

SAFETY DATA SHEET



AUBAINE™ 518 SC

Version	Revision Date:	SDS Number:	Date of last issue: -
0.0	30.05.2023	800080004306	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 : AUBAINE™ 518 SC

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

Use of the Sub-stance/Mixture : Plant Protection Product, Herbicide

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, Category 1	H400: Very toxic to aquatic life.
Long-term (chronic) aquatic hazard, Category 1	H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

SAFETY DATA SHEET



AUBAINE™ 518 SC

Version 0.0	Revision Date: 30.05.2023	SDS Number: 800080004306	Date of last issue: - Date of first issue: 30.05.2023
----------------	------------------------------	-----------------------------	--

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 environment, 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 surfaces. 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 protection/ 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:

SAFETY DATA SHEET



AUBAINE™ 518 SC

Version 0.0 Revision Date: 30.05.2023 SDS Number: 800080004306 Date of last issue: -
Date of first issue: 30.05.2023

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

Hazardous components which must be listed on the label:
chlorotoluron (ISO)

Additional Labelling

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

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
chlorotoluron (ISO)	15545-48-9 239-592-2 616-105-00-5	Carc. 2; H351 Repr. 2; H361d Aquatic Acute 1; H400 Aquatic Chronic 1; H410	44,25
isoxaben (ISO)	82558-50-7 407-190-8 616-043-00-9	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10	1,68
1,2-benzisothiazol-3(2H)-one	2634-33-5 220-120-9 613-088-00-6	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 3; H412 M-Factor (Acute aquatic toxicity): 1	>= 0,025 - < 0,05

For explanation of abbreviations see section 16.

AUBAINE[™] 518 SC

Version 0.0	Revision Date: 30.05.2023	SDS Number: 800080004306	Date of last issue: - Date of first issue: 30.05.2023
----------------	------------------------------	-----------------------------	--

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 treatment 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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AUBAINE™ 518 SC

Version 0.0	Revision Date: 30.05.2023	SDS Number: 800080004306	Date of last issue: - Date of first issue: 30.05.2023
----------------	------------------------------	-----------------------------	--

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

Hazardous combustion prod- : Carbon oxides
ucts Nitrogen oxides (NO_x)

5.3 Advice for firefighters

Special protective equipment : In the event of fire, wear self-contained breathing apparatus.
for firefighters Use personal protective equipment.

Specific extinguishing meth- : Remove undamaged containers from fire area if it is safe to do
ods so.
Evacuate area.
Use extinguishing measures that are appropriate to local circumstances 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,

AUBAINE[™] 518 SC

Version 0.0	Revision Date: 30.05.2023	SDS Number: 800080004306	Date of last issue: - Date of first issue: 30.05.2023
----------------	------------------------------	-----------------------------	--

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 information.

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 application 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:

SAFETY DATA SHEET



AUBAINE™ 518 SC

Version 0.0 Revision Date: 30.05.2023 SDS Number: 800080004306 Date of last issue: -
Date of first issue: 30.05.2023

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 effects	
	Remarks:No data available			
	Workers	Skin contact	Acute local effects	
	Remarks:No data 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 effects	
	Remarks:No data available			
	Workers	Inhalation	Long-term local effects	10 mg/m3
	Consumers	Skin contact	Acute systemic effects	
	Remarks:No data available			
	Consumers	Inhalation	Acute systemic effects	
	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 effects	
	Remarks:No data available			
	Consumers	Inhalation	Long-term local effects	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.)

SAFETY DATA SHEET



AUBAINE™ 518 SC

Version 0.0	Revision Date: 30.05.2023	SDS Number: 800080004306	Date of last issue: - Date of first issue: 30.05.2023
----------------	------------------------------	-----------------------------	--

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

Engineering measures

Use engineering controls to maintain airborne level below exposure limit requirements or guidelines.

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 instructions/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.

SAFETY DATA SHEET



AUBAINE™ 518 SC

Version 0.0	Revision Date: 30.05.2023	SDS Number: 800080004306	Date of last issue: - Date of first issue: 30.05.2023
----------------	------------------------------	-----------------------------	--

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 °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/cm ³ (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

AUBAINE[™] 518 SC

Version	Revision Date:	SDS Number:	Date of last issue: -
0.0	30.05.2023	800080004306	Date of first issue: 30.05.2023

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 (NO_x)

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 toxicity
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

SAFETY DATA SHEET



AUBAINE™ 518 SC

Version 0.0	Revision Date: 30.05.2023	SDS Number: 800080004306	Date of last issue: - Date of first issue: 30.05.2023
----------------	------------------------------	-----------------------------	--

Assessment: The substance or mixture has no acute inhalation 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 observed.
Based on the available data, respiratory irritation was not observed.

LC50 (Rat): 2,68 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation 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 inhalation 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):

SAFETY DATA SHEET



AUBAINE™ 518 SC

Version 0.0	Revision Date: 30.05.2023	SDS Number: 800080004306	Date of last issue: - Date of first issue: 30.05.2023
----------------	------------------------------	-----------------------------	--

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.

AUBAINE[™] 518 SC

Version	Revision Date:	SDS Number:	Date of last issue: -
0.0	30.05.2023	800080004306	Date of first issue: 30.05.2023

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- Assessment : In vitro genetic toxicity studies were negative.

isoxaben (ISO):

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

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

Germ cell mutagenicity- Assessment : Not mutagenic when tested in bacterial or mammalian systems.

Carcinogenicity**Components:****chlorotoluron (ISO):**

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies
Has caused cancer in some laboratory animals.

isoxaben (ISO):

Carcinogenicity - Assessment : 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 - Assessment : 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.

SAFETY DATA SHEET



AUBAINE™ 518 SC

Version 0.0	Revision Date: 30.05.2023	SDS Number: 800080004306	Date of last issue: - Date of first issue: 30.05.2023
----------------	------------------------------	-----------------------------	--

Has caused birth defects in laboratory animals only at doses toxic to the mother.

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

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction., In animal 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 organs:
Blood.
Liver.
Kidney.
Spleen.

isoxaben (ISO):

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

AUBAINE™ 518 SC

Version 0.0	Revision Date: 30.05.2023	SDS Number: 800080004306	Date of last issue: - Date of first issue: 30.05.2023
----------------	------------------------------	-----------------------------	--

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

Remarks : Based on available data, repeated exposures are not anticipated 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 species). 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 organisms	: 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 between 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)

SAFETY DATA SHEET



AUBAINE™ 518 SC

Version 0.0	Revision Date: 30.05.2023	SDS Number: 800080004306	Date of last issue: - Date of first issue: 30.05.2023
----------------	------------------------------	-----------------------------	--

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 species).

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 toxicity) : 10

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

SAFETY DATA SHEET



AUBAINE™ 518 SC

Version 0.0	Revision Date: 30.05.2023	SDS Number: 800080004306	Date of last issue: - Date of first issue: 30.05.2023
----------------	------------------------------	-----------------------------	--

End point: Respiration rates.
Exposure time: 3 h
Test Type: Respiration inhibition

Toxicity to fish (Chronic toxicity) : 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 (Chronic 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

SAFETY DATA SHEET



AUBAINE™ 518 SC

Version 0.0	Revision Date: 30.05.2023	SDS Number: 800080004306	Date of last issue: - Date of first issue: 30.05.2023
----------------	------------------------------	-----------------------------	--

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) : 10

Toxicity to soil dwelling organisms : LC50: > 500 mg/kg
Exposure time: 14 d
Species: Eisenia fetida (earthworms)

Toxicity to terrestrial organisms : 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

SAFETY DATA SHEET



AUBAINE™ 518 SC

Version 0.0	Revision Date: 30.05.2023	SDS Number: 800080004306	Date of last issue: - Date of first issue: 30.05.2023
----------------	------------------------------	-----------------------------	--

	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/l 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 toxicity)	: 1
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

SAFETY DATA SHEET



AUBAINE™ 518 SC

Version 0.0	Revision Date: 30.05.2023	SDS Number: 800080004306	Date of last issue: - Date of first issue: 30.05.2023
----------------	------------------------------	-----------------------------	--

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 degradable by abiotic means.

12.3 Bioaccumulative potential

Components:

chlorotoluron (ISO):

Partition coefficient: n-octanol/water : 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

SAFETY DATA SHEET



AUBAINE™ 518 SC

Version 0.0	Revision Date: 30.05.2023	SDS Number: 800080004306	Date of last issue: - Date of first issue: 30.05.2023
----------------	------------------------------	-----------------------------	--

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 environmental 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 environmental 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 environmental 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 important 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.

SAFETY DATA SHEET



AUBAINE™ 518 SC

Version 0.0	Revision Date: 30.05.2023	SDS Number: 800080004306	Date of last issue: - Date of first issue: 30.05.2023
----------------	------------------------------	-----------------------------	--

Components:

chlorotoluron (ISO):

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

isoxaben (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).

1,2-benzisothiazol-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:

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-

SAFETY DATA SHEET



AUBAINE™ 518 SC

Version	Revision Date:	SDS Number:	Date of last issue: -
0.0	30.05.2023	800080004306	Date of first issue: 30.05.2023

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

IATA (Passenger)

SAFETY DATA SHEET



AUBAINE™ 518 SC

Version	Revision Date:	SDS Number:	Date of last issue: -
0.0	30.05.2023	800080004306	Date of first issue: 30.05.2023

Packing instruction (passenger aircraft) : 964
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

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
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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.

SAFETY DATA SHEET



AUBAINE™ 518 SC

Version	Revision Date:	SDS Number:	Date of last issue: -
0.0	30.05.2023	800080004306	Date of first issue: 30.05.2023

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 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; AIIIC - 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; TECL - 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

SAFETY DATA SHEET



AUBAINE™ 518 SC

Version 0.0	Revision Date: 30.05.2023	SDS Number: 800080004306	Date of last issue: - Date of first issue: 30.05.2023
----------------	------------------------------	-----------------------------	--

Further information

Classification of the mixture:

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

Classification procedure:

Calculation method
Calculation method
Calculation method
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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