

Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY

ISOXABEN

Last Update on January 11, 1990

[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

Common Name:ISOXABEN

Smiles Code:

PC Code # :125851

CAS #:82558-50-7

Caswell #:

Chem. Name :N-[3-(1-ETHYL-1-METHYLPROPYL)-5-ISOXAZOLYL]-2,6-DIMETHOXY-
BENZAMIDE

Action Type:HERBICIDE

Trade Names:EL-107; FLEXIDOR

(Formul'tn):50% SUSP. CONC. (UK); 12.5% SUSP. CONC. (FRANCE)

Physical State:

Use :CONTROLS NUMEROUS BROADLEAF WEED SPECIES WHEN INCORPORATED
Patterns :OR APPLIED TO THE SOIL SURFACE PREEMERGENCE TO WEEDS
(% Usage) :
:

Empirical Form: $C_{18}H_{24}N_2O_4$
Molecular Wgt.: 332.39 Vapor Pressure: E Torr
Melting Point : °C Boiling Point: °C
Log Kow : 2.64 pKa: @ °C
Henry's : E Atm. M3/Mol (Measured)

Solubility in ...					Comments
Water	E	ppm	@	°C	
Acetone	E	ppm	@	°C	
Acetonitrile	E	ppm	@	°C	
Benzene	E	ppm	@	°C	
Chloroform	E	ppm	@	°C	
Ethanol	E	ppm	@	°C	
Methanol	E	ppm	@	°C	
Toluene	E	ppm	@	°C	
Xylene	E	ppm	@	°C	
	E	ppm	@	°C	
	E	ppm	@	°C	

Hydrolysis (161-1)

[V] pH 5.0:STABLE

[V] pH 7.0:STABLE

[V] pH 9.0:STABLE

[] pH :

[] pH :

[] pH :

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Photolysis (161-2, -3, -4)

[S] Water:7-15 DAYS IN NATURAL SUN

[] :
[] :
[] :

[] Soil :

[] Air :

Aerobic Soil Metabolism (162-1)

[V] 4.3 MONTHS IN CLAY LOAM

[V] 5.6 MONTHS IN LOAM

[V] 10.6 MONTHS IN SANDY LOAM

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Anaerobic Soil Metabolism (162-2)

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Anaerobic Aquatic Metabolism (162-3)

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Aerobic Aquatic Metabolism (162-4)

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Soil Partition Coefficient (Kd) (163-1)

[]	Sd	Si	Cl	%OM	pH	Kads
[V]	92	5	3	1.0	8.1	8.4
[V]	62	23	15	1.2	7.2	10
[V]	38	41	21	1.9	6.1	16
[V]	30	37	33	3.1	6.4	30
[]						

Soil Rf Factors (163-1)

[V] SLIGHTLY MOBILE IN COLUMN
[] LEACHING OF 20" WATER OVER 10
[] DAYS. <0.31% OF APPLIED
[] RADIOACT. WAS FOUND IN LEACH-
[] ATE FROM COLUMNS TREATED WITH
[] UNAGED ISOXABEN.

Laboratory Volatility (163-2)

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Field Volatility (163-3)

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Terrestrial Field Dissipation (164-1)

[S] T1/2 = 30-40 DAYS IN SPRING-TREATED SAND SOIL IN FLORIDA
[] SND LOAM SOIL IN INDIANA. PARENT WAS <.02 LB AIA IN SAMPLES
[] FROM THE 6-12, 12-18, AND 18-24" DEPTHS AT ALL SITES. THE
[] DEGRADATE 201469 WAS <.09 LB AIA IN THE 0-6" DEPTH AT ALL
[] FOUR SITES AND <.01 LB AIA AT GREATER DEPTHS.
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Aquatic Dissipation (164-2)

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Forestry Dissipation (164-3)

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Long-Term Soil Dissipation (164-5)

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Accumulation in Rotational Crops, Confined (165-1)

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Accumulation in Rotational Crops, Field (165-2)

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Accumulation in Irrigated Crops (165-3)

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Bioaccumulation in Fish (165-4)

[V] BLUEGILL SUNFISH BCF: EDIBLE 14 X; NON-EDIBLE 134 X;
[] WHOLE 70

Bioaccumulation in Non-Target Organisms (165-5)

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Ground Water Monitoring, Prospective (166-1)

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Ground Water Monitoring, Small Scale Retrospective (166-2)

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Ground Water Monitoring, Large Scale Retrospective (166-3)

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Ground Water Monitoring, Miscellaneous Data (158.75)

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Field Runoff (167-1)

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Surface Water Monitoring (167-2)

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Spray Drift, Droplet Spectrum (201-1)

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Spray Drift, Field Evaluation (202-1)

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Degradation Products

Degradate 201469 is slightly mobile in column studies and appears to be more mobile than the parent.

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Comments

In fish study, the residual isoxaben was 52% in edible tissues, 17% in non-edible tissues.

Isoxaben is persistent based on hydrolysis, field dissipation, and aerobic soil metabolism; it does not appear to be mobile based on column leaching, low solubility, and limited adsorption/desorption data.

Isoxaben residues volatilized at approx. .007 ppm/wk from loam soil treated at 1 ppm; volatiles totalled 12-15% of appl. radioactivity during a 36-week period.

References: FARM CHEMICALS HANDBOOK; EPA REVIEWS
Writer : PJH