

# kresoxim-methyl (Ref: BAS 490F)

\*\* Translations



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## GENERAL INFORMATION

**Description:** A fungicide for the control of scab on apples and pears and other fungal diseases on a wide range of crops

**Introduction:** 1998, USA

### EC Directive 91/414:

Status	Annex 1
Dossier rapporteur/co-rapporteur	Belgium/Lithuania
Date inclusion expires	31/12/2011

Approved for use (✓) or known to be used (#) in the following European countries:



AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HU	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK	UK	
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Also registered in: Australia, USA

### General status:




Pesticide Type	Fungicide, Bacteriacide
Chemical Group	Strobilurin
Mode of Action	Protective, curative, eradicated action and long residual effects, acts by binding to Qo site blocking electron transfer and respiration of the fungi
CAS RN	143390-89-0
EC Number	417-880-0
CIPAC Number	568
US EPA Chemical code	129111
Chemical Formula	C <sub>18</sub> H <sub>19</sub> NO <sub>4</sub>
SMILES	O=C(OC)\C(=N\OC)c1c(cccc1)COc2ccccc2C
International Chemical Identifier (InChI)	InChI=1/C18H19NO4/c1-13-8-4-7-11-16(13)23-12-14-9-5-6-10-15(14)17(19-22-3)18(20)21-2/h4-11H,12H2,1-3H3/b19-17+
Structure diagram available?	Yes
Molecular Mass (g mol <sup>-1</sup> )	313.35
IUPAC Name	methyl (E)-methoxyimino[α-(o-tolyloxy)-o-tolyl]acetate
CAS Name	methyl (αE)-α-(methoxyimino)-2-[(2-methylphenoxy)methyl]benzeneacetate
Other status information	-
Herbicide Resistance (HRAC) Classification	Not applicable

Insecticide Resistance (IRAC) Classification	Not applicable
Fungicide Resistance (FRAC) Classification	11
Physical State	off-white crystalline powder

## Formulations:

Property 	Value
Example manufacturers of products using this active	<ul style="list-style-type: none"> <li>• AgriGuard</li> <li>• BASF</li> <li>• Standon</li> </ul>
Example products using this active	<ul style="list-style-type: none"> <li>• Strobry WG</li> <li>• Kresoxy WG</li> <li>• Beem WG</li> <li>• Candit</li> </ul>
Associated substances	<ul style="list-style-type: none"> <li>• <a href="#">epoxiconazole</a></li> <li>• <a href="#">fenpropimorph</a></li> </ul>
UK LERAP status	Broadcast Air Assisted LERAP
Formulation and application details	Often supplied as wettable granules that are 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 <sup>-1</sup> )	2.0	A5	Low
Solubility - In organic solvents at 20°C (mg l <sup>-1</sup> )	1720	A5 - n-Heptane	-
	14900	A5 - Methanol	-
	217000	A5 - Acetone	-
	123000	A5 - Ethyl acetate	-
Melting Point (°C)	102	A5	-
Boiling Point (°C)	Decomposes before boiling	A5	-
Degradation point (°C)	310	A5	-
Flashpoint (°C)	Not highly flammable	A5	-
Octanol-water partition coefficient at pH 7, 20°C	P:	2.51 X 10 <sup>03</sup>	Calculated
	Log P:	3.4	A5 - @ 25 DegC
Bulk density (g ml <sup>-1</sup> )/Specific gravity	1.26	A5	-
Dissociation constant (pKa) at	Not applicable	A5	-

25°C		Note: No dissociation		
Vapour pressure at 25°C (mPa)		2.30 X 10 <sup>-03</sup>	A5	Volatile
Henry's law constant at 25°C (Pa m <sup>3</sup> mol <sup>-1</sup> )		3.60 X 10 <sup>-04</sup>	A5	Non-volatile
Henry's law constant at 20°C (dimensionless)		1.48 X 10 <sup>-07</sup>	Q2	Non-volatile
Soil degradation (days) (aerobic)	DT50 (typical):	16	A5	Non-persistent
	DT50 (lab at 20°C):	0.87	A5	Non-persistent
	DT50 (field):	-	-	-
	DT90 (lab at 20°C):	1.12	A5	-
	DT90 (field):	1	A3	-
	Note:	EU dossier lab studies DT50 range 0.37-1.85 days, DT90 1.58-1.85 days; Field studies DT90 > 1day; Other sources: 4 days (DW4)		
Aqueous photolysis DT50 (days) at pH 7	Value:	18.2	A5	Slow
	Note:	Continuous irradiation		
Aqueous hydrolysis DT50 (days) at 20°C and pH 7	Value:	35	A5	Moderately persistent
	Note:	pH sensitive: DT50 822 days at pH 5, 0.38 days at pH 9		
Water-Sediment DT50 (days)		1.3	A5	Fast
Water phase only DT50 (days)		0.85	A5	Fast
GUS leaching potential index		1.82	Calculated	Transition state
SCI-GROW groundwater index (µg l <sup>-1</sup> ) for a 1 kg ha <sup>-1</sup> or 1 l ha <sup>-1</sup> application rate	Value:	4.63 X 10 <sup>-02</sup>	Calculated	-
	Note:	-		
Potential for particle bound transport index		-	Calculated	Low
Koc - Organic-carbon sorption constant (ml g <sup>-1</sup> )		308	A5	Moderately mobile
		pH sensitivity: Koc increases as pH decreases		
		Note: EU dossier kfoc range 219-372 mL/g; Other sources: 100 mL/g (DW4)		
Freundlich isotherm	Kf:	4.95	A5	-
	1/n:	0.975		-
	Note	EU Dossier Kf range 2.6-7-7.74, 1/n range 0.95-0.99, n=5		

Maximum UV-vis absorption L [Absorption occurs above 290nm] A3 -  
 $\text{mol}^{-1} \text{cm}^{-1}$




### Key metabolites:

Metabolite	Formation Medium	Estimated Maximum Occurrence Fraction	91/414 Relevancy 
(E)-methoxyamino(alpha-(o-tolyloxy)-o-tolyl)acetic acid (Ref: BF 490-1) 	Soil	0.838	Major fraction, Relevant

### Other known metabolites:

Metabolite name and reference	Aliases	Formation Medium / Rate	Estimated Maximum Occurrence Fraction
-	BF 490-2	Plant	-
-	BF 490-9	Rat; Plant	-
-	BF 490-15; 490M54	Plant	-
-	490M17	Plant	-
-	BF 490-8; 490M18	Rat (urinary)	-
-	490M19	Rat (urinary)	-
-	490M56	Rat (urinary)	-
-	490M58	Animal	-
-	490M59	Animal	-
-	490M4	Soil	-
-	Note: Minor metabolite		
-	490M5; kresoxim diacid	Soil; Groundwater	-

## ECOTOXICOLOGY




Property 	Value	Source/Quality Score/Other Information 	Interpretation 
Bio-concentration factor	BCF: 220	A5 Whole fish	Threshold for concern
	CT50 (days): 0.37		-
Bioaccumulation potential	-	Calculated	Moderate
Mammals - Acute oral LD50 ( $\text{mg kg}^{-1}$ )	> 5000	A5 Rat	Low
Mammals - Short term dietary NOEL ( $\text{mg kg}^{-1}$ ):	> 146	L3 Rat	Moderate
	(ppm diet): > 2000		-

Birds - Acute LD50 (mg kg <sup>-1</sup> )	> 2150	A5 <i>Anas platyrhynchos</i>	Low
Birds - Short term dietary (LC50/LD50)	> 5000 mg/kg feed	A5 <i>Anas platyrhynchos</i>	-
Fish - Acute 96 hour LC50 (mg l <sup>-1</sup> )	0.19	A5 <i>Oncorhynchus mykiss</i>	Moderate
Fish - Chronic 21 day NOEC (mg l <sup>-1</sup> )	0.013	Q2 <i>Oncorhynchus mykiss</i>	-
Aquatic invertebrates - Acute 48 hour EC50 (mg l <sup>-1</sup> )	0.186	A5 <i>Daphnia magna</i>	Moderate
Aquatic invertebrates - Chronic 21 day NOEC (mg l <sup>-1</sup> )	0.032	Q2 <i>Daphnia magna</i>	-
Aquatic crustaceans - Acute 96 hour LC50 (mg l <sup>-1</sup> )	0.047	F3 <i>Americamysis bahia</i>	High
Sediment dwelling organisms - Acute 96 hour LC50 (mg l <sup>-1</sup> )	-	-	-
Sediment dwelling organisms - Chronic 28 day NOEC, static, water (mg l <sup>-1</sup> )	-	-	-
Sediment dwelling organisms - Chronic 28 day NOEC, sediment (mg kg <sup>-1</sup> )	-	-	-
Aquatic plants - Acute 7 day EC50, biomass (mg l <sup>-1</sup> )	0.301	F3 <i>Lemna gibba</i>	Moderate
Algae - Acute 72 hour EC50, growth (mg l <sup>-1</sup> )	0.063	A5 <i>Ankistrodesmus spp.</i>	Moderate
Algae - Chronic 96 hour NOEC, growth (mg l <sup>-1</sup> )	-	-	-
Honeybees - Acute 48 hour LD50 (µg bee <sup>-1</sup> )	> 100	A5 Contact	Moderate
Earthworms - Acute 14 day LC50 (mg kg <sup>-1</sup> )	> 469	A5 corr	Moderate
Earthworms - Chronic 14 day NOEC, reproduction (mg kg <sup>-1</sup> )	-	-	-
Other soil macro-organisms - e.g. Collembola	LR50 / EC50 / NOEC / % Effect	-	-
Other arthropod (1)	LR50 g ha <sup>-1</sup> : 900	Mortality as dose g ha <sup>-1</sup> A5	Harmless at 1 kg ha <sup>-1</sup>
	% Effect: 14.9	Beneficial capacity Dose: 0.15 kg ha <sup>-1</sup> A5 <i>Typhlodromus pyri</i>	Harmless

Other arthropod (2)	LR50 g ha <sup>-1</sup> :	900		Mortality as dose g ha <sup>-1</sup> A5	Harmless at 1 kg ha <sup>-1</sup>
	% Effect:	-17.9		Beneficial capacity Dose: 0.15 kg ha <sup>-1</sup> A5 <i>Trichogramma cacoeciae</i>	Harmless
Soil micro-organisms		Nitrogen mineralisation: No significant effect Carbon mineralisation: No significant effect		A5 [Dose: 2.0 mg ha <sup>-1</sup> soil]	-
Mesocosm study data	NOEAEC mg l <sup>-1</sup> :	-		-	-
	NOEAEC mg l <sup>-1</sup> :	-		-	-

## HUMAN HEALTH AND PROTECTION

### General:

Property 	Value	Source/Quality Score/Other Information 	Interpretation 
Mammals - Acute oral LD50 (mg kg <sup>-1</sup> )	> 5000	A5 Rat	Low
Mammals - Dermal LD50 (mg kg <sup>-1</sup> body weight)	> 2000	A5 Rat	-
Mammals - Inhalation LC50 (mg l <sup>-1</sup> )	> 5.6	A5 Rat	-
ADI - Acceptable Daily Intake (mg kg <sup>-1</sup> bw day <sup>-1</sup> )	0.4	A5 Rat, SF=100	-
ARfD - Acute Reference Dose (mg kg <sup>-1</sup> bw day <sup>-1</sup> )	None allocated	A5	-
AOEL - Acceptable Operator Exposure Level - Systemic (mg kg <sup>-1</sup> bw day <sup>-1</sup> )	0.9	A5 Rat, 90 day, SF=100	-
Dermal penetration studies (%)	0.3-13	A5 (Diluted spray-Conc)	-
Dangerous Substances Directive 76/464	-	-	-
Exposure Limits	-	-	-
Exposure Routes	Public: [No unacceptable risk to bystanders identified] Occupational: [No unacceptable risk to operators and other workers identified]		
Examples of European MRLs (mg kg <sup>-1</sup> )	Value: Soft fruit and sweet peppers: 1.0; Eggplants and tomatoes: 0.5; Pumpkins, winter squash and pomes: 0.2; Other vegetables, other fruit and cereal grains: 0.05 Note: [Current May 2007.] For the EU pesticides database <a href="#">click here</a>		

Drinking Water MAC ( $\mu\text{g l}^{-1}$ ) - - -

### Health issues:

Carcinogen	Endocrine disrupter	Reproduction / development effects	Acetyl cholinesterase inhibitor	Neurotoxicant	Respiratory tract irritant	Skin irritant	Eye irritant
?	-	X	X	X	✓	✓	✓
General human health issues		[Possible carcinogen but this is disputed by many sources], [May damage esophagus or gastrointestinal tract], [Possible liver toxicant]					

✓ : 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	[IMDG Transport Code is usually 9], [Not explosive or oxidising]		
EC Risk Classification	[Carcinogen category 3: R40], [N - Dangerous for the environment: R50, R53]		
EC Safety Classification	S2, S36/37, S60, S61		
WHO Classification	NL	-	Not listed
US EPA Classification (formulation)	III	-	Caution - Slightly toxic
UN Number	Usually 3077		
Waste disposal & packaging	[Usually Packaging Group III (minor danger)]		

### TRANSLATIONS

Language	Name
English	kresoxim-methyl
French	kresoxim-methyl
German	Kresoxim-methyl
Danish	kresoxim-methyl
Italian	kresoxim metile
Spanish	kresoxim-metil
Greek	kresoxim-methyl
Slovenian	kresoksim metil
Polish	krezoksym metylowy
Swedish	kresoximmetyl
Hungarian	kresoxim-methyl
Dutch	kresoxim-methyl

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