








Fungicide Resistance (FRAC) Classification	4
Physical State	Colourless crystals

Formulations:

Property 	Value
Example manufacturers of products using this active	<ul style="list-style-type: none"> • Fargro • Syngenta • Clayton
Example products using this active	<ul style="list-style-type: none"> • Folio • Fubol Gold • SL567 • Wakil XL
Associated substances	<ul style="list-style-type: none"> • chlorothalonil
UK LERAP status	LERAP Category B (may vary across products)
Formulation and application details	Often supplied as a soluble concentrate that is mixed with water and used as a spray.


ENVIRONMENTAL FATE

Property 	Value	Source/Quality Score/Other Information 	Interpretation 
Solubility - In water at 20°C (mg l ⁻¹)	26000	A5	High
Solubility - In organic solvents at 20°C (mg l ⁻¹)	59000	A5 - n-Hexane	-
	Miscible	A5 - Toluene	-
	Miscible	A5 - Methanol	-
	Miscible	A5 - Acetone	-
Melting Point (°C)	-38.7	L3	-
Boiling Point (°C)	Decomposes before boiling	A5	-
Degradation point (°C)	-	-	-
Flashpoint (°C)	179	A5	-
Octanol-water partition coefficient at pH 7, 20°C	P: 5.13 X 10 ⁰¹	Calculated	-
	Log P: 1.71	A5	Low
Bulk density (g ml ⁻¹)/Specific gravity	1.13	A5	-
Dissociation constant (pKa) at 25°C	Not applicable Note: No dissociation	A5	-
Vapour pressure at 25°C (mPa)	3.3	A5	Volatile

Henry's law constant at 25°C (Pa m ³ mol ⁻¹)	3.50 X 10 ⁻⁰⁵	A5	Non-volatile	
Henry's law constant at 20°C (dimensionless)	1.46 X 10 ⁻⁰⁸	Calculated	Non-volatile	
Soil degradation (days) (aerobic)	DT50 (typical):	39	A5	Moderately persistent
	DT50 (lab at 20°C):	33	A5	Moderately persistent
	DT50 (field):	39	A4	Moderately persistent
	DT90 (lab at 20°C):	45	A5	-
	DT90 (field):	128	A5	-
Note:	EU dossier lab studies DT50 range 7-58 days, DT90 range 35.7-140 days, field study DT50 range 20-87 (USA), DT90 range 64.7-288.7 days			
Aqueous photolysis DT50 (days) at pH 7	Value:	Stable	A5	Stable
	Note:	-		
Aqueous hydrolysis DT50 (days) at 20°C and pH 7	Value:	Stable	A5	Very persistent
	Note:	Stable at all pH values		
Water-Sediment DT50 (days)	47.5	A5	Moderately fast	
Water phase only DT50 (days)	47.5	A5	Stable	
GUS leaching potential index 	1.88	Calculated	Transition state	
SCI-GROW groundwater index (µg l ⁻¹) for a 1 kg ha ⁻¹ or 1 l ha ⁻¹ application rate 	Value:	6.44 X 10 ⁻⁰²	Calculated	-
	Note:	-		
Potential for particle bound transport index 	-	Calculated	Low	
Koc - Organic-carbon sorption constant (ml g ⁻¹)	660	A5	Slightly mobile	
	pH sensitivity: Yes - relationship undefined in dossier Note: EU dossier Koc range 20-1299 mL/g			
Freundlich isotherm	Kf:	3.85	A5	-
	1/n:	-	-	-
	Note	EU dossier Kf range 0.1-7.6 mL/g		
Maximum UV-vis absorption L mol ⁻¹ cm ⁻¹	[266nm = 512, 274nm = 477, no absorption 290-750nm]	A5	-	

Key metabolites:




Metabolite	Formation Medium	Estimated Maximum Occurrence Fraction	91/414 Relevancy 
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N-(2,6-dimethylphenyl)-N-(methoxyacetyl)alanine (Ref: CGA 62826) 	Soil	0.404	Major fraction, Relevant
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Other known metabolites:

Metabolite name and reference	Aliases	Formation Medium / Rate	Estimated Maximum Occurrence Fraction
N-(2-hydroxymethyl-6-methylphenyl)-N-(methoxyacetyl)alanine	- Note: CAS 53823-88-4	-	-
N-(2,6-dimethyl-5-hydroxyphenyl)-N-(methoxyacetyl)alanine methyl ester (Ref: CGA 100255)	- Note: CAS 96258-85-4	-	-
N-(2,6-dimethylphenyl)-N-(hydroxyacetyl)alanine (Ref: CGA 107955)	- Note: CAS 104390-55-8	Rat	-
N-(2-carboxy-6-methylphenyl)-N-(methoxyacetyl)alanine methyl ester (Ref: CGA 108905)	-	-	-
N-(2-carboxy-6-methylphenyl)-N-(methoxyacetyl)alanine (Ref: CGA 108906)	- Note: CAS: 104390-56-9; LC50(fish) = 100 mg l ⁻¹ ; LC50(<i>Daphnia</i>) = 100 mg l ⁻¹	Plant; Soil	-
N-(3-hydroxy-2,6-dimethylphenyl)-N-(methoxyacetyl)alanine (Ref: CGA 119857)	-	-	-
N-hydroxyacetyl-2,6-dimethyl-aniline (Ref: CGA 37734)	- Note: CAS 29183-14-0	-	-
N-(2,6-dimethylphenyl) alanine (Ref: CGA 67867)	-	-	-
N-methoxyacetyl-2,6-dimethyl-aniline (Ref: CGA 67868)	- Note: LC50(fish) = 98.9 mg l ⁻¹ ; LC50(<i>Daphnia</i>) = 158 mg l ⁻¹	Water	-
N-(2,6-dimethylphenyl)-N-(hydroxyacetyl)alanine methyl ester (Ref: CGA 67869)	- Note: CAS 66637-79-4	-	-
2,6-dimethylanilinoxoacetic acid (Ref: CGA 68124)	- Note: CAS 2903-48-2	-	-
N-(carboxycarbonyl)-N-(2,6-dimethylphenyl)alanine (Ref: CGA 78532)	-	-	-
N-(carboxycarbonyl)-N-(2,6-dimethylphenyl)alanine methyl ester (Ref: CGA 79353)	-	-	-
N-(2-hydroxymethyl-6-methylphenyl)-N-(methoxyacetyl)alanine methyl ester (Ref: CGA 94689)	- Note: CAS 85933-49-9	-	-




ECOTOXICOLOGY

Property 	Value	Source/Quality Score/Other Information 	Interpretation 	
Bio-concentration factor	BCF:	15	A5	Low potential
	CT50 (days):	Not available		-
Bioaccumulation potential	-	Calculated	Low	
Mammals - Acute oral LD50 (mg kg ⁻¹)	375	A4 Rat	Moderate	
Mammals - Short term dietary NOEL	(mg kg ⁻¹):	2.5	L1 Rat	High
	(ppm diet):	-		-
Birds - Acute LD50 (mg kg ⁻¹)	981	A5 <i>Colinus virginianus</i>	Moderate	
Birds - Short term dietary (LC50/LD50)	> 5620 mg/kg feed	A5 <i>Colinus virginianus</i>	-	
Fish - Acute 96 hour LC50 (mg l ⁻¹)	> 100	A5 <i>Oncorhynchus mykiss</i>	Moderate	
Fish - Chronic 21 day NOEC (mg l ⁻¹)	9.1	A4 <i>Pimephales promelas</i>	-	
Aquatic invertebrates - Acute 48 hour EC50 (mg l ⁻¹)	> 100	A5 <i>Daphnia magna</i>	Moderate	
Aquatic invertebrates - Chronic 21 day NOEC (mg l ⁻¹)	36	A5 <i>Daphnia magna</i>	-	
Aquatic crustaceans - Acute 96 hour LC50 (mg l ⁻¹)	-	-	-	
Sediment dwelling organisms - Acute 96 hour LC50 (mg l ⁻¹)	-	-	-	
Sediment dwelling organisms - Chronic 28 day NOEC, static, water (mg l ⁻¹)	-	-	-	
Sediment dwelling organisms - Chronic 28 day NOEC, sediment (mg kg ⁻¹)	-	-	-	
Aquatic plants - Acute 7 day EC50, biomass (mg l ⁻¹)	69.5	F3 <i>Lemna gibba</i>	Low	
Algae - Acute 72 hour EC50, growth (mg l ⁻¹)	36	A4 Unknown species	Low	
Algae - Chronic 96 hour NOEC, growth (mg l ⁻¹)	-	-	-	
Honeybees - Acute 48 hour LD50 (µg bee ⁻¹)	> 127	A5 Oral	Low	
Earthworms - Acute 14 day LC50 (mg kg ⁻¹)	830	A5	Moderate	

Earthworms - Chronic 14 day NOEC, reproduction (mg kg ⁻¹)	-	-	-
Other soil macro-organisms - e.g. Collembola	LR50 / EC50 / NOEC / % Effect	-	-
Other arthropod (1)	LR50 g ha ⁻¹ : % Effect: -14.5	-	Beneficial capacity Dose: 3.5 kg ha ⁻¹ A5 Aphidius rhopalosiphi, adult
Other arthropod (2)	LR50 g ha ⁻¹ : % Effect: 11.8	-	Beneficial capacity Dose: 2.5 kg ha ⁻¹ , 5 applications at 14 day interval, 7 day A5 <i>Typhlodromus pyri</i>
Soil micro-organisms	Nitrogen mineralisation: No significant effect Carbon mineralisation: No significant effect	A5 [Dose: 6.6 mg ha ⁻¹ soil, 100 days]	-
Mesocosm study data	NOEAEC mg l ⁻¹ : NOEAEC mg l ⁻¹ :	-	-

HUMAN HEALTH AND PROTECTION

General:

Property 	Value	Source/Quality Score/Other Information 	Interpretation 
Mammals - Acute oral LD50 (mg kg ⁻¹)	375	A4 Rat	Moderate
Mammals - Dermal LD50 (mg kg ⁻¹ body weight)	> 2000	A5 Rat	-
Mammals - Inhalation LC50 (mg l ⁻¹)	2.29	A5 Rat (nose only)	-
ADI - Acceptable Daily Intake (mg kg ⁻¹ bw day ⁻¹)	0.08	A5 Dog, SF=100	-
ARfD - Acute Reference Dose (mg kg ⁻¹ bw day ⁻¹)	0.5	A5	-

AOEL - Acceptable Operator Exposure Level - Systemic (mg kg ⁻¹ bw day ⁻¹)	0.08	A5 Rat, 90 day, SF=100	-
Dermal penetration studies (%)	10	A5	-
Dangerous Substances Directive 76/464	-	-	-
Exposure Limits	-	-	-
Exposure Routes	Public: [No unacceptable risks to bystanders identified] Occupational: [No unacceptable risks to operators or other workers identified]		
Examples of European MRLs (mg kg ⁻¹)	Value: Table grapes and lettuce: 2.0; Wine grapes, pomes and cabbages: 1.0; Strawberries, citrus, sweet peppers, onions and garlic: 0.5; Carrots, cauliflower and broccoli: 0.1; Other vegetables and other fruit: 0.05; Cereal grains: 0.02 Note: [Current May 2007.] [Limits include metalaxyl applying to sum of isomers/enantiomers.] For the EU pesticides database click here		
Drinking Water MAC (µg l ⁻¹)	-	-	-

Health issues:

	Endocrine disrupter	Reproduction / development effects	Acetyl cholinesterase inhibitor	Neurotoxicant	Respiratory tract irritant	Skin irritant	Eye irritant
	X	-	X	X	-	✓	✓
General human health issues	[No further information available]						

- ✓ : Yes, known to cause a problem
- X : No, known not to cause a problem
- ? : Possibly, status not identified
- : No data

Handling issues:

Property	Value	Source/Quality Score/Other Information	Interpretation
General	[Not explosive or oxidising]		
EC Risk Classification	[Xn - Harmful: R22], [Xi - Irritant: R41]		
EC Safety Classification	S2, S26, S39, S46		
WHO Classification	II - company classification	-	Moderately hazardous
US EPA Classification (formulation)	-	-	-
UN Number	-		
Waste disposal & packaging	-		

TRANSLATIONS

Language	Name
English	metalaxyl-M
French	metalaxyl-M
German	Metalaxyl-M
Danish	metalaxyl-M
Italian	metalaxil-M
Spanish	metalaxil-M; mefenoxam
Greek	metalaxyl-M
Slovenian	metalaksil-M
Polish	metalaksyl-M
Swedish	metalaxyl-M
Hungarian	metalaxyl-M
Dutch	methalaxyl-M

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