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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 : AUBAINE™ 518 SC

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

Use of the Sub- : Plant Protection Product, Herbicide

stance/Mixture

1.3 Details of the supplier of the safety data sheet

COMPANY IDENTIFICATION

Manufacturer/importer

Corteva Agriscience RSA Proprietary Limited Block A, 2nd Floor, Lakefield Office Park, 272 West Avenue Centurion, Gauteng, 1063 SOUTH AFRICA

Customer Information : +27 (0) 12 683 5700

Number

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

Carcinogenicity, Category 2 H351: Suspected of causing cancer.

Reproductive toxicity, Category 2 H361d: Suspected of damaging the unborn child.

Short-term (acute) aquatic hazard, Cate- H400: Very toxic to aquatic life.

gory 1

Long-term (chronic) aquatic hazard, Cat- H410: Very toxic to aquatic life with long lasting

egory 1 effects.

2.2 Label elements

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Hazard pictograms :





Signal word : Warning

Hazard statements : H351 Suspected of causing cancer.

H361d Suspected of damaging the unborn child.

H410 Very toxic to aquatic life with long lasting effects.

Supplemental Hazard

Statements

EUH401 To avoid risks to human health and the envi-

ronment, comply with the instructions for use.

Precautionary statements : P102 Keep out of reach of children.

P103 Read carefully and follow all instructions. P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been

read and understood.

P210 Keep away from heat/ sparks/ open flames/ hot surfac-

es. No smoking.

P233 Keep container tightly closed. P234 Keep only in original container.

Prevention:

P260 Do not breathe mist.

P262 Do not get in eyes, on skin, or on clothing.

P264 Wash hands and face thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P272 Contaminated work clothing should not be allowed out of the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protec-

tion/ face protection.

P284 Wear respiratory protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P302 + P352 IF ON SKIN: Wash with plenty of water.

P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P312 Call a POISON CENTER/ doctor if you feel unwell.

P360 Rinse immediately contaminated clothing and skin with

plenty of water before removing clothes.

P362 Take off contaminated clothing.

Storage:





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P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Hazardous components which must be listed on the label:

Additional Labelling

chlorotoluron (ISO)

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

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

CAS-No.	Classification	Concentration
EC-No.		(% w/w)
Index-No.		
Registration number		
15545-48-9	Carc. 2; H351	44,25
239-592-2		
616-105-00-5	Aquatic Acute 1;	
	H400	
	H410	
82558-50-7	Aquatic Acute 1;	1,68
616-043-00-9	•	
	H410	
	NA Franks (Assets	
2024 22 5		>= 0.005
		>= 0,025 - <
		0,05
013-000-00-0		
	11714	
	M-Factor (Acute	
	EC-No. Index-No. Registration number 15545-48-9 239-592-2 616-105-00-5	EC-No. Index-No. Registration number 15545-48-9 239-592-2 616-105-00-5 Repr. 2; H351 Repr. 2; H361d Aquatic Acute 1; H400 Aquatic Chronic 1; H410 82558-50-7 407-190-8 616-043-00-9 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10 2634-33-5 220-120-9 Acute Tox. 4; H302 Skin Irrit. 2; H315

For explanation of abbreviations see section 16.





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SECTION 4: First aid measures

4.1 Description of first aid measures

Protection of first-aiders : If potential for exposure exists refer to Section 8 for specific

personal protective equipment.

If inhaled : Move person to fresh air. If person is not breathing, call an

emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment

advice.

In case of skin contact : Take off contaminated clothing. Rinse skin immediately with

plenty of water for 15-20 minutes. Call a poison control center

or doctor for treatment advice.

In case of eye contact : Hold eyes open and rinse slowly and gently with water for 15-

20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control

center or doctor for treatment advice.

If swallowed : Call a poison control center or doctor immediately for treat-

ment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison

control center or doctor.

Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : No specific antidote.

Treatment of exposure should be directed at the control of

symptoms and the clinical condition of the patient.

Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or

doctor, or going for treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Water spray

Alcohol-resistant foam

Unsuitable extinguishing

media

None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire- : Exposure to combustion products may be a hazard to health.





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fighting Do not allow run-off from fire fighting to enter drains or water

courses.

Hazardous combustion prod: :

ucts

Carbon oxides

Nitrogen oxides (NOx)

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 meth-

ods

Remove undamaged containers from fire area if it is safe to do

SO.

Evacuate area.

Use extinguishing measures that are appropriate to local cir-

cumstances and the surrounding environment. Use water spray to cool unopened containers.

Further information : 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.

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 absorb-

ant.

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,

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Recovered material should be stored in a vented container. The vent must prevent the ingress of water as further reaction with spilled materials can take place which could lead to over-

pressurization of the container.

Keep in suitable, closed containers for disposal. Wipe up with absorbent material (e.g. cloth, fleece).

Soak up with inert absorbent material (e.g. sand, silica gel,

acid binder, universal binder, sawdust).

See Section 13, Disposal Considerations, for additional infor-

mation.

6.4 Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Do not breathe vapours/dust.

Do not smoke.

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 ap-

plication area.

Avoid inhalation of vapour or mist.

Do not swallow.

Avoid contact with skin and eyes.

Avoid contact with eyes.

Avoid prolonged or repeated contact with skin.

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.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

Store in a closed container. 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

Packaging material : Unsuitable material: None known.

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:

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Substance name	End Use	Exposure routes	Potential health effects	Value		
Propylene glycol	Workers	Skin contact	Acute systemic effects			
	Remarks:No data available					
	Workers	Inhalation	Acute systemic ef- fects			
	Remarks:No data available					
	Workers	Skin contact	Acute local effects			
	Remarks:No da	ata available	•	•		
	Workers	Inhalation	Acute local effects			
	Remarks:No data available					
	Workers	Skin contact	Long-term systemic effects			
	Remarks:No data available					
	Workers	Inhalation	Long-term systemic effects	168 mg/m3		
	Workers	Skin contact	Long-term local ef- fects			
	Remarks:No data available					
	Workers	Inhalation	Long-term local ef- fects	10 mg/m3		
	Consumers	Skin contact	Acute systemic ef- fects			
	Remarks:No data available					
	Consumers	Inhalation	Acute systemic ef- fects			
	Remarks:No data available					
	Consumers	Skin contact	Acute local effects			
	Remarks:No data available					
	Consumers	Inhalation	Acute local effects			
	Remarks:No data available					
	Consumers	Skin contact	Long-term systemic effects			
	Remarks:No data available					
	Consumers	Inhalation	Long-term systemic effects	50 mg/m3		
	Consumers	Skin contact	Long-term local ef- fects			
	Remarks:No data available					
	Consumers	Inhalation	Long-term local ef- fects	10 mg/m3		

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

	, ,	` '
Substance name	Environmental Compartment	Value
Propylene glycol	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 dry
		weight (d.w.)
	Marine sediment	57,2 mg/kg dry
		weight (d.w.)





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Soil 50 mg/kg dry weight (d.w.)

8.2 Exposure controls

Engineering measures

Use engineering controls to maintain airborne level below exposure limit requirements or guide-

If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation.

Local exhaust ventilation may be necessary for some operations.

Personal protective equipment

Eye/face protection Use safety glasses (with side shields).

Safety glasses (with side shields) should be consistent with

EN 166 or equivalent.

Hand protection

Remarks Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use

chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). When prolonged or frequently repeated contact may occur, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended. Glove thickness alone is not a good indicator of the level of protection a glove provides against a chemical substance as this level of protection is also highly dependent on the specific composition of the material that the glove is fabricated from. The thickness of the glove must, depending on model and type of material, generally be more than 0.35 mm to offer sufficient protection for prolonged and frequent contact with the substance. As an exception to this general rule it is known that multilayer laminate gloves may offer prolonged protection at thicknesses less than 0.35 mm. Other glove materials with a thickness of less than 0.35 mm may offer sufficient protection when only brief contact is expected. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instruc-

tions/specifications provided by the glove supplier.

Skin and body protection Wear clean, body-covering clothing. Respiratory protection

Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or

guidelines, use an approved respirator.

Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne

concentration of the material.





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For emergency conditions, use an approved positive-pressure

self-contained breathing apparatus.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : Liquid. Colour : White

Odour : Characteristic

Odour Threshold : No test data available

pH : No test data available

Melting point/range : Not applicable

Freezing point No test data available

Boiling point/boiling range : No test data available

Flash point : $> 100 \, ^{\circ}\text{C}$

Method: closed cup

Evaporation rate : No test data available

Flammability (solid, gas) : Not applicable to liquids

Upper explosion limit / Upper

flammability limit

No test data available

Lower explosion limit / Lower

flammability limit

No test data available

Vapour pressure : No test data available

Relative vapour density : No test data available

Density : 1,13 g/cm3 (20 °C)

Method: Literature

Solubility(ies)

Water solubility : No test data available Auto-ignition temperature : No test data available

Viscosity

Viscosity, kinematic : No test data available

Explosive properties : No test data available

Oxidizing properties : No test data available

9.2 Other information

No data available





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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.

No hazards to be specially mentioned.

None known.

10.4 Conditions to avoid

Conditions to avoid : None known.

10.5 Incompatible materials

Materials to avoid : None.

10.6 Hazardous decomposition products

Carbon oxides

Nitrogen oxides (NOx)

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg

Symptoms: No deaths occurred at this concentration.

Assessment: The substance or mixture has no acute oral tox-

icitv

Remarks: For similar material(s):

Acute inhalation toxicity : Remarks: Prolonged excessive exposure to mist may cause

adverse effects.

Mist may cause irritation of upper respiratory tract (nose and

throat).

Components:

chlorotoluron (ISO):

Acute oral toxicity : LD50 (Rat): > 10.000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5,3 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist





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Assessment: The substance or mixture has no acute inhala-

tion toxicity

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg

Assessment: The substance or mixture has no acute dermal

toxicity

isoxaben (ISO):

Acute oral toxicity : LD50 (Rat): > 10.000 mg/kg

Acute inhalation toxicity : Remarks: Prolonged excessive exposure to dust may cause

adverse effects.

Based on the available data, narcotic effects were not ob-

served.

Based on the available data, respiratory irritation was not ob-

served.

LC50 (Rat): 2,68 mg/l Exposure time: 4 h

Test atmosphere: dust/mist

Assessment: The substance or mixture has no acute inhala-

tion toxicity

Symptoms: No deaths occurred at this concentration.

Remarks: Maximum attainable concentration.

Acute dermal toxicity : LD50 (Rabbit, male and female): > 2.000 mg/kg

Symptoms: No deaths occurred at this concentration.

Assessment: The substance or mixture has no acute dermal

toxicity

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

Acute oral toxicity : LD50 (Rat): 675,3 mg/kg

Acute inhalation toxicity : LC50 (Rat): 0,25 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Assessment: The substance or mixture has no acute inhala-

tion toxicity

Acute dermal toxicity : LD50 (Rabbit): > 5.000 mg/kg

Skin corrosion/irritation

Product:

Result : No skin irritation

Remarks : Brief contact is essentially nonirritating to skin.

Components:

isoxaben (ISO):





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Species : Rabbit

Result : No skin irritation

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

Species : Rabbit Result : Skin irritation

Serious eye damage/eye irritation

Product:

Result : No eye irritation

Remarks : May cause slight eye irritation.

Corneal injury is unlikely.

Components:

isoxaben (ISO):

Species : Rabbit

Result : No eye irritation

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

Species : Rabbit
Result : Corrosive

Respiratory or skin sensitisation

Product:

Remarks : For the active ingredient(s):

Did not cause allergic skin reactions when tested in guinea

pigs.

Remarks : For respiratory sensitization:

No relevant data found.

Components:

chlorotoluron (ISO):

Remarks : Did not cause allergic skin reactions when tested in guinea

pigs.

Remarks : For respiratory sensitization:

No relevant data found.

isoxaben (ISO):

Remarks : Did not cause allergic skin reactions when tested in guinea

pigs.

Remarks : For respiratory sensitization:

No relevant data found.

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

Species : Mouse

Assessment : The product is a skin sensitiser, sub-category 1B.

Germ cell mutagenicity

Components:

chlorotoluron (ISO):

Germ cell mutagenicity- As-

sessment

In vitro genetic toxicity studies were negative.

isoxaben (ISO):

Germ cell mutagenicity- As-

sessment

In vitro genetic toxicity studies were negative., Animal genetic

toxicity studies were predominantly negative.

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

Germ cell mutagenicity- As-

sessment

Not mutagenic when tested in bacterial or mammalian sys-

tems.

Carcinogenicity

Components:

chlorotoluron (ISO):

Carcinogenicity - Assessment

: Limited evidence of carcinogenicity in animal studies

Has caused cancer in some laboratory animals.

isoxaben (ISO):

Carcinogenicity - Assess-

ment

An increase in nonmalignant liver tumors was observed with

isoxaben in one of two species tested.

Reproductive toxicity

Components:

chlorotoluron (ISO):

Reproductive toxicity - Assessment

Suspected human reproductive toxicant

In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to

the parent animals.

Has been toxic to the fetus in laboratory animals at doses toxic to the mother., Did not cause birth defects in laboratory

animals.

isoxaben (ISO):

Reproductive toxicity - As-

sessment

: In animal studies, has been shown to interfere with reproduction in females., Effects have been seen only at doses that

produced significant toxicity to the parent animals.





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Has caused birth defects in laboratory animals only at doses

toxic to the mother.

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

Reproductive toxicity - As-

sessment

In animal studies, did not interfere with reproduction., In ani-

mal studies, did not interfere with fertility.

Did not cause birth defects in laboratory animals.

STOT - single exposure

Components:

chlorotoluron (ISO):

Assessment : Available data are inadequate to determine single exposure

specific target organ toxicity.

isoxaben (ISO):

Assessment : Evaluation of available data suggests that this material is not

an STOT-SE toxicant.

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

Assessment : Evaluation of available data suggests that this material is not

an STOT-SE toxicant.

STOT - repeated exposure

Components:

isoxaben (ISO):

Assessment : The substance or mixture is not classified as specific target

organ toxicant, repeated exposure.

Repeated dose toxicity

Components:

chlorotoluron (ISO):

Remarks : In animals, effects have been reported on the following or-

gans: Blood. Liver. Kidney. Spleen.

isoxaben (ISO):

Remarks : In animals, effects have been reported on the following or-

gans: Liver. Kidney.

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

Remarks : Based on available data, repeated exposures are not antici-

pated to cause significant adverse effects.

Aspiration toxicity

Components:

chlorotoluron (ISO):

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

isoxaben (ISO):

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

SECTION 12: Ecological information

12.1 Toxicity

Components:

chlorotoluron (ISO):

Toxicity to fish : Remarks: Material is very toxic to aquatic organisms

(LC50/EC50/IC50 below 1 mg/L in the most sensitive spe-

cies).

LC50 (Oncorhynchus mykiss (rainbow trout)): 20 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 67 mg/l

Exposure time: 48 h

Toxicity to algae/aquatic

plants

ErC50 (alga Scenedesmus sp.): 0,024 mg/l

End point: Growth rate inhibition

Exposure time: 72 h

Method: OECD Test Guideline 201 or Equivalent

Toxicity to terrestrial organ-

isms

Remarks: Material is moderately toxic to birds on an acute

basis (LD50 between 51 and 500 mg/kg).

Material is slightly toxic to birds on a dietary basis (LC50 be-

tween 1001 and 5000 ppm).

oral LD50: 272 mg/kg bodyweight.

Species: Coturnix japonica (Japanese quail)

dietary LC50: 2150 mg/kg diet.

Species: Coturnix japonica (Japanese quail)

oral LD50: > 177,4 µg/bee Exposure time: 48 h

Species: Apis mellifera (bees)





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contact LD50: > 200 µg/bee

Exposure time: 48 h

isoxaben (ISO):

Toxicity to fish : Remarks: Material is very toxic to aquatic organisms

(LC50/EC50/IC50 below 1 mg/L in the most sensitive spe-

cies).

LC50 (Oncorhynchus mykiss (rainbow trout)): 1,2 mg/l

Exposure time: 96 h Test Type: static test

Method: OECD Test Guideline 203 or Equivalent Remarks: The LC50 value is above the water solubility.

LC50 (Cyprinodon variegatus (sheepshead minnow)): > 0,87

mg/l

Exposure time: 96 h Test Type: static test

Method: OECD Test Guideline 203 or Equivalent Remarks: The LC50 value is above the water solubility.

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 1,3 mg/l

Exposure time: 48 h Test Type: static test

Method: OECD Test Guideline 202 or Equivalent

Toxicity to algae/aquatic

plants

EbC50 (Lemna minor (duckweed)): 0,011 mg/l

End point: Biomass Exposure time: 7 d Test Type: static test

Method: OECD Test Guideline 201 or Equivalent

ErC50 (Pseudokirchneriella subcapitata (green algae)): > 1.4

mg/l

End point: Growth rate inhibition

Exposure time: 72 h Test Type: static test

Method: OECD Test Guideline 201 or Equivalent

ErC50 (Pseudokirchneriella subcapitata (green algae)): > 1,2

mg/l

End point: Growth rate inhibition

Exposure time: 72 h Test Type: static test

ErC50 (Skeletonema costatum (marine diatom)): > 0,49 mg/l

Exposure time: 72 h Test Type: static test

M-Factor (Acute aquatic tox-

icity)

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Toxicity to microorganisms : EC50 (activated sludge): > 100 mg/l

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End point: Respiration rates.

Exposure time: 3 h

Test Type: Respiration inhibition

Toxicity to fish (Chronic tox-

icity)

NOEC: 0,4 mg/l End point: growth Exposure time: 33 d

Species: Pimephales promelas (fathead minnow)

Test Type: semi-static test

LOEC: > 0,40 mg/l End point: growth Exposure time: 33 d

Species: Pimephales promelas (fathead minnow)

Test Type: semi-static test

MATC (Maximum Acceptable Toxicant Level): > 0,40 mg/l

End point: growth Exposure time: 33 d

Species: Pimephales promelas (fathead minnow)

Test Type: semi-static test

Toxicity to daphnia and other : aquatic invertebrates (Chron-

ic toxicity)

NOEC: 0,69 mg/l End point: growth Exposure time: 21 d

Species: Daphnia magna (Water flea)

Test Type: static test

Method: OECD Test Guideline 211 or Equivalent

LOEC: 1,01 mg/l End point: growth Exposure time: 21 d

Species: Daphnia magna (Water flea)

Test Type: static test

Method: OECD Test Guideline 211 or Equivalent

MATC (Maximum Acceptable Toxicant Level): 0,85 mg/l

End point: growth Exposure time: 21 d

Species: Daphnia magna (Water flea)

Test Type: static test

Method: OECD Test Guideline 211 or Equivalent

NOEC: 0,841 mg/l Exposure time: 28 d

Species: saltwater mysid Mysidopsis bahia

Test Type: flow-through test

LOEC: > 0,841 mg/l Exposure time: 28 d

Species: saltwater mysid Mysidopsis bahia

Test Type: flow-through test

NOEC: 32 mg/l

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End point: mortality Exposure time: 28 d

Species: Midge (Chironomus riparius)

Test Type: static test

Method: OECD Test Guideline 211 or Equivalent

LOEC: 64 mg/l End point: mortality Exposure time: 28 d

Species: Midge (Chironomus riparius)

Test Type: static test

Method: OECD Test Guideline 211 or Equivalent

MATC (Maximum Acceptable Toxicant Level): 48 mg/l

End point: mortality Exposure time: 28 d

Species: Midge (Chironomus riparius)

Test Type: static test

Method: OECD Test Guideline 211 or Equivalent

M-Factor (Chronic aquatic

toxicity)

Toxicity to soil dwelling or-

ganisms

10

LC50: > 500 mg/kg Exposure time: 14 d

Species: Eisenia fetida (earthworms)

Toxicity to terrestrial organ-

isms

Remarks: Material is practically non-toxic to birds on an acute

basis (LD50 > 2000 mg/kg).

Material is moderately toxic to birds on a dietary basis (LC50

between 501 and 1000 ppm).

oral LD50: > 2000 mg/kg bodyweight.

Exposure time: 14 d

Species: Colinus virginianus (Bobwhite quail)

LC50: > 937 mg/kg diet. Exposure time: 8 d

Species: Colinus virginianus (Bobwhite quail)

oral LD50: > 100 micrograms/bee Species: Apis mellifera (bees)

contact LD50: > 100 micrograms/bee

Exposure time: 48 h

Species: Apis mellifera (bees)

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

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

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

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1,9 mg/l

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Exposure time: 96 h

Test Type: flow-through test

Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 3,7 mg/l

Exposure time: 48 h

Test Type: flow-through test

Method: OECD Test Guideline 202 or Equivalent

LC50 (Mysid shrimp (Mysidopsis bahia)): 1,9 mg/l

Exposure time: 96 h

Toxicity to algae/aquatic

plants

ErC50 (Pseudokirchneriella subcapitata (green algae)): 0,8

mg/

Exposure time: 72 h Test Type: static test

Method: OECD Test Guideline 201 or Equivalent

NOEC (Pseudokirchneriella subcapitata (green algae)): 0,21

mg/l

End point: Growth rate Exposure time: 72 h Test Type: static test

Method: OECD Test Guideline 201 or Equivalent

ErC50 (diatom Skeletonema costatum): 0,36 mg/l

Exposure time: 72 h Test Type: static test

Method: OECD Test Guideline 201 or Equivalent

NOEC (diatom Skeletonema costatum): 0,15 mg/l

End point: Growth rate Exposure time: 72 h Test Type: static test

Method: OECD Test Guideline 201 or Equivalent

M-Factor (Acute aquatic tox-

icity)

Toxicity to microorganisms : EC50 (Bacteria (active sludge)): 28,52 mg/l

Exposure time: 3 h

Test Type: Respiration inhibition of activated sludge

12.2 Persistence and degradability

Components:

chlorotoluron (ISO):

Biodegradability : Remarks: Expected to degrade slowly in the environment.

Stability in water : Degradation half life (DT50): 28 d

pH: 5 - 9

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isoxaben (ISO):

Biodegradability : Result: Not biodegradable

Remarks: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready

biodegradability.

Biodegradation rate may increase in soil and/or water with

acclimation.

Biodegradation: 1 % Exposure time: 28 d

Method: OECD Test Guideline 301B or Equivalent

Remarks: 10-day Window: Fail

Chemical Oxygen Demand

(COD)

1,77 mg/g

ThOD : 1,98 kg/kg

Stability in water : Test Type: Hydrolysis

Degradation half life (half-life): > 5 d

pH: 7,0

Photodegradation : Test Type: Half-life (indirect photolysis)

Sensitiser: OH radicals

Concentration: 1.500.000 1/cm3 Rate constant: 2.045E-10 cm3/s

Method: Estimated.

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

Biodegradability : Result: Readily biodegradable.

Biodegradation: 24 % Exposure time: 28 d

Method: OECD Test Guideline 301B or Equivalent Remarks: Abiotic degradation: The material is rapidly de-

gradable by abiotic means.

12.3 Bioaccumulative potential

Components:

octanol/water

chlorotoluron (ISO):

Partition coefficient: n-

log Pow: 2,5 (25 °C) Method: Measured

GLP: yes

Remarks: Bioconcentration potential is low (BCF < 100 or Log

Pow < 3).

isoxaben (ISO):

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)

Exposure time: 28 d

Bioconcentration factor (BCF): 70,5

Method: Measured





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Partition coefficient: n-

octanol/water

: log Pow: 3,9 (20 °C) Method: Measured

Remarks: Bioconcentration potential is low (BCF < 100 or Log

Pow < 3).

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

Bioaccumulation : Species: Fish

Bioconcentration factor (BCF): 3,2

Method: Calculated.

Partition coefficient: n-

octanol/water

log Pow: 1,19

Method: OECD Test Guideline 117 or Equivalent

Remarks: Bioconcentration potential is low (BCF < 100 or Log

Pow < 3).

12.4 Mobility in soil

Components:

chlorotoluron (ISO):

Distribution among environ-

mental compartments

Koc: 108 - 384

Remarks: Potential for mobility in soil is high (Koc between 50

and 150).

Stability in soil : Dissipation time: 30 - 40 d

isoxaben (ISO):

Distribution among environ-

mental compartments

Koc: 700 - 1290

Remarks: Potential for mobility in soil is low (Koc between 500

and 2000).

Stability in soil : Test Type: aerobic degradation

Dissipation time: 0,358 - 0,883 yr

Test Type: Photolysis Dissipation time: 248 d

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

Distribution among environ-

mental compartments

Koc: 104

Method: Estimated.

Remarks: Potential for mobility in soil is high (Koc between 50

and 150).

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an im-

portant fate process.

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:

chlorotoluron (ISO):

Assessment : This substance has not been assessed for persistence, bioac-

cumulation and toxicity (PBT).

isoxaben (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).

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

Assessment : This substance has not been assessed for persistence, bioac-

cumulation and toxicity (PBT).

12.6 Other adverse effects

Product:

Endocrine disrupting poten: :

tial

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:

chlorotoluron (ISO):

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list

of substances that deplete the ozone layer.

isoxaben (ISO):

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list

of substances that deplete the ozone layer.

1,2-benzisothiazol-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 gener-





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ator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regu-

lations.

If the material as supplied becomes a waste, follow all appli-

cable 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.

(Chlorotoluron)

IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Chlorotoluron)

IATA : Environmentally hazardous substance, liquid, n.o.s.

(Chlorotoluron)

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 : 964

aircraft)

Packing instruction (LQ) : Y964
Packing group : III

Labels : Miscellaneous

IATA (Passenger)





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Packing instruction (passen- : 964

ger aircraft)

Packing instruction (LQ) : Y964
Packing group : III

Labels : Miscellaneous

14.5 Environmental hazards

IMDG

Marine pollutant : yes(Chlorotoluron)

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

E1

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

ENVIRONMENTAL HAZARDS

15.2 Chemical safety assessment

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

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.





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Full text of H-Statements

H302 : Harmful if swallowed. H315 : Causes skin irritation.

H317 : May cause an allergic skin reaction.
H318 : Causes serious eye damage.
H351 : Suspected of causing cancer.

H361d : Suspected of damaging the unborn child.

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

Carc. : Carcinogenicity
Eye Dam. : Serious eye damage
Repr. : Reproductive toxicity
Skin Irrit : Skin irritation

Skin Irrit. : Skin irritation
Skin Sens. : Skin sensitisation

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





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Further information

Classification of the mixture: Classification procedure:

Carc. 2 H351 Calculation method
Repr. 2 H361d Calculation method
Aquatic Acute 1 H400 Calculation method
Aquatic Chronic 1 H410 Calculation method

Product code: GF-1993

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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