

US EPA ARCHIVE DOCUMENT

Pesticide Name, Identification Number, and Its Physical/Chemical Properties			
Common Name	Flumioxazin		
PC Code	129034		
Chemical Name of the Test Substance			
IUPAC	N-(7-fluoro-3,4-dihydro-3-oxo-4-prop-2-ynyl-2H-1,4-benzoxazin-6-yl) cyclohex-1-ene-1,2-dicarboxamide		
CAS	2-[7-Fluoro-3,4-dihydro-3-oxo-4-(2-propynyl)-2H-1,4-benzoxazin-6-yl]-4,5,6,7-tetrahydro-1H-isoindole-1,3(2H)-dione		
CAS Number	103361-09-7		
Chemical Structure	See back		
Empirical Formula	-		
Molecular Formula	C ₁₉ H ₁₅ FN ₂ O ₄		
Molecular Weight (g/mole)	354.3		
SMILES Code	-		
	Temperature (° C)	Value	Source/Comments
Solubility (mg/L)			
Water			
Solvent A			
Solvent B			
Solvent C			
Specific Gravity			
Kow			
Henry's Law Constant (atm-m ³ /mol)			
Measured			
Estimated			
Vapor Pressure (mmHg)			
Dissociation Constant			
pKa1			
pKa2			



pKb1			
pKb2			
Boiling Point (° C)			
Melting Point (° C)			

Anaerobic Aquatic Metabolism (162-3)		
Acceptability of the Study	Acceptable	
Purpose of the Study	Registration (new use)	
Common Name for the Test Substance	Flumioxazin	
PC Code	129034	
If test substance is a degradate, provide parent's common name	-	
If test substance is a degradate, is it also a registered pesticide (give the common name)?	-	
Chemical Name for the Test Substance		
IUPAC	N-(7-fluoro-3,4-dihydro-3-oxo-4-prop-2-ynyl-2H-1,4-benzoxazin-6-yl)cyclohex-1-ene-1,2-dicarboxamide	
CAS	2-[7-Fluoro-3,4-dihydro-3-oxo-4-(2-propynyl)-2H-1,4-benzoxazin-6-yl]-4,5,6,7-tetrahydro-1H-isoindole-1,3(2H)-dione	
CAS Number	103361-09-7	
Chemical Structure	See back	
Study Temperature (°C)	25	
Solid Phase (if solid and aqueous phases were not reported separately, report the Combined Phase)		
Half-life (days)	48.5	
Soil Texture	Clay	
Sand (%)	14	
Silt (%)	28	
Clay (%)	58	
Organic Matter (%)	5	
Organic Carbon (%)	3	
pH	6.4	
Soil Mapping Unit	-	
Soil Taxonomy Classification	-	

Initial Concentration (mg/kg)	-				
Major Degradate(s)	Common Name	Chemical Structure	Chemical Name		CAS Number
			IUPAC	CAS	
Degradate #1	APF	See back	6-Amino-7-fluoro-4-(2-propenyl)-2H-1,4-benzoxazin-3(4H)-one	-	-
Degradate #2	DAPF	See back	-	-	-
Major Degradate #1 (APF):	Days to Maximum Concentration			21	
	Maximum Concentration mg/kg			0.664	
	Maximum Concentration % of applied			19.3	
	Half-life (days)			-	
Major Degradate #2 (DAPF):	Days to Maximum Concentration			360	
	Maximum Concentration mg/L			0.462	
	Maximum Concentration % of applied			13.5	
	Half-life (days)			-	
Aqueous Phase					
Half-life (days)	79.7				
Initial Concentration (mg/L)	0.858				
Major Degradate(s)	Common Name	Chemical Structure	Chemical Name		CAS Number
			IUPAC	CAS	
Degradate #1	APF	See back	6-Amino-7-fluoro-4-(2-propenyl)-2H-1,4-benzoxazin-3(4H)-one	-	-
Major Degradate #1 (APF):	Days to Maximum Concentration			2	
	Maximum Concentration mg/L			0.421	
	Maximum Concentration % of applied			49.1	
	Half-life (days)			-	

MRID	45914602
Source	DER
Date DER Reviewed	July 15, 2003 by Dynamac Corporation.
Comments	[Phenyl-U- ¹⁴ C] label. Study conducted for 360 days. Pond water and sediment collected from Greenville, Mississippi. In water, redox potentials were -231.5 to -160.8 mV and oxygen content was 0.00 ppm. Degradate "SAT-482-HA" was maximum of 16.9% of applied at 182 days in total system.

Anaerobic Aquatic Metabolism (162-3)		
Acceptability of the Study	Acceptable	
Purpose of the Study	Registration (new use)	
Common Name for the Test Substance	Flumioxazin	
PC Code	129034	
If test substance is a degradate, provide parent's common name	-	
If test substance is a degradate, is it also a registered pesticide (give the common name)?	-	
Chemical Name for the Test Substance		
IUPAC	N-(7-fluoro-3,4-dihydro-3-oxo-4-prop-2-ynyl-2H-1,4-benzoxazin-6-yl)cyclohex-1-ene-1,2-dicarboxamide	
CAS	2-[7-Fluoro-3,4-dihydro-3-oxo-4-(2-propynyl)-2H-1,4-benzoxazin-6-yl]-4,5,6,7-tetrahydro-1H-isoindole-1,3(2H)-dione	
CAS Number	103361-09-7	
Chemical Structure	See back	
Study Temperature (°C)	25	
Solid Phase (if solid and aqueous phases were not reported separately, report the Combined Phase)		
Half-life (days)	42.0	
Soil Texture	Clay	
Sand (%)	14	
Silt (%)	28	
Clay (%)	58	
Organic Matter (%)	5	
Organic Carbon (%)	3	
pH	6.4	
Soil Mapping Unit	-	
Soil Taxonomy Classification	-	

Initial Concentration (mg/kg)	-				
Major Degradate(s)	Common Name	Chemical Structure	Chemical Name		CAS Number
			IUPAC	CAS	
Degradate #1	HPA	See back	-	-	-
Major Degradate #1 (HPA):	Days to Maximum Concentration			42	
	Maximum Concentration mg/kg			0.582	
	Maximum Concentration % of applied			17.0	
	Half-life (days)			-	
Aqueous Phase					
Half-life (days)	87.7				
Initial Concentration (mg/L)	0.858				
Major Degradate(s)	Common Name	Chemical Structure	Chemical Name		CAS Number
			IUPAC	CAS	
Degradate #1	THPA	See back	-	-	-
Degradate #2	HPA	See back	-	-	-
Major Degradate #1 (THPA):	Days to Maximum Concentration			1	
	Maximum Concentration mg/L			0.360	
	Maximum Concentration % of applied			41.9	
	Half-life (days)			-	
Major Degradate #2 (HPA):	Days to Maximum Concentration			360	
	Maximum Concentration mg/L			0.625	
	Maximum Concentration % of applied			72.8	
	Half-life (days)			-	
MRID	45914602				
Source	DER				

Date DER Reviewed	July 15, 2003 by Dynamac Corporation.
Comments	[Tetrahydrophthaloyl- ¹⁴ C] label. Study conducted for 360 days. Pond water and sediment collected from Greenville, Mississippi. In water, redox potentials were -237.3 to -184.0 mV and oxygen content was 0.00 ppm.

Contractor submittal date: July 15, 2003.

Chemical structures of the parent and major degradates identified are included on the following pages.

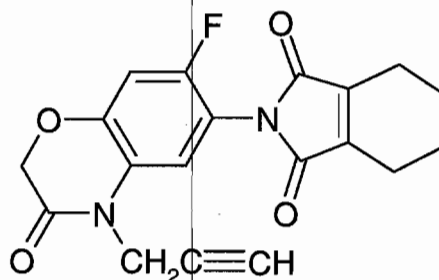
Chemical Structures of Parent and Major Degradates Identified in the Study

Parent compound: Flumioxazin

IUPAC name: N-(7-fluoro-3,4-dihydro-3-oxo-4-prop-2-ynyl-2H-1,4-benzoxazin-6-yl)cyclohex-1-ene-1,2-dicarboxamide

CAS name: 2-[7-Fluoro-3,4-dihydro-3-oxo-4-(2-propynyl)-2H-1,4-benzoxazin-6-yl]-4,5,6,7-tetrahydro-1H-isoindole-1,3(2H)-dione

CAS #: 103361-09-7

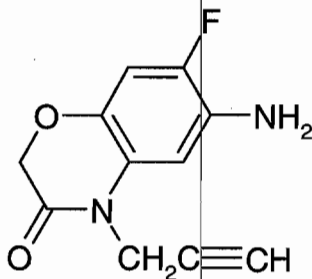


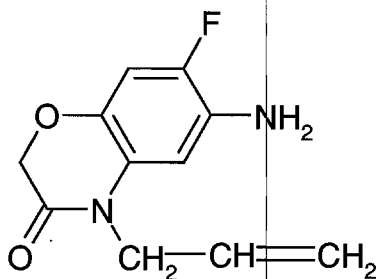
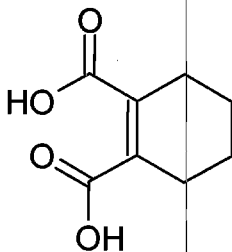
Degradate 1: APF

IUPAC name: 6-Amino-7-fluoro-4-(2-propenyl)-2H-1,4-benzoxazin-3(4H)-one

CAS name: NA

CAS #: NA



Degradate 2: DAPF (Dihydro-APF)**IUPAC name:** NA**CAS name:** NA**CAS #:** NA**Degradate 3: THPA****IUPAC name:** NA**CAS name:** NA**CAS #:** NA**Degradate 4: HPA****IUPAC name:** NA**CAS name:** NA**CAS #:** NA