Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
METALAXYL
Last Update on August 9, 1993
[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

Common Name:METALAXYL
Smiles Code:c(cc(C)c1N(C(=O)COC)C(C(=O)OC)C)cc1C
PC Code # :113501 CAS #:57837-19-1 Caswell #:

Chem. Name :N-(2,6-DIMETHYLPHENYL)-N-(METHOXYACETYL)-ALANINE METHYL ESTER
Action Type:FUNGICIDE

Trade Names:APRON 25WP; CGA 48988; RIDOMIL
(Formul'tn):EC 2 LBS/GAL; FLOWABLE CONC.
Physical State:

Use :CONTROL OF SOIL-BORNE DISEASES CAUSED BY PYTHIUM AND PHYTO-
Patterns :PHORA, AND FOLIAR DISEASES CAUSED BY DOWNY MILDEW.
(% Usage) :
:

Empirical Form: $C_{15}H_{21}NO_4$
Molecular Wgt.: 279.34 Vapor Pressure: 2.20E -6 Torr
Melting Point : 71.8-72.C °C Boiling Point: °C
Log Kow : pKa: @ °C
Henry's : E Atm. M3/Mol (Measured) 1.14E-10 (calc'd)

Solubility in ...					Comments
Water	7.10E	3	ppm	@20.0 °C	
Acetone	E		ppm	@ °C	
Acetonitrile	E		ppm	@ °C	
Benzene	55.00E		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 5.0:200 DA
[V] pH 7.0:200 DA
[V] pH 9.0:115 DA
[ ] pH :
[ ] pH :
[ ] pH :

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Photolysis (161-2, -3, -4)
[V] Water: 1 WK
[ ] :
[ ] :
[ ] :

[V] Soil : STABLE
[ ] Air :

Aerobic Soil Metabolism (162-1)
[S] 7 WK (SOIL?)
[V] 40 DAYS
[ ]
[ ]
[ ]
[ ]
[ ]

Anaerobic Soil Metabolism (162-2)
[V] 60 DAYS
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Anaerobic Aquatic Metabolism (162-3)
[V] 21.7 AND 26.9 DAYS IN SEDIMENT AND WATER PHASES, RESPECTIVELY.
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Aerobic Aquatic Metabolism (162-4)
[S] 55.11 DAYS IN SOIL + WATER. 70 DAYS IN SOIL AND 41 DAYS IN H2O.
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

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Soil Partition Coefficient (Kd) (163-1)
[S] 0.43-0.48 SAND
[S] 0.87 SILT LOAM
[S] 1.40 SANDY CLAY LOAM
[ ]
[ ]
[ ]

Soil Rf Factors (163-1)
[S] 70% IN LEACHATE
[ ]
[ ]
[ ]
[ ]
[ ]

Laboratory Volatility (163-2)
[S] LOSS DUE TO VOLATILIZATION SHOULD BE <0.5%.
[ ]

Field Volatility (163-3)
[ ]
[ ]

Terrestrial Field Dissipation (164-1)
[S] 2 WK (SOIL?). MAJOR DEGRADATE PEAKED DURING THE FIRST
[ ] MONTH AT 20%, DECLINED TO 0.5% OF THE APPLIED AT A YEAR.
[ ] HOWEVER, IN ANOTHER STUDY THE AMT. REMAINING IN A YEAR WAS
[ ] 23% OF THAT APPLIED.
[ ]
[ ] 3 STUDIES PRODUCED HALF-LIVES OF 38, 50 AND 56 DAYS. PARENT AND
[ ] CGA LEACHED TO 36-48" SOIL DEPTH
[ ]
[ ]
[ ]

Aquatic Dissipation (164-2)
[S] 20 DAYS FROM PADDY WATER AND 24 DAYS FROM SOIL.
[S] 5 DAYS FROM PADDY WATER AND 11 DAYS FROM SOIL.
[ ]
[ ]
[ ]
[ ]

Forestry Dissipation (164-3)
[ ]
[ ]

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Long-Term Soil Dissipation (164-5)
[ ]
[ ]

Accumulation in Rotational Crops, Confined (165-1)
[S] LETTUCE-.11 PPM; OATS (WHOLE PLANT) .33;
[ ] CORN .06 PPM; SOYBEANS 0.8 PPM; SUGARBEETS .16 PPM.

Accumulation in Rotational Crops, Field (165-2)
[S] PLANTED IN ROTATION TO POTATOES: CORN .02 PPM;
[ ] SUGARBEETS <.05 IN ROOTS; SOYBEANS .83 PPM

Accumulation in Irrigated Crops (165-3)
[ ]
[ ]

Bioaccumulation in Fish (165-4)
[ ] BLUEGILL 1X EDIB; 14X VISC; 6X WHOLE; RAPID DEPURATION.
[ ] CATFISH 1X EDIB; 1X VISC; 1X WHOLE; RAPID DEPURATION.

Bioaccumulation in Non-Target Organisms (165-5)
[S] NO ADVERSE EFFECTS EXPECTED ON AVIAN, MAMMALIAN,
[ ] OR FRESHWATER AQUATIC SPECIES.

Ground Water Monitoring, Prospective (166-1)
[ ]
[ ]
[ ]
[ ]

Ground Water Monitoring, Small Scale Retrospective (166-2)
[ ] Requirement for ground-water monitoring studies has been
[ ] waived pending regulatory action.
[ ]
[ ]

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

Ground Water Monitoring, Miscellaneous Data (158.75)
[S] Metalaxyl was reported in ground water in Florida,
[ ] North Carolina, and Tennessee. Concentrations range from 0.27
[ ] 236 ppb.

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Field Runoff (167-1)
[ ]
[ ]
[ ]
[ ]

Surface Water Monitoring (167-2)
[ ]
[ ]
[ ]
[ ]

Spray Drift, Droplet Spectrum (201-1)
[ ]
[ ]
[ ]
[ ]

Spray Drift, Field Evaluation (202-1)
[ ]
[ ]
[ ]
[ ]

Degradation Products

(N-(2,6-dimethylphenyl)-N-(2'-methoxyacetyl) alanine is the major degradate.

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Comments

Parent compound leached rapidly in sand soils with up to 92% of radioactivity recovered in leachate. In SdClLm soils, majority of radioact. was in 6-12 cm soil with less than 0.4% in leachate. Soil Koc = 16. Up to 31% of CGA-62826 was detected in leachates.

References: EFGWB REVIEWS
Writer : SJS, PJH, SLL, EW, RJM