SAFETY DATA SHEET

ZORVEC ENCANTIA™ 330 SE

Version	Revision Date:	SDS Number:	Date of last issue: -
0.0	30.05.2023	800080000576	Date of first issue: 30.05.2023

Corteva Agriscience™ encourages you and expects you to read and understand the entire SDS as there is important information throughout the document. This SDS provides users with information relating to the protection of human health and safety at the workplace, protection of the environment and supports emergency response. Product users and applicators should primarily refer to the product label attached to or accompanying the product container. This Safety Data Sheet adheres to the standards and regulatory requirements of South Africa and may not meet the regulatory requirements in other countries.

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

1.1 Product identifier

Trade name : ZORVEC ENCANTIA™ 330 SE

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 IDENTIFICATION
Manufacturer/importer
Corteva Agriscience RSA Proprietary Limited (“Corteva Agriscience RSA”)
Block A, 2nd Floor, Lakefield Office Park, 272 West Avenue
Centurion, Gauteng, 0163
South Africa

Customer Information Number : +27 (0) 12 683 5700
E-mail address : SDS@corteva.com

1.4 Emergency telephone number

24-Hour Local Emergency Contact: +27 82 895 0621
24-Hour Emergency Contact: +32 3 575 55 55

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Flammable liquids, Category 4	H227: Combustible liquid.
Acute toxicity, Category 5	H303: May be harmful if swallowed.
Acute toxicity, Category 5	H333: May be harmful if inhaled.
Aspiration toxicity, Category 1	H304: May be fatal if swallowed and enters airways.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Specific target organ toxicity - repeated exposure, Category 2	H373: May cause damage to organs through prolonged or repeated exposure.
Short-term (acute) aquatic hazard, Cate-	H400: Very toxic to aquatic life.

gory 1	
Long-term (chronic) aquatic hazard, Category 1	H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Hazard pictograms :

Signal word : Danger

Hazard statements :

H227 Combustible liquid.
H303 May be harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H317 May cause an allergic skin reaction.
H333 May be harmful if inhaled.
H373 May cause damage to organs through prolonged or repeated exposure.
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.

Precautionary statements :

Prevention:

P260 Do not breathe mist, vapours or spray.

Response:

P314 Get medical advice/ attention if you feel unwell.
P301 + P313 IF SWALLOWED: Get medical advice/attention.
P302+P352 IF ON SKIN: Wash with plenty of water for at least 15 minutes.
P391 Collect spillage.

Disposal:

P501 Dispose of contents/container in accordance with applicable regulations.
SP 1 Do not contaminate water with the product or its container (Do not clean application equipment near surface water/Avoid contamination via drains from farmyards and roads).

Hazardous components which must be listed on the label:

famoxadone (ISO)
5-chloro-2-methyl-4-isothiazolin-3-one
2-methylisothiazol-3(2H)-one

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

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
famoxadone (ISO)	131807-57-3 612-206-00-3 01-2120897740-43-0000, 01-2120897740-43-0001	STOT RE 2; H373 (Eyes) Aquatic Acute 1; H400 Aquatic Chronic 1; H410 _____ M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10	28,3
oxathiapiprolin (ISO)	1003318-67-9 613-332-00-1	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 _____ M-Factor (Chronic aquatic toxicity): 1	2,83
Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt	1335202-81-7 01-2119560592-37	Skin Irrit. 2; H315 Eye Dam. 1; H318 Aquatic Chronic 3; H412	>= 1 - < 2,5
5-chloro-2-methyl-4-isothiazolin-3-one	26172-55-4 247-500-7	Acute Tox. 3; H301 Acute Tox. 2; H330 Acute Tox. 2; H310 Skin Corr. 1; H314 Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 _____ M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 1	>= 0,0002 - < 0,0015
2-methylisothiazol-3(2H)-one	2682-20-4 220-239-6 613-326-00-9	Acute Tox. 3; H301 Acute Tox. 2; H330 Acute Tox. 3; H311 Skin Corr. 1B; H314 Eye Dam. 1; H318	>= 0,0002 - < 0,0015

		Skin Sens. 1A; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 _____ M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 1	

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Never give anything by mouth to an unconscious person.

If inhaled : Move to fresh air.
Consult a physician after significant exposure.
Artificial respiration and/or oxygen may be necessary.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off immediately with soap and plenty of water.
In the case of skin irritation or allergic reactions see a physician.
Wash contaminated clothing before re-use.

In case of eye contact : If easy to do, remove contact lens, if worn.
Hold eye open and rinse slowly and gently with water for 15-20 minutes.
If eye irritation persists, consult a specialist.

If swallowed : Call a physician or poison control centre immediately.
Do not induce vomiting without medical advice.
If victim is conscious:
Rinse mouth with water.
Drink 1 or 2 glasses of water.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : No cases of human intoxication are known and the symptoms of experimental intoxication are not known.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Water spray Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical
Unsuitable extinguishing media	:	Do not use direct water stream. High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting	:	Exposure to combustion products may be a hazard to health. Vapours may form explosive mixtures with air. Do not allow run-off from fire fighting to enter drains or water courses. Flash back possible over considerable distance.
Hazardous combustion products	:	During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides (NOx) Carbon oxides

5.3 Advice for firefighters

Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.
Specific extinguishing methods	:	Remove undamaged containers from fire area if it is safe to do so. Evacuate area. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Further information	:	Do not use a solid water stream as it may scatter and spread fire.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Use personal protective equipment. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

6.2 Environmental precautions

Environmental precautions : If the product contaminates rivers and lakes or drains inform respective authorities.
Discharge into the environment must be avoided.
Prevent further leakage or spillage if safe to do so.
Prevent spreading over a wide area (e.g. by containment or oil barriers).
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained.
Prevent from entering into soil, ditches, sewers,underwater.
See Section 12, Ecological Information.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Clean up remaining materials from spill with suitable absorbant.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in.
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, recovered material should be stored in a vented container.
Keep in suitable, closed containers for disposal.
Wipe up with absorbent material (e.g. cloth, fleece).
Non-sparking tools should be used.
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).
Suppress (knock down) gases/vapours/mists with a water spray jet.
See Section 13, Disposal Considerations, for additional information.

6.4 Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Local/Total ventilation : Use with local exhaust ventilation.
Advice on safe handling : Avoid formation of aerosol.
Provide sufficient air exchange and/or exhaust in work rooms.
Handle in accordance with good industrial hygiene and safety practice.
Avoid exposure - obtain special instructions before use.
Smoking, eating and drinking should be prohibited in the application area.
Avoid inhalation of vapour or mist.
Do not swallow.
Avoid contact with skin and eyes.
Keep container tightly closed.

Keep away from heat and sources of ignition.
Take precautionary measures against static discharges.
Take care to prevent spills, waste and minimize release to the environment.
Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Regular cleaning of equipment, work area and clothing. Keep working clothes separately. Contaminated work clothing should not be allowed out of the workplace. For environmental protection remove and wash all contaminated protective equipment before re-use.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in a closed container. No smoking. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in properly labelled containers. Store in accordance with the particular national regulations.

Advice on common storage : Strong oxidizing agents
Explosives
Gases

7.3 Specific end use(s)

Specific use(s) : Plant protection products subject to Regulation (EC) No 1107/2009.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Propanediol	Workers	Inhalation	Long-term local effects	10 mg/m3
	Workers	Inhalation	Long-term systemic effects	168 mg/m3
	Consumers	Inhalation	Long-term local effects	10 mg/m3
	Consumers	Inhalation	Long-term systemic effects	50 mg/m3
Glycerides, mixed decanoyl and octanoyl	Workers	Inhalation	Long-term systemic effects	177,79 mg/m3
	Workers	Skin contact	Long-term systemic effects	25,21 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	43,84 mg/m3
	Consumers	Skin contact	Long-term systemic effects	12,61 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic	12,61 mg/kg

			effects	bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
Propanediol	Fresh water	260 mg/l
	Marine water	26 mg/l
	Intermittent use/release	183 mg/l
	Sewage treatment plant	20000 mg/l
	Fresh water sediment	572 mg/kg
	Marine sediment	57,2 mg/kg
	Soil	50 mg/kg
Glycerides, mixed decanoyl and octanoyl	Oral (Secondary Poisoning)	0,03 mg/kg food

8.2 Exposure controls

Engineering measures

Provide for appropriate exhaust ventilation and dust collection at machinery.
Use sufficient ventilation to keep employee exposure below recommended limits.

Personal protective equipment

Eye/face protection : Wear protective eyewear to prevent contact with this substance.
Safety glasses with side-shields conforming to EN166

Hand protection

Remarks : The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it. Gloves must be inspected prior to use.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin and body protection : Manufacturing and processing work:
Full protective clothing Type 5 (EN 13982-2)
Spray application - outdoor:
Tractor / sprayer with hood:
No personal body protection normally required.
Spray application - indoor:
Motorized greenhouse sprayer:
Full protective clothing Type 4 (EN 14605)
Tractor / sprayer without hood:
Full protective clothing Type 4 (EN 14605)
Nitrile rubber boots (EN 13832-3 / EN ISO 20345).
Backpack / knapsack sprayer:
Full protective clothing Type 4 (EN 14605)
Nitrile rubber boots (EN 13832-3 / EN ISO 20345).
Mechanical automatized spray application in closed tunnel:
No personal body protection normally required.
To optimize the ergonomy it may be recommended to use cotton underwear when wearing some fabrics. Take advice from supplier.
Garment materials that are resistant to both water vapour and air will maximise wearing comfort. Materials should be robust to maintain the integrity and barrier in use.
The permeation resistance of the fabric must be verified independently of the « type » protection recommended, to ensure

		an appropriate performance level of the material adequate to the corresponding agent and type of exposure. When exceptional circumstances require an access to the treated area before the end of re-entry periods, wear full protective clothing Type 6(EN 13034), nitrile rubber gloves class 3 (EN 374) and nitrile rubber boots (EN 13832-3 / EN ISO 20345). Mixer and loaders must wear: Full protective clothing Type 5 + 6 (EN ISO 13982-2 / EN 13034) Rubber apron Nitrile rubber boots (EN 13832-3 / EN ISO 20345).
Respiratory protection	:	Manufacturing and processing work: Half mask with a particle filter FFP1 (EN149)
Protective measures	:	The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. All chemical protective clothing should be visually inspected prior to use. Clothing and gloves should be replaced in case of chemical or physical damage or if contaminated.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	liquid
Colour	:	off-white
Odour	:	none
Odour Threshold	:	No data available
pH	:	not determined
Melting point/range	:	Not applicable
Freezing point		No data available
Boiling point/boiling range	:	> 100 °C
Flash point	:	>= 77 °C Method: closed cup
Evaporation rate	:	not determined
Flammability (solid, gas)	:	No data available
Upper explosion limit / Upper flammability limit	:	not determined
Lower explosion limit / Lower flammability limit	:	not determined
Vapour pressure	:	not determined
Relative density	:	1,05 - 1,12

Density	:	1,07 g/mL
Solubility(ies)		
Water solubility	:	dispersible
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	not determined
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

9.2 Other information

Self-ignition	:	422 °C

SECTION 10: Stability and reactivity

10.1 Reactivity

Not classified as a reactivity hazard.

10.2 Chemical stability

No decomposition if stored and applied as directed.
Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	Stable under recommended storage conditions. Vapours may form explosive mixture with air.

10.4 Conditions to avoid

Conditions to avoid	:	Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid	:	Strong acids Strong bases

10.6 Hazardous decomposition products

Decomposition products depend upon temperature, air supply and the presence of other materials.
Decomposition products can include and are not limited to:
Nitrogen oxides (NOx)
Carbon oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat, female): 5.000 mg/kg
Method: OECD Test Guideline 425

Acute inhalation toxicity : LC50 (Rat, male and female): > 7,0 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rat, male and female): > 5.000 mg/kg
Method: OECD Test Guideline 402

Components:

famoxadone (ISO):

Acute oral toxicity : LD50 (Rat, Male and female): > 5.000 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat, male and female): > 5,3 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rat, Male and female): > 2.000 mg/kg
Method: OECD Test Guideline 402

oxathiapiprolin (ISO):

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 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): > 5.000 mg/kg

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

Acute oral toxicity : LD50 (Rat, female): 4.445 mg/kg

Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

5-chloro-2-methyl-4-isothiazolin-3-one:

Acute oral toxicity : LD50 (Rat): 64 mg/kg

Acute inhalation toxicity : LC50 (Rat): 0,33 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): 87,12 mg/kg

2-methylisothiazol-3(2H)-one:

Acute oral toxicity : LD50 (Rat, female): 183 mg/kg
Method: OECD Test Guideline 401

LD50 (Rat, male): 235 mg/kg
Method: OECD Test Guideline 401

Acute toxicity estimate: 183 mg/kg
Method: Calculation method

Acute inhalation toxicity : LC50 (Rat): 0,11 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute toxicity estimate: 0,11 mg/l
Test atmosphere: dust/mist
Method: Calculation method

Acute dermal toxicity : LD50 (Rat): 242 mg/kg
Method: OECD Test Guideline 402

Acute toxicity estimate: 242 mg/kg
Method: Calculation method

Skin corrosion/irritation

Product:

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation

Components:

famoxadone (ISO):

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation

oxathiapiprolin (ISO):

Species : Rabbit
Result : No skin irritation

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

Species : Rabbit
Result : Skin irritation

5-chloro-2-methyl-4-isothiazolin-3-one:

Species : Rabbit
Result : Corrosive

2-methylisothiazol-3(2H)-one:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Corrosive

Serious eye damage/eye irritation

Product:

Species : Rabbit
Method : OECD Test Guideline 405
Result : No eye irritation

Components:

famoxadone (ISO):

Species : Rabbit
Method : OECD Test Guideline 405
Result : No eye irritation

oxathiapiprolin (ISO):

Species : Rabbit
Result : No eye irritation

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

Species : Rabbit
Result : Corrosive

5-chloro-2-methyl-4-isothiazolin-3-one:

Species : Rabbit
Result : Corrosive

2-methylisothiazol-3(2H)-one:

Species : Rabbit
Result : Corrosive

Respiratory or skin sensitisation

Product:

Test Type	:	Buehler Test
Species	:	Guinea pig
Assessment	:	May cause sensitisation by skin contact.
Method	:	OECD Test Guideline 406

Components:

famoxadone (ISO):

Test Type	:	Maximisation Test
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Did not cause sensitisation on laboratory animals.

oxathiapiprolin (ISO):

Test Type	:	Maximisation Test
Species	:	Guinea pig
Result	:	Does not cause skin sensitisation.

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

Species	:	Guinea pig
Assessment	:	Does not cause skin sensitisation.

5-chloro-2-methyl-4-isothiazolin-3-one:

Species	:	Guinea pig
Result	:	May cause sensitisation by skin contact.

2-methylisothiazol-3(2H)-one:

Species	:	Guinea pig
Assessment	:	The product is a skin sensitiser, sub-category 1A.
Method	:	OECD Test Guideline 406
Remarks	:	Has caused allergic skin reactions when tested in guinea pigs.
Remarks	:	For respiratory sensitization: No relevant data found.

Germ cell mutagenicity

Components:

famoxadone (ISO):

Germ cell mutagenicity- Assessment	:	Did not show mutagenic effects in animal experiments.

oxathiapiprolin (ISO):

Germ cell mutagenicity- Assessment	:	Animal genetic toxicity studies were negative.

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

Germ cell mutagenicity- Assessment : In vitro genetic toxicity studies were negative., Animal genetic toxicity studies were negative.

5-chloro-2-methyl-4-isothiazolin-3-one:

Germ cell mutagenicity- Assessment : In vitro genetic toxicity studies were negative in some cases and positive in other cases., Animal genetic toxicity studies were negative.

2-methylisothiazol-3(2H)-one:

Germ cell mutagenicity- Assessment : Negative in genetic toxicity tests.

Carcinogenicity

Components:

famoxadone (ISO):

Carcinogenicity - Assessment : Did not cause cancer in laboratory animals.

oxathiapiprolin (ISO):

Carcinogenicity - Assessment : Did not cause cancer in laboratory animals.

5-chloro-2-methyl-4-isothiazolin-3-one:

Carcinogenicity - Assessment : Did not cause cancer in laboratory animals.

2-methylisothiazol-3(2H)-one:

Carcinogenicity - Assessment : Did not cause cancer in laboratory animals.

Reproductive toxicity

Components:

famoxadone (ISO):

Reproductive toxicity - Assessment : Has been toxic to the fetus in laboratory animals at doses toxic to the mother.
Did not show mutagenic or teratogenic effects in animal experiments.

oxathiapiprolin (ISO):

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction.
Animal testing did not show any effects on foetal development.

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction.
Did not cause birth defects or any other fetal effects in laboratory animals.

5-chloro-2-methyl-4-isothiazolin-3-one:

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction.

2-methylisothiazol-3(2H)-one:

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction.
Did not cause birth defects in laboratory animals.

STOT - single exposure

Product:

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Components:

famoxadone (ISO):

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

oxathiapiprolin (ISO):

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

5-chloro-2-methyl-4-isothiazolin-3-one:

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

STOT - repeated exposure

Product:

Exposure routes : Oral
Target Organs : Eyes
Assessment : May cause damage to organs through prolonged or repeated exposure.

Components:

famoxadone (ISO):

Exposure routes : Oral
Target Organs : Eyes
Assessment : May cause damage to organs through prolonged or repeated exposure.

oxathiapiprolin (ISO):

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

Components:

famoxadone (ISO):

Remarks : In animals, effects have been reported on the following organs:
Liver
eye effects

oxathiapiprolin (ISO):

Remarks : Based on available data, repeated exposures are not expected to cause significant adverse effects except at very high aerosol concentrations. Repeated excessive aerosol exposures may cause respiratory tract irritation and even death.

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

Remarks : Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

5-chloro-2-methyl-4-isothiazolin-3-one:

Remarks : Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

2-methylisothiazol-3(2H)-one:

Remarks : Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Aspiration toxicity

Product:

May be fatal if swallowed and enters airways.

Components:

famoxadone (ISO):

Based on physical properties, not likely to be an aspiration hazard.

oxathiapiprolin (ISO):

Based on available information, aspiration hazard could not be determined.

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

Based on physical properties, not likely to be an aspiration hazard.

5-chloro-2-methyl-4-isothiazolin-3-one:

Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

2-methylisothiazol-3(2H)-one:
Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 0,085 mg/l Exposure time: 96 h Test Type: Static renewal test Method: OECD Test Guideline 203 LC50 (Cyprinus carpio (Carp)): 3,9 mg/l Exposure time: 96 h Test Type: Static Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,185 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EbC50 (Pseudokirchneriella subcapitata (green algae)): 0,030 mg/l Exposure time: 96 h Method: OECD Test Guideline 201
Toxicity to terrestrial organisms	:	oral LD50: > 200 µg/bee Exposure time: 48 h End point: Acute oral toxicity Species: Apis mellifera (bees) Method: OECD Test Guideline 213 contact LD50: > 222 µg/bee Exposure time: 48 h End point: Acute contact toxicity Species: Apis mellifera (bees) Method: OECD Test Guideline 214

Components:

famoxadone (ISO):

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 0,011 mg/l Exposure time: 96 h Test Type: flow-through test Method: OECD Test Guideline 203 GLP: yes
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,0157 mg/l Exposure time: 48 h

Test Type: flow-through test
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 0,048 mg/l
Exposure time: 72 h
Method: Directive 67/548/EEC, Annex V, C.3.
GLP: yes
Remarks: Information source: Internal study report

M-Factor (Acute aquatic toxicity) : 10

Toxicity to fish (Chronic toxicity) : NOEC: 0,0014 mg/l
Exposure time: 90 d
Species: Oncorhynchus mykiss (rainbow trout)
Method: OECD Test Guideline 210
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,0037 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: flow-through test
Method: OECD Test Guideline 202
GLP: yes

M-Factor (Chronic aquatic toxicity) : 10

Toxicity to soil dwelling organisms : LC50: 470 mg/kg
Exposure time: 14 d
Species: Eisenia fetida (earthworms)
Method: OECD Test Guideline 207
GLP:yes

Toxicity to terrestrial organisms : LC50: > 5.620 mg/kg
Exposure time: 8 d
Species: Colinus virginianus (Bobwhite quail)
Method: OECD Test Guideline 205
GLP:yes

LC50: > 5.620 mg/kg
Exposure time: 8 d
Species: Anas platyrhynchos (Mallard duck)
Method: OECD Test Guideline 205
GLP:yes

LD50: > 0,025 mg/kg
Exposure time: 48 h
Species: Apis mellifera (bees)
Method: OEPP/EPPO Test Guideline 170
GLP:yes
Remarks: Contact

LC50: > 1.000 mg/kg
Exposure time: 48 h
Species: Apis mellifera (bees)
Method: OEPP/EPPO Test Guideline 170
Remarks: Oral

oral LD50: > 2.250 mg/kg
Species: Colinus virginianus (Bobwhite quail)
Remarks: Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

oxathiapiprolin (ISO):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 0,69 mg/l
Exposure time: 96 h
Test Type: Static

LC50 (Lepomis macrochirus (Bluegill sunfish)): > 0,74 mg/l
Exposure time: 96 h
Test Type: Static

LC50 (Cyprinodon variegatus (sheepshead minnow)): > 0,65 mg/l
Exposure time: 96 h
Test Type: static test
Method: OPPTS 850.1075
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,67 mg/l
Exposure time: 48 h
Test Type: Static

Toxicity to algae/aquatic plants : ErC50 (Skeletonema costatum (marine diatom)): 0,351 mg/l
Exposure time: 96 h

ErC50 (Pseudokirchneriella subcapitata (green algae)): 0,142 mg/l
Exposure time: 96 h

Toxicity to fish (Chronic toxicity) : NOEC: 0,46 mg/l
Exposure time: 88 d
Species: Oncorhynchus mykiss (rainbow trout)

NOEC: 0,34 mg/l
Exposure time: 35 d
Species: Cyprinodon variegatus (sheepshead minnow)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,75 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test

NOEC: 0,058 mg/l
Exposure time: 32 d

Species: Americamysis bahia (mysid shrimp)
Test Type: flow-through test

M-Factor (Chronic aquatic toxicity) : 1

Toxicity to terrestrial organisms : LD50: > 2.250 mg/kg
Species: Colinus virginianus (Bobwhite quail)
Method: OPPTS 850.2100

LD50: > 2.250 mg/kg
Species: Poephila guttata (zebra finch)
Method: OPPTS 850.2100

dietary LC50: > 5.620 mg/kg
Exposure time: 5 d
Species: Colinus virginianus (Bobwhite quail)
Method: OECD Test Guideline 205

dietary LC50: > 5.620 mg/kg
Exposure time: 5 d
Species: Anas platyrhynchos (Mallard duck)
Method: OECD Test Guideline 205

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

Toxicity to fish : LC50 (Fish): > 1 - 10 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 2,9 mg/l
Exposure time: 48 h
Test Type: static test

Toxicity to algae/aquatic plants : EC50 (Algae): 29 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to microorganisms : EC50 (Bacteria): 550 mg/l
Exposure time: 3 h

Toxicity to fish (Chronic toxicity) : NOEC: 0,23 mg/l
Exposure time: 72 d
Species: Fish
Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 1,18 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: flow-through test

5-chloro-2-methyl-4-isothiazolin-3-one:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0,19 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203 or Equivalent

		LC50 (Bluegill sunfish (Lepomis macrochirus)): 0,28 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,16 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	NOEC (Selenastrum capricornutum (green algae)): 0,0099 mg/l End point: Growth rate EC50 (Algae (Selenastrum capricornutum)): 0,018 mg/l End point: Growth rate Exposure time: 72 h
M-Factor (Acute aquatic toxicity)	:	10
Toxicity to microorganisms	:	EC50 (Bacteria): 5,7 mg/l Exposure time: 16 h
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,172000 mg/l End point: number of offspring Exposure time: 21 d Species: Daphnia magna (Water flea) LOEC: 0,572000 mg/l End point: number of offspring Exposure time: 21 d Species: Daphnia magna (Water flea)
M-Factor (Chronic aquatic toxicity)	:	1

2-methylisothiazol-3(2H)-one:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 4,77 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 or Equivalent
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Daphnia magna (Water flea)): 0,93 - 1,9 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (Algae (Selenastrum capricornutum)): 0,158 mg/l End point: Growth rate Exposure time: 72 h Method: OECD Test Guideline 201
M-Factor (Acute aquatic toxicity)	:	10
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,04 mg/l Exposure time: 21 d Species: Daphnia magna Method: OECD Test Guideline 211 or Equivalent

M-Factor (Chronic aquatic toxicity) : 1

Ecotoxicology Assessment

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Components:

famoxadone (ISO):

Biodegradability : Result: Not readily biodegradable.

oxathiapiprolin (ISO):

Biodegradability : Result: Not readily biodegradable.

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 100 %
Exposure time: 28 d
Method: OECD Test Guideline 301B or Equivalent
Remarks: 10-day Window: Pass

5-chloro-2-methyl-4-isothiazolin-3-one:

Biodegradability : Test Type: aerobic
Concentration: 6 mg/l
Result: Readily biodegradable.
Biodegradation: 98 %
Exposure time: 2 d
Method: OECD Test Guideline 302B or Equivalent
Remarks: 10-day Window: Not applicable

2-methylisothiazol-3(2H)-one:

Biodegradability : Result: Readily biodegradable.
Remarks: Material is expected to be readily biodegradable.

Biodegradation: 98 %
Exposure time: 48 d
Method: Simulation study

12.3 Bioaccumulative potential

Components:

famoxadone (ISO):

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
Bioconcentration factor (BCF): 2.950
Method: OECD Test Guideline 305
GLP: yes
Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : Remarks: No relevant data found.

oxathiapiprolin (ISO):

Bioaccumulation : Bioconcentration factor (BCF): 62

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

Bioaccumulation : Bioconcentration factor (BCF): 2 - 1.000

Partition coefficient: n-octanol/water : log Pow: 2,89
Remarks: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

5-chloro-2-methyl-4-isothiazolin-3-one:

Partition coefficient: n-octanol/water : log Pow: -0,71 - 0,75
Method: Measured
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

2-methylisothiazol-3(2H)-one:

Bioaccumulation : Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: -0,75
Method: Measured
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

12.4 Mobility in soil

Components:

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

Distribution among environmental compartments : Remarks: No relevant data found.

2-methylisothiazol-3(2H)-one:

Distribution among environmental compartments : Remarks: No relevant data found.

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.

Components:

famoxadone (ISO):

Assessment : This substance is not considered to be persistent, bioaccumu-

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

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

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).

5-chloro-2-methyl-4-isothiazolin-3-one:

Assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

2-methylisothiazol-3(2H)-one:

Assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

12.6 Other adverse effects

Product:

Endocrine disrupting potential : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Components:

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

5-chloro-2-methyl-4-isothiazolin-3-one:

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

2-methylisothiazol-3(2H)-one:

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or

listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.
If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

SECTION 14: Transport information

14.1 UN number

UNRTDG : UN 3082

IMDG : UN 3082

IATA : UN 3082

14.2 UN proper shipping name

UNRTDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Famoxadone, Oxathiapiprolin)

IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Famoxadone, Oxathiapiprolin)

IATA : Environmentally hazardous substance, liquid, n.o.s.
(Famoxadone, Oxathiapiprolin)

14.3 Transport hazard class(es)

UNRTDG : 9

IMDG : 9

IATA : 9

14.4 Packing group

UNRTDG
Packing group : III
Labels : 9

IMDG
Packing group : III
Labels : 9
EmS Code : F-A, S-F
Remarks : Stowage category A

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

IMDG

Marine pollutant	:	yes(Famoxadone, Oxathiapiprolin)

14.6 Special precautions for user

Marine Pollutants assigned UN number 3077 and 3082 in single or combination packaging containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 KG or less for solids may be transported as non-dangerous goods as provided in section 2.10.2.7 of IMDG code, IATA Special provision A197, and ADR/RID special provision 375.

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	E1	ENVIRONMENTAL HAZARDS

15.2 Chemical safety assessment

A Chemical Safety Assessment is not required for this substance.
The mixture is evaluated within the frame of the provisions of Regulation (EC) No. 1107/2009.
Refer to the label for exposure assessment information.

SECTION 16: Other information

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.
Classification was done in accordance with UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Purple Book and complies with the Regulations for Hazardous Chemical Agents, 2021.

Full text of H-Statements

H301	:	Toxic if swallowed.
H310	:	Fatal in contact with skin.
H311	:	Toxic in contact with skin.
H314	:	Causes severe skin burns and eye damage.
H315	:	Causes skin irritation.
H317	:	May cause an allergic skin reaction.
H318	:	Causes serious eye damage.
H330	:	Fatal if inhaled.
H373	:	May cause damage to organs through prolonged or repeated exposure if swallowed.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
H412	:	Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Dam.	:	Serious eye damage
Skin Corr.	:	Skin corrosion
Skin Irrit.	:	Skin irritation
Skin Sens.	:	Skin sensitisation
STOT RE	:	Specific target organ toxicity - repeated exposure

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; 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 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;

SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals 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

Other information : Take notice of the directions of use on the label.

Classification of the mixture:		**Classification procedure:**
Flam. Liq. 4	H227	
Acute Tox. 5	H303	
Acute Tox. 5	H333	
Asp. Tox. 1	H304	
Skin Sens. 1	H317	Based on product data or assessment
STOT RE 2	H373	Calculation method
Aquatic Acute 1	H400	Based on product data or assessment
Aquatic Chronic 1	H410	Calculation method

Product code: GF-3857

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.

ZA / 6N