128701
Shaughnessy Number

Completed 4-11-84 CMN
Revised 2-12-85 CMN
11-27-85 CMN

EEB CHEMICAL PROFILE

Pesticide Name: HOE-33171 (Fenoxaprop-ethyl)

100 Fish and Wildlife Toxicology

100.1 Minimum Requirements

100.1.1 Avian Acute Oral LD50

Species	Formulation	Results LD50	Category	Reference
Bobwhite quail	96.6%	>2510 mg/kg	Core	071796
Mallard duck	96.6%	>2510 mg/kg	Invalid (regurgitation)	071796
Japanese quail				
male	Tech.	>5000 mg/kg	Supplemental	071796
female	Tech.	>5000 mg/kg	Supplemental	071796

100.1.2 Avian Dietary LC50

Species	Formulation	Results (ppm)	Category	Reference
Mallard duck	96.6%	>5620	Core	071796
Bobwhite quail	96.6%	>5620	Core	071796

100.1.3 Fish Acute LC50

Species	Formulation	LC50 (ppm)	Category	Reference
Brown trout	96.0%	0.48(0.45-0.52)	Core	071796
Bluegill	95.8%	0.31(0.26-0.35)	Core	071796
Pumpkinseed sunfish	96.0%	0.36(0.32-0.41)	Core	071796
Golden orfe	Tech.	>0.8	Invalid	071796
Rainbow trout	E.C., 12.5%	3.38(3.12-3.66)	Core/formulation	071796
Pumpkinseed sunfish	E.C., 12.5%	3.34(3.08-3.71)	Core/formulation	071796
Fathead minnow	E.C., 12.5%	7.12(6.51-7.82)	Core/formulation	071796
Bluegill	E.C., 9.5%	2.86(2.4-3.2)	Core/formulation	072310
Rainbow trout	E.C., 9.5%	6.68(6.0-7.5)	Core/formulation	072310

100.1.4 Aquatic Invertebrate LC50

Species	Formulation	LC50 (ppm)	Category	Reference
Daphnia magna	96.0%	3.18(1.79-7.36)	Core	071796
Daphnia magna	E.C., 12.5%	11.15(9.38-13.36)	Core/formulation	071796
Daphnia magna	E.C., 95%	26.84(21.3-33.9)	Core/formulation	072310
Crayfish	Tech., 96.5%	1.1	Supplemental	255859
Crayfish	E.C., ?%	3.1	Invalid repairable to supplemental	255859

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100.1.4 Aquatic Invertebrate LC_{50}

100.2 Additional Terrestrial Laboratory Tests

Avian Reproduction, see DERS

100.2.1 Beneficial Insects

Species	Formulation	Results	Category	Reference
Honeybee	Tech	No sig. mortality 100 ug/bee	Scientifically sound	071796

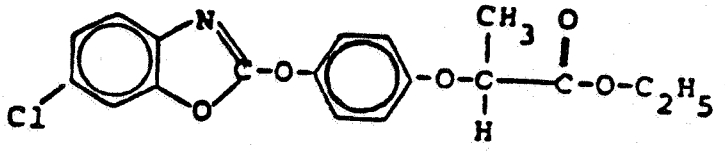
01. See Attached Tox. Br. one liners.

102 Physical and Chemcial Properties

102.1 Chemical Name

Ethyl 2-[4-[(6-chloro-2-benzoxazolyl)oxy]phenoxy]propanoate

102.2 Structural Formula



102.3 Common Name

HOE - 33171
Fenoxaprop-ethyl(proposed name)

102.4 Trade Name

Whip

102.5 Molecular Weight

361.8

102.6 Physical State

Coarse powder, flakes or solidified melt, beige to brown in color, weak aromatic odor. Melting point: 358-360 K (85-87 C). Boiling point >300°C. Density: 1.3 gm/cm^3 at 293 K (20°C.

102.7 Properties

102.7.1 Solubility (at 20°C, except where noted)

Water (at 25°C)	:	0.9 mg/l (pH 7)
Acetone	:	51 mg/100 ml
Ethanol	:	2 gm/100 ml
Toluene	:	34 gm/100 ml
Cyclohexane	:	1.5 gm/100 ml
Hexane	:	0.5 gm/100 ml
Ethylacetate	:	24 gm/100 ml
1-Octanol	:	2 gm/100 ml
Sesamoil	:	2.5 gm/100 ml

102.7.2 Octanol/Water Partition Coefficient

P = 19,100 (18,800-19,300)

102.7.3 Soil Adsorption Coefficient K_d

102.7.4 Vapor Pressure

0.187×10^{-7} mbar at 20°C
0.406×10^{-6} mbar at 40°C
0.609×10^{-5} mbar at 60°C
0.672×10^{-4} mbar at 80°C
0.573×10^{-3} mbar at 100°C

103 Behavior in the Environment *See also conclusions from EAB review, attached.*

103.1 Soil

Aerobic soil metabolism studies indicated half-lives for the parent of < 1 day and 5-14 days for the major metabolite. Three different soils were used. The solvent extracted ^{14}C decreased to 37.1% to 10.9% by day 32 (expressed as % of applied), while the residues bound to soil increased at each sampling, with a range for the soils of 43.1% to 64.6% on day 32.

HOE-033171 in soil TLC was found to range from immobile to intermediate mobility with respect to its capacity to leach in the soil types tested (two silt loam soils and one silty clay). (From EAB review 11-3-83.)

A rotational crop study performed with radio-labeled HOE-033171 showed measurable activity present in the soil (0-2" segment) 480 days (16 months) after treatment. (From EAB review 1-4-84.)

103.2 Water

HOE-33171 was found to be stable to hydrolysis at 20°C in pH 5 and pH 7 solutions, but rapidly hydrolyzed in pH 9 buffer. (From EAB review 11-3-83.)

Aerobic Aquatic Metabolism: A system consisting of Erlenmayer flasks and a carbosorb CO_2 trap was used to test the aerobic aquatic metabolism of soil and water from a rice field (Mississippi Research Farm of American Hoechst). The soil/sediment was at pH 6.4 and 1.6% O.M., 7.2% sand, 70.4% silt, 22.4% clay. Under the experimental conditions of the study, HOE 033171 degraded rapidly to the acid and ultimately to mineralization (CO_2 evolution) of the chlorophenyl ring. While no half-life was given for the parent, it was possible to use a linear/log regression analysis program to obtain a half-life of 3.8 days. (From EAB Review April 10, 1984.)

103.3 Plant

Samples of representative rotation crops did not show significant uptake of radiolabeled HOE-33171 after 120 and 364 days. (From EAB review 1-4-84.)

103.4 Animal

A non-radiolabeled study using pumpkinseed sunfish in a flow-through system indicated a maximum bioaccumulation factor of 384. (from EAB review 2-17-84). A new, radio-labeled study will be submitted at a later date.

In this non-radiolabeled study, pumpkinseed sunfish rapidly reached maximum accumulation by day 3 and declined to plateau levels thereafter. Depuration resulted in loss of residues. (From EAB Review April 10, 1984.)

104 Uses and Special Concerns

An EUP has been granted for the use of Whip 1EC (12.50 %) on soybeans and for Whip 0.75 EC (9.5%) on rice.