

**TO CAUSE A HAZARD IN THE USE,
STORAGE OR DISPOSAL OF THIS
SUBSTANCE IS AN OFFENCE.**

Chemical groups:

Mandipropamid is a Carboxylic Acid Amides.
Oxathiapiprolin is a Piperidinyl-thiazole-isox-
azolines.

SC Formulation: Suspension Concentrate
**A systemic fungicide for the preventative
control of late blight in tomatoes and
downy mildew in cucurbits.**

Shelf Life: At least 2 years from date
of manufacture when stored in original
unopened containers under cool, dry, well-
ventilated conditions.

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Group Company

 **Orondis[®] Ultra**
BRAND LOGO/NOMBRE DEL PRODUCTO
28 SC

syngenta

Reg. No.:
23-B-92-2-B-109-1

Net content:
250 ml



HARMFUL IF SWALLOWED

GROUP 49 40 FUNGICIDES

Composition.....(mass/volume)
Mandipropamid.....250 g/litre
Oxathiapiprolin30 g/litre
Inert ingredients to 1 litre

**Before using this product, read
and understand the entire label.**

Registered by: Syngenta Agro AG, 32
Sandringham Drive, Alexandra Park, Harare.
Tel.: 08677005432 / 08677005434

Distributed by:

Emergency Call Number:
Swiss Toxicological Information Centre (24 h)
+41 44 251 51 51
**Zimbabwe Drugs and Toxicology
Information Services (DATIS) on**
+263 242 307 148/ +263 786 100 098

Manufacturer: Syngenta Crop Protection
AG, Basel, Switzerland

Date of manufacture/Batch No: See inkjet
print on the neck of the bottle.

L11092173 ZIMB/08A PPE 4167073

L11092173 ZIMB/08A PPE 4167073



CAUTION



20mm BOOKLET SPINE SHOULD BE KEPT VARNISH FREE

PRECAUTIONS

- Handle with care; avoid splashing / contact; poisonous by swallowing.
- WEAR suitable personal protective clothing (PPE) i.e., boots, gloves and face protection for mixing and boots and overalls, hat, and solid footwear for spraying.
- **DO NOT** eat, drink, or smoke while using this product.
- DANGEROUS TO LIVESTOCK, PETS, FISH, BIRDS, AND BEES.
- **DO NOT** CONTAMINATE DRINKING POOLS, DAMS, RIVERS, WATERWAYS AND OTHER WATER SUPPLIES.
- Store in original container, in a cool, dry place UNDER LOCK and KEY.
- KEEP OUT OF REACH OF CHILDREN and untrained persons.
- KEEP APART FROM FOOD, FOODSTUFFS, seeds, and fertilizers.
- Use only on the crops for which the product is registered.
- Avoid drift onto adjacent crops or soil

ENVIRONMENT AND WILDLIFE:

- **DO NOT** apply under weather conditions or from spraying equipment that may cause spray to drift onto nearby

susceptible plants / crops, cropping lands or pastures. **DO NOT** contaminate dams, rivers or streams with the product or used container. **DO NOT** spray across open bodies of water.

SYMPTOMS OF POISONING

- Non-specific but may include nausea, vomiting, dizziness and headaches. Diarrhoea may also occur with associated symptoms.

FIRST AID

- General advice:** Have the product container, label or Material Safety Data Sheet with you when calling the Syngenta emergency number or the Drug and Toxicology Information Services, or physician, or going for treatment.
- Eye splashes: Immediately hold eyelids apart and pour in a gentle stream of water for 10-15 minutes. Go to a doctor.
 - Skin contact: Immediately remove contaminated clothing; wash affected skin with plenty of water. Wash contaminated clothing before re-use.
 - If product is swallowed, **DO NOT** make the person vomit. Take the person and this container to a doctor at

once.

- **If inhaled:** Move victim to fresh air.

NOTE TO PHYSICIAN

- No specific antidote is known.
- Treat symptomatically.
- Never give anything to an unconscious patient and never induce vomiting.

DISPOSAL OF EMPTY CONTAINER

Rinse the container 3 times with a volume of water equal to at least 25% of that of the container. Add the rinsate to the contents of the spray tank. Destroy the empty container by perforation and flattening. Place it in a secure disposal area and offer it for recycling. **DO NOT** use it for any other purpose.

DECONTAMINATION OF SPRAYER

After use, clean the sprayer thoroughly and ensure that all traces of **Orondis® Ultra** are removed. Make use of

the following method: (a) Drain tank and then rinse tank, sprayer boom and hoses with clean water for at least 10 minutes. (b) Fill tank with clean water and add to it 1,0 litre household bleach (5%) or 1,5 litres household bleach (3,5%) per 200 litres of water. Rinse hoses and sprayer boom and leave in the tank for 15 minutes whilst agitating. Drain through the nozzle outlets. (c) Repeat step (b) and thereafter, rinse thoroughly with clean water and dispose of the wash water at a site designated for the disposal of pesticides.

COMPATIBILITY

If **Orondis® Ultra** is used in tank mix combinations, mix small quantities of the chemicals with water to test the physical compatibility of the components. The products should be added separately to the bulk water in the spray tank. Add these together while agitating and check for any signs of incompatibility e.g. flocculation, etc. In this instance, full cognizance must be taken of all warnings, precautions and directions for use on that label.

WARRANTY

The user bears the risk for damage resulting from factors beyond the manufacturer's control. All recommendations for use of the fungicide are based on the current state of the manufacturer's knowledge. Since the manu-

manufacturer cannot control the farmer's choice of fungicide, its application, use, or storage of the product, or other agronomic practices, the manufacturer cannot accept responsibility therefore. Resistant strains of fungi may develop or may exist against which fungicides may be less effective. Since the occurrence of such strains cannot be forecast, neither the manufacturer nor its distributors can assume responsibility for any loss or damage caused by failure to control resistant fungi.

TEXT AREA
136 x 54 mm

PRODUCT INFORMATION

Mode of Action

Orondis® Ultra contains two active ingredients: **oxathiapiprolin** and **mandipropamid**.

Oxathiapiprolin (FRAC 49) inhibits an oxysterol binding protein (OSBP) homologue. Oxysterol binding proteins are implicated in the movement of lipids between membranes, among other processes. Inhibiting OSBP may disrupt other processes in the fungal cell, such as signaling, maintaining cell membranes, and the formation of more complex lipids that are essential for the cell to survive.

Mandipropamid (FRAC 40) inhibits cellulose synthesis in Oomycete plant pathogens. Mandipropamid acts on the cell wall and does not enter the cell. In the presence of mandipropamid, glucose incorporation into cellulose is perturbed

Resistance Management:

Repeated use of products for control of specific plant pathogens may lead to the selection of resistant strains of fungi and result in a reduction of disease control. The mode of action of Oxathiapiprolin, one of the active ingredients in **Orondis® Ultra**, is novel and has been assigned the FRAC code 40 and 49. A disease management program that includes rotation and/or tank mixing with fungicides with a different mode of action is essential to reduce the risk of fungicide resistance development. For guidance on a particular crop and disease control situation, consult your country/state extension specialist or official country/state recommendations.

The following restrictions apply to the use of **Orondis® Ultra**:

1. Exposure to Orondis® Ultra (or any other FRAC 40 and 49-containing product) should not exceed thirty-three percent (33%) of the total number of fungicide applications with a maximum of four (4) applications per crop cycle. Where less than three (3) fungicide applications are made, make no more than one (1) application of

- Orondis® Ultra** (or any other FRAC 40 and 49-containing product).
2. **Orondis® Ultra** applications are to be made preventively and no more than three (3) times in a sequence before applying a fungicide with a different mode of action.
 3. Where a fungicide with a different mode of action follows Orondis® Ultra (or any other FRAC 49-containing product) application(s), this fungicide preferably should have curative activity.
 4. **Orondis® Ultra** (or any other FRAC 40 and 49-containing product) must not be used in nursery production of transplanted crops.
 5. There will be no more than six applications of oxathiapiprolin (or any other FRAC 49-containing product) per year on the same field, targeting the same pathogen.
 6. No foliar application of oxathiapiprolin-based fungicides (or any other FRAC 40 and 49-containing fungicide) should be made following either a seed or soil treatment application of oxathiapiprolin.

DIRECTIONS FOR USE

Use only as recommended.

Thorough, uniform coverage is essential for effective disease control.

For safety when mixing:

- Wear gloves, boots and eye protection (at least glasses). Undiluted **Orondis® Ultra** can irritate your eyes. If you get it in your eyes wash it out at once. If you spill it on your clothes, change and wash them immediately.
- Triple rinse empty container and pour washings into sprayer tank.

For safety when spraying:

- As with all chemicals avoid contact with the spray.
- Wear overalls and boots.

For safety after spraying:

- Wash yourself. Change and wash your work clothes
- Destroy empty rinsed container by cutting or crushing then place in secure disposal site and offer for recycling – **DO NOT** use it for any other purpose.
- Wash sprayer thoroughly. Dispose of wash water in a safe manner.

Mixing instructions:

Orondis® Ultra a suspension concentrate (SC) which must be diluted in water. For proper preparation, observe the following instructions:

Verify the proper functioning and correct calibration of the equipment before use. Half fill the spray tank with clean water - shake the Orondis® Ultra container thoroughly, immediately before use. Add the required volume of **Orondis® Ultra** to the spray tank. Replace cap after pouring. If tank mixtures are made, add the products to the tank in the following sequence (as applicable): buffers, water dispersible granule or bag, wettable powder, suspension concentrate (**Orondis® Ultra** and other suspension concentrates), emulsifiable concentrate, soluble liquid formulations then adjuvants. Fill the spray tank with water to the required level while maintaining agitation to ensure thorough mixing of the spray mixture before spraying commences. Maintain agitation while spraying. Prepared spray mixture must not be left in the spray tank for more than six hours, as effectiveness may be reduced due to degradation of the product.

General use directions:

Orondis® Ultra must be applied as a full cover preventive spray for the control of the disease mentioned, ensur-

ing good coverage of the whole plant (the stems and both surfaces of the leaves) by using enough water is used and the spraying equipment is in good working condition and that the nozzles are held at a height that will ensure complete spray coverage. Avoid evaporation and drift.

Re-entry period:

DO NOT enter treated area until spray deposit has dried unless wearing personal protective equipment.

Dosage rates and Recommendations

CROP / DISEASE	DOSAGE ml/Ha	PREHARVEST INTERVAL (PHI)*
TOMATO Late blight (<i>Phytophthora infestans</i>)	Ground foliar application 400 ml- 500 ml/ha	1 day
CUCURBITS Downy mildew (<i>Pseudoperonospora cubensis</i>) sp	Knapsack mixture 30-35ml/15L	1 day

REMARKS:

- Always apply as a preventative spray application when weather conditions favour disease development.
- Repeat at 7-day intervals. Use the higher rate in high disease pressure conditions and environments.
- For programs in which tank mixes are used, the number of Orondis® Ultra containing applications should not be more than 33% of the total number of fungicide applications per crop cycle/season.
- For use in rotations, apply two (2) consecutive applications per block before alternating with fungicides with a different mode of action.
- Alternate Orondis® Ultra spray applications with fungicides with a different mode of action.
- Ground foliar application: 200 - 1000 litres water/ha depending on crop size.

***NOTE:** Compliance with these withholding periods will ensure that residues do not exceed local Maximum Residue Limits, but the import tolerances of other countries might possibly be exceeded. If the crop to be treated is intended for export, consult the relevant importer or exporting body regarding the use of this product.

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Version 2.0 Revision Date: 03.04.2017 SDS Number: S00036810957 This version replaces all previous versions.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : ORONDIS ULTRA

Design code : A21591C

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Fungicide

1.3 Details of the supplier of the safety data sheet

Company : Syngenta Crop Protection AG
Postfach
CH-4002 Basel
Switzerland

Telephone : +41 61 323 11 11

Telefax : +41 61 323 12 12

E-mail address : sds.ch@syngenta.com

1.4 Emergency telephone number

Emergency telephone number : +44 1484 538444

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute aquatic toxicity, Category 1 H400: Very toxic to aquatic life.

Chronic aquatic toxicity, Category 1 H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Warning

Hazard statements : H410 Very toxic to aquatic life with long lasting effects.

Supplemental Hazard Statements : EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

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EUH208 Contains 1,2-benzisothiazol-3-one. May produce an allergic reaction.

Precautionary statements :

Response:

P391 Collect spillage.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

Chemical name	CAS-No. EC-No. Registration number	Classification	Concentration (% w/w)
mandipropamid (ISO)	374726-62-2	Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 20 - < 25
oxathiapiprolin	1003318-67-9	Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 2.5 - < 10
1,2-benzisothiazol-3(2H)-one	2634-33-5 220-120-9	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Acute 1; H400	>= 0.025 - < 0.05
bronopol (INN)	52-51-7 200-143-0	Acute Tox. 4; H302 Acute Tox. 4; H312 Skin Irrit. 2; H315 Eye Dam. 1; H318 STOT SE 3; H335 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 0.025 - < 0.1

For explanation of abbreviations see section 16.

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SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : Have the product container, label or Safety Data Sheet with you when calling the emergency number, a poison control center or physician, or going for treatment.
- If inhaled : Move the victim to fresh air.
If breathing is irregular or stopped, administer artificial respiration.
Keep patient warm and at rest.
Call a physician or poison control centre immediately.
- In case of skin contact : Take off all contaminated clothing immediately.
Wash off immediately with plenty of water.
If skin irritation persists, call a physician.
Wash contaminated clothing before re-use.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Remove contact lenses.
Immediate medical attention is required.
- If swallowed : If swallowed, seek medical advice immediately and show this container or label.
Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : No information available.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : There is no specific antidote available.
Treat symptomatically.
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SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media : Extinguishing media - small fires
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Extinguishing media - large fires
Alcohol-resistant foam
or
Water spray
- Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

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5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10). Exposure to decomposition products may be a hazard to health.

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear full protective clothing and self-contained breathing apparatus.

Further information : Do not allow run-off from fire fighting to enter drains or water courses.
Cool closed containers exposed to fire with water spray.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

Environmental precautions : Prevent further leakage or spillage if safe to do so.
Do not flush into surface water or sanitary sewer system.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Clean contaminated surface thoroughly.
Clean with detergents. Avoid solvents.
Retain and dispose of contaminated wash water.

6.4 Reference to other sections

For disposal considerations see section 13., Refer to protective measures listed in sections 7 and 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : No special protective measures against fire required.
Avoid contact with skin and eyes.
When using do not eat, drink or smoke.
For personal protection see section 8.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage : No special storage conditions required. Keep containers

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areas and containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from food, drink and animal feedingstuffs.

7.3 Specific end use(s)

Specific use(s) : For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
mandipropamid (ISO)	374726-62-2	TWA	5 mg/m ³	Syngenta
poly(oxy-1,2-ethanediyl), alpha-hydro-omega-hydroxy-	25322-68-3	TWA	1,000 mg/m ³	CH SUVA
Further information	Harm to the unborn child is not to be expected when the OEL-value is respected			

8.2 Exposure controls

Engineering measures

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated.

The extent of these protection measures depends on the actual risks in use.

Maintain air concentrations below occupational exposure standards.

Where necessary, seek additional occupational hygiene advice.

Personal protective equipment

Eye protection : No special protective equipment required.

Hand protection
Remarks : No special protective equipment required.

Skin and body protection : No special protective equipment required.
Select skin and body protection based on the physical job requirements.

Respiratory protection : No personal respiratory protective equipment normally required.
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Protective measures : The use of technical measures should always have priority

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over the use of personal protective equipment.
When selecting personal protective equipment, seek appropriate professional advice.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	opaque
Colour	:	off-white to light brown
pH	:	7.68
		Concentration: 1 % w/v
Density	:	1.0159 g/cm ³ (25 °C)
		1.083 g/cm ³ (20 °C)
Auto-ignition temperature	:	approximately 460 °C
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

9.2 Other information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

See section "Possibility of hazardous reactions".

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	Corrosive in contact with metals
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10.4 Conditions to avoid

Conditions to avoid	:	No decomposition if used as directed.
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10.5 Incompatible materials

Materials to avoid	:	Aluminium
		Mild steel
		Iron

10.6 Hazardous decomposition products

Combustion or thermal decomposition will evolve toxic and irritant vapours.

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat, female): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): > 5.33 mg/l
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg

Components:

mandipropamid (ISO):

Acute oral toxicity : LD50 (Rat, female): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): > 5.19 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat, male and female): > 5,050 mg/kg

oxathiapiprolin:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): > 5.1 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg

1,2-benzisothiazol-3(2H)-one:

Acute oral toxicity : Assessment: The component/mixture is moderately toxic after single ingestion.

bronopol (INN):

Acute oral toxicity : Assessment: The component/mixture is moderately toxic after single ingestion.

Acute toxicity estimate: 500 mg/kg
Method: Converted acute toxicity point estimate

Acute dermal toxicity : Assessment: The component/mixture is moderately toxic after

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single contact with skin.

Acute toxicity estimate: 1,100 mg/kg
Method: Converted acute toxicity point estimate

Skin corrosion/irritation

Product:

Species: Rabbit
Result: No skin irritation

Components:

mandipropamid (ISO):

Species: Rabbit
Result: No skin irritation

oxathiapiprolin:

Species: Rabbit
Result: No skin irritation

1,2-benzisothiazol-3(2H)-one:

Result: Irritating to skin.

bronopol (INN):

Result: Irritating to skin.

Serious eye damage/eye irritation

Product:

Species: Rabbit
Result: No eye irritation

Components:

mandipropamid (ISO):

Species: Rabbit
Result: No eye irritation

oxathiapiprolin:

Species: Rabbit
Result: No eye irritation

1,2-benzisothiazol-3(2H)-one:

Result: Risk of serious damage to eyes.

bronopol (INN):

Result: Risk of serious damage to eyes.

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Respiratory or skin sensitisation

Product:

Test Type: [mouse lymphoma cells](#)

Species: [Mouse](#)

Result: [Did not cause sensitisation on laboratory animals.](#)

Components:

mandipropamid (ISO):

Species: Guinea pig

Result: Did not cause sensitisation on laboratory animals.

oxathiapiprolin:

Species: Guinea pig

Result: Did not cause sensitisation on laboratory animals.

1,2-benzisothiazol-3(2H)-one:

Result: Probability or evidence of skin sensitisation in humans

Germ cell mutagenicity

Components:

mandipropamid (ISO):

Germ cell mutagenicity-
Assessment : Animal testing did not show any mutagenic effects.

oxathiapiprolin:

Germ cell mutagenicity-
Assessment : Tests on bacterial or mammalian cell cultures did not show mutagenic effects., Animal testing did not show any mutagenic effects.

Carcinogenicity

Components:

mandipropamid (ISO):

Carcinogenicity -
Assessment : No evidence of carcinogenicity in animal studies.

oxathiapiprolin:

Carcinogenicity -
Assessment : Animal testing did not show any carcinogenic effects.

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Reproductive toxicity

Components:

mandipropamid (ISO):

Reproductive toxicity - Assessment : No toxicity to reproduction

oxathiapiprolin:

Reproductive toxicity - Assessment : Animal testing did not show any effects on fertility.

STOT - single exposure

Components:

bronopol (INN):

Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

Repeated dose toxicity

Components:

mandipropamid (ISO):

Remarks: No adverse effect has been observed in chronic toxicity tests.

oxathiapiprolin:

Remarks: No significant adverse effects were reported

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h

LC50 (Cyprinus carpio (Carp)): > 100 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h

Toxicity to algae : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 80 mg/l
Exposure time: 96 h

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.38 mg/l
Exposure time: 96 h

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Ecotoxicology Assessment

- Acute aquatic toxicity : Very toxic to aquatic life., Classification of the product is based on the summation of the concentrations of classified components.
- Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects., Classification of the product is based on the summation of the concentrations of classified components.

Components:

mandipropamid (ISO):

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 4.4 mg/l
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 7.1 mg/l
Exposure time: 48 h
- EC50 (Crassostrea virginica (eastern oyster)): 0.97 mg/l
Exposure time: 96 h
- Toxicity to algae : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 2.5 mg/l
Exposure time: 72 h
- NOEC (Pseudokirchneriella subcapitata (green algae)): 1.3 mg/l
End point: Growth rate
Exposure time: 72 h
- M-Factor (Acute aquatic toxicity) : 1
- Toxicity to microorganisms : EC50 (activated sludge): > 100 mg/l
Exposure time: 3 h
- Toxicity to fish (Chronic toxicity) : NOEC: 0.5 mg/l
Exposure time: 32 d
Species: Pimephales promelas (fathead minnow)
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.076 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
- M-Factor (Chronic aquatic toxicity) : 1

Ecotoxicology Assessment

- Acute aquatic toxicity : Very toxic to aquatic life.

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oxathiapiprolin:

Toxicity to fish : LC50 (Cyprinodon variegatus (sheepshead minnow)): > 0.65 mg/l
Exposure time: 24 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.67 mg/l
Exposure time: 24 h

Toxicity to algae : ErC50 (Pseudokirchneriella subcapitata (green algae)): >= 0.142 mg/l
Exposure time: 72 h

M-Factor (Acute aquatic toxicity) : 1

Toxicity to fish (Chronic toxicity) : NOEC: 0.46 mg/l
Exposure time: 88 d
Species: Oncorhynchus mykiss (rainbow trout)
Test Type: Early-life Stage

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.75 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

NOEC: 0.058 mg/l
Exposure time: 32 d
Species: Americamysis bahia (Mysid shrimp)

M-Factor (Chronic aquatic toxicity) : 1

1,2-benzisothiazol-3(2H)-one:

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

bronopol (INN):

Toxicity to algae : NOEC (algae): 0.0025 mg/l
Exposure time: 72 h

M-Factor (Acute aquatic toxicity) : 10

M-Factor (Chronic aquatic toxicity) : 1

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

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12.2 Persistence and degradability

Components:

mandipropamid (ISO):

Biodegradability : Result: Not readily biodegradable.
Stability in water : Degradation half life: 4.5 - 26 d
Remarks: Product is not persistent.

oxathiapiprolin:

Biodegradability : Result: Not readily biodegradable.

bronopol (INN):

Biodegradability : Result: Readily biodegradable.

12.3 Bioaccumulative potential

Components:

mandipropamid (ISO):

Bioaccumulation : Remarks: Low bioaccumulation potential.
Partition coefficient: n-octanol/water : log Pow: 3.2 (25 °C)

oxathiapiprolin:

Bioaccumulation : Remarks: Does not bioaccumulate.

12.4 Mobility in soil

Components:

mandipropamid (ISO):

Distribution among environmental compartments : Remarks: Low mobility in soil.
Stability in soil : Percentage dissipation: 50 % (DT50: 26 - 178 d)
Remarks: Product is not persistent.

oxathiapiprolin:

Distribution among environmental compartments : Remarks: Low mobility in soil.

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

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Components:

mandipropamid (ISO):

Assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).. This substance is not considered to be very persistent and very bioaccumulating (vPvB)..

12.6 Other adverse effects

Components:

mandipropamid (ISO):

Additional ecological information : No data available

oxathiapiprolin:

Additional ecological information : No data available

1,2-benzisothiazol-3(2H)-one:

Additional ecological information : No data available

bronopol (INN):

Additional ecological information : No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Do not contaminate ponds, waterways or ditches with chemical or used container.
Do not dispose of waste into sewer.
Where possible recycling is preferred to disposal or incineration.
If recycling is not practicable, dispose of in compliance with local regulations.

Contaminated packaging : Empty remaining contents.
Triple rinse containers.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

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SECTION 14: Transport information

14.1 UN number

ADN : UN 3082
ADR : UN 3082
RID : UN 3082
IMDG : UN 3082
IATA : UN 3082

14.2 UN proper shipping name

ADN : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(MANDIPROPAMID AND OXATHIPIPROLIN)
ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(MANDIPROPAMID AND OXATHIPIPROLIN)
RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(MANDIPROPAMID AND OXATHIPIPROLIN)
IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(MANDIPROPAMID AND OXATHIPIPROLIN)
IATA : Environmentally hazardous substance, liquid, n.o.s.
(MANDIPROPAMID AND OXATHIPIPROLIN)

14.3 Transport hazard class(es)

ADN : 9
ADR : 9
RID : 9
IMDG : 9
IATA : 9

14.4 Packing group

ADN
Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9
ADR
Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9
Tunnel restriction code : (E)
RID

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Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

IMDG

Packing group : III
Labels : 9
EmS Code : F-A, S-F

IATA (Cargo)

Packing instruction (cargo aircraft) : 964
Packing instruction (LQ) : Y964
Packing group : III
Labels : Miscellaneous

IATA (Passenger)

Packing instruction (passenger aircraft) : 964
Packing instruction (LQ) : Y964
Packing group : III
Labels : Miscellaneous

14.5 Environmental hazards

ADN

Environmentally hazardous : yes

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

IATA (Passenger)

Marine pollutant : yes

IATA (Cargo)

Marine pollutant : yes

14.6 Special precautions for user

Not applicable

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59) : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

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Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

		Quantity 1	Quantity 2
E1	ENVIRONMENTAL HAZARDS	100 t	200 t

Other regulations : Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

15.2 Chemical safety assessment

A Chemical Safety Assessment is not required for this substance when it is used in the specified applications.

SECTION 16: Other information

Full text of H-Statements

H302 : Harmful if swallowed.
H312 : Harmful in contact with skin.
H315 : Causes skin irritation.
H317 : May cause an allergic skin reaction.
H318 : Causes serious eye damage.
H335 : May cause respiratory irritation.
H400 : Very toxic to aquatic life.
H410 : Very toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox. : Acute toxicity
Aquatic Acute : Acute aquatic toxicity
Aquatic Chronic : Chronic aquatic toxicity
Eye Dam. : Serious eye damage
Skin Irrit. : Skin irritation
Skin Sens. : Skin sensitisation
STOT SE : Specific target organ toxicity - single exposure

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research

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on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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