline 72-3 (c) and the EPA GLP standards.

The test material was stable during the 96-h test period. There was no mortality or other adverse reactions to exposure or control organisms and the 96-h LC_{50} and NOEC, were >130 mg/L and 130 mg/L ai, respectively. Sublethal effects were not observed. Based on the results of this study, XDE-570 is classified as practically non-toxic to *Palaemonetes pugio*.

This toxicity study is classified as **acceptable** and is sufficient to allow a risk assessment for acute toxicity of florasulam to estuarine/marine invertebrates.

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

Results Synopsis

Test Type: Static

EC_{50}: >120.mg a.i./L 95% C.I.: NA
NOAEC: 120 mg a.i./L
Endpoint(s) Affected: none

Appendix 9.4.2

PMRA Reviewer: Peter Takacs **Date Report Completed: 2-October-2000**

STUDY TYPE: Crustacean Acute Study;
PMRA DATA CODE: 9.4.2;
OECD Data Point IIA 8.11.1

TEST MATERIAL (PURITY): XDE-570 (99.2%)

SYNONYMS:DE-570, XR-570

CITATION: Ward, T.J., Magazu, J.P. and Boeri, R.L. (1995): XDE-570: Acute toxicity to the grass shrimp, *Palaemonetes pugio*. Dow AgroSciences, unpublished report No. 643-DO, 29 September 1995.

SPONSOR: The Dow Chemical company, Midland, Michigan.

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The test material was stable during the 96-h test period. There was no mortality or other adverse reactions to exposure or control organisms and the 96-h LC50 and NOEC, were > 130 mg/L and ≥130 mg/L a.i., respectively. Sublethal effects were not observed. Based on the results of this study, XDE-570 would be classified as practically non-toxic to *Palaemonetes pugio* 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 crustacean toxicity study (DATA CODE: 9.4.2);

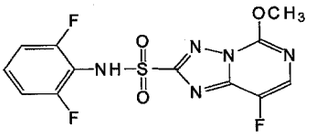
COMPLIANCE: Signed and dated GLP, Quality Assurance, Data Confidentiality, and Flagging statements were provided.

I. MATERIALS AND METHODS

GUIDELINE FOLLOWED: US EPA FIFRA, Subdivision E, Guideline 72-3 (c).

A. MATERIALS:

1. Test Material: XDE-570 (99.2%)
Description: technical herbicide, white powder.
Lot/Batch #: TSN 100298
Purity: 99.2 % a.i.
Stability of compound: not provided
CAS #:145701-23-1
IUPAC name: 2′,6′,8-trifluoro-5-methoxy-s-triazolo[1,5-c]pyrimidine-2-sulphonanilide
Structure:



2. Test organism: grass shrimp
Species: juvenile *Palaemonetes pugio*
Source: Aquatic Research Organisms, Hampton, New Hampshire
Acclimatization: 14 days

B. STUDY DESIGN:

1. Experimental conditions:

a) Range-finding Study: A preliminary 96 hour static test was conducted with a nominal concentration of 130 mg a.i./L and a control group. 100% survival was observed at the end of the study.
b.) Definitive Study: The definitive study was also a 96 hour static exposure with a nominal concentration of 130 mg/L and a control. Three replicates were used per treatment and control, each having 10 organisms.

Table 1. Experimental Parameters

Parameter	Value	Remarks
Test vessel and number of replicates	20 L glass aquaria 3 replicates per treatment	15 L sterilized salt water solution
Test concentrations	130 mg a.i./L*	(120 mg/L, mean measured)
Number of organisms per replicate	10	
Solvent	natural sea water	17 ppt
Photoperiod	16 hour light, 8 hour dark	
Temperature	22.1-22.6 °C	
Range for pH, dissolved oxygen	pH: 7.5-7.9 DO: 6.0-8.1	
Other parameters		

* The concentration used in the study is five orders of magnitude greater than the EEC based on a single application of 7.5 g a.i./ha.

2. Observations:

Table 2: Observations

Criteria	Details	Remarks
Test duration	96 hours	
Test dates: start end	1-June-1995 5- June-1995	
Observation intervals	days 0, 2 and 4 for exposure concentration, and 3, 24, 48, 72 and 96 hours for mortality and abnormal behaviour	
Observations at each time interval	mortality and abnormal behaviour	
Others		

II. RESULTS AND DISCUSSION:

A. Mortality: As there was no mortality among the treated shrimp or the control group, a 96

hr LC50 could not be determined but must be in excess of the nominal test concentration of 130 mg a.i./L (120 mg/L, mean measured) of XDE-570. The NOEC is ≥ 130 mg/L.

Table 3: Effect of XDE-570 on mortality of *Palaemonetes pugio*.

Treatment (measured mg a.i./L)	**Observation period**			
	Day 1		**Day 4**	
	No Dead	**% Mortality**	**No Dead**	**% Mortality**
Negative control	0	0	0	0
120	0	0	0	0

III. Study deficiencies: There were no deficiencies noted in this study.