GARDOMIL GOLD

Version	Revision Date:	SDS Number:	This version replaces all previous versions.
2.0	17.11.2022	S00031995044	

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

1.1 Product identifier

Trade name	:	GARDOMIL GOLD
Design code	:	A9844B

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

Use of the Substance/Mixture	:	Herbicide

1.3 Details of the supplier of the safety data sheet

Company	:	Syngenta SA (Pty) Ltd P.O. Box 1044, No. 4 Krokodildrift Avenue Brits 0250 South Africa
Telephone	:	+27 (0)12 2506 300
Telefax	:	-
E-mail address of person responsible for the SDS	:	sds.ame@syngenta.com

1.4 Emergency telephone number

Emergency telephone number	:	+27 (0) 82 446 8946 (Griffon)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Eye irritation, Category 2	H319: Causes serious eye irritation.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
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.
Specific target organ toxicity - repeated exposure, Category 2, Kidney, Heart, hematopoietic system	H373: May cause damage to organs through prolonged or repeated exposure.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Warning

Hazard statements : H317 May cause an allergic skin reaction.
H373 May cause damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P260 Do not breathe mist or vapours.
P280 Wear protective gloves.

Response:

P314 Get medical advice/ attention if you feel unwell.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.

Hazardous components which must be listed on the label:

terbuthylazine (ISO)
atrazine (ISO)
S-metolachlor
1,2-benzisothiazol-3(2H)-one
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

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)
atrazine (ISO)	1912-24-9 217-617-8 613-068-00-7	Skin Sens. 1; H317 STOT RE 2; H373 (Heart) Aquatic Acute 1; H400 Aquatic Chronic 1;	>= 20 - < 25

		H410 M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	
terbuthylazine (ISO)	5915-41-3 227-637-9 613-323-00-2	Acute Tox. 4; H302 STOT RE 2; H373 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10	>= 20 - < 25
S-metolachlor	87392-12-9 607-432-00-4	Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10	>= 2,5 - < 10
poly(oxy-1,2-ethanediyl), -[2,4,6-tris(1-phenylethyl)phenyl]- -hydroxy-	104376-75-2	Aquatic Chronic 2; H411	>= 2,5 - < 10
ethanediol	107-21-1 203-473-3 603-027-00-1 01-2119456816-28-xxxx	Acute Tox. 4; H302 STOT RE 2; H373 (Kidney)	>= 1 - < 10
poly(oxy-1,2-ethanediyl), alpha-sulfo-omega-[tris(1-phenylethyl)phenoxy]-, ammonium salt	119432-41-6	Eye Dam. 1; H318 Aquatic Chronic 3; H412	>= 1 - < 2,5
1,2-benzisothiazol-3(2H)-one	2634-33-5 220-120-9 613-088-00-6 01-2120761540-60-xxxx	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 2; H411 M-Factor (Acute aquatic toxicity): 1	>= 0,025 - < 0,05
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	55965-84-9 613-167-00-5 01-2120764691-48-	Acute Tox. 3; H301 Acute Tox. 2; H330 Acute Tox. 2; H310 Skin Corr. 1C;	>= 0,0002 - < 0,0015

	xxxx	H314 Eye Dam. 1; H318 Skin Sens. 1A; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 100 M-Factor (Chronic aquatic toxicity): 100	

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Have the product container, label or Safety Data Sheet with you when calling the emergency number, a poison control center or physician, or going for treatment.

If inhaled : Move the victim to fresh air.
If breathing is irregular or stopped, administer artificial respiration.
Keep patient warm and at rest.
Call a physician or poison control centre immediately.

In case of skin contact : Take off all contaminated clothing immediately.
Wash off immediately with plenty of water.
If skin irritation persists, call a physician.
Wash contaminated clothing before re-use.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Remove contact lenses.
Immediate medical attention is required.

If swallowed : If swallowed, seek medical advice immediately and show this container or label.
Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Nonspecific
No symptoms known or expected.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : There is no specific antidote available.
Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Extinguishing media - small fires
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Extinguishing media - large fires
Alcohol-resistant foam
or
Water spray

Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture

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

5.3 Advice for firefighters

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

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

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

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

6.2 Environmental precautions

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

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, ver-

miculite) and place in container for disposal according to local / national regulations (see section 13).
Clean contaminated surface thoroughly.
Clean with detergents. Avoid solvents.
Retain and dispose of contaminated wash water.

6.4 Reference to other sections

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

SECTION 7: Handling and storage

7.1 Precautions for safe handling

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

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : No special storage conditions required. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from food, drink and animal feedingstuffs.

7.3 Specific end use(s)

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
atrazine (ISO)	1912-24-9	OEL-RL	4 mg/m3	ZA OEL
	Further information: Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			
		TWA	2 mg/m3	Syngenta
terbuthylazine (ISO)	5915-41-3	TWA	0,8 mg/m3	Syngenta
S-metolachlor	87392-12-9	TWA	5 mg/m3	Syngenta
ethanediol	107-21-1	OEL-RL (vapour fraction)	50 ppm	ZA OEL
	Further information: danger of cutaneous absorption, Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			
		OEL- RL STEL/C (aerosol only)	20 mg/m3	ZA OEL
	Further information: danger of cutaneous absorption, Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			

		OEL- RL STEL/C (vapour fraction)	100 ppm	ZA OEL
	Further information: danger of cutaneous absorption, Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			
		TWA	20 ppm 52 mg/m3	2000/39/EC
		STEL	40 ppm 104 mg/m3	2000/39/EC

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

Substance name	End Use	Exposure routes	Potential health effects	Value
ethanediol	Workers	Inhalation	Long-term local effects	35 mg/m3
	Workers	Dermal	Long-term systemic effects	106 mg/kg
	Consumers	Inhalation	Long-term local effects	7 mg/m3
	Consumers	Dermal	Long-term systemic effects	53 mg/kg
1,2-benzisothiazol-3(2H)-one	Workers	Inhalation	Long-term systemic effects	6,81 mg/m3
	Workers	Dermal	Long-term systemic effects	0,966 mg/kg
	Consumers	Inhalation	Long-term systemic effects	1,2 mg/m3
	Consumers	Dermal	Long-term systemic effects	0,345 mg/kg
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	Workers	Inhalation	Local effects	0,02 mg/m3
	Consumers	Inhalation	Local effects	0,02 mg/m3
	Consumers	Oral	Systemic effects	0,09 mg/kg bw/day

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

Substance name	Environmental Compartment	Value
ethanediol	Fresh water	10 mg/l
	Marine water	1 mg/l
	Intermittent use/release	10 mg/l
	Sewage treatment plant	199,5 mg/l
	Fresh water sediment	20,9 mg/kg
	Soil	1,53 mg/kg
1,2-benzisothiazol-3(2H)-one	Fresh water	0,00403 mg/l
	Marine water	0,000403 mg/l
	Sewage treatment plant	1,03 mg/l
	Fresh water sediment	0,0499 mg/kg
	Marine sediment	0,00499 mg/kg
	Freshwater - intermittent	0,0011 mg/l
	Marine water - intermittent	0,000110 mg/l

	Soil	3 mg/kg
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	Fresh water	3,39 µg/l
	Marine water	3,39 µg/l
	Sewage treatment plant	0,23 mg/l
	Fresh water sediment	0,027 mg/kg dry weight (d.w.)
	Marine sediment	0,027 mg/kg dry weight (d.w.)
	Soil	0,01 mg/kg dry weight (d.w.)

8.2 Exposure controls

Engineering measures

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

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

Maintain air concentrations below occupational exposure standards.
Where necessary, seek additional occupational hygiene advice.

Personal protective equipment

Eye/face protection : Tightly fitting safety goggles
Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.

Hand protection

Material : Nitrile rubber
Break through time : > 480 min
Glove thickness : 0,5 mm

Remarks : Wear protective gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Remove and wash contaminated clothing before re-use.
Wear as appropriate:

		Impervious clothing
Respiratory protection	:	No personal respiratory protective equipment normally required. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
Protective measures	:	The use of technical measures should always have priority over the use of personal protective equipment. When selecting personal protective equipment, seek appropriate professional advice.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	suspension
Colour	:	white
Odour	:	No data available
Odour Threshold	:	No data available
pH	:	6,0 - 8,5 Concentration: 1 % w/v
Melting point/range	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	No data available
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Density	:	1,11 - 1,12 g/cm3 (20 °C)
Solubility(ies)		
Solubility in other solvents	:	(20 °C) Solvent: in water
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available

Decomposition temperature	:	No data available
Viscosity		
Viscosity, kinematic	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available

9.2 Other information

Particle size	:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

None reasonably foreseeable.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid	:	No decomposition if used as directed.

10.5 Incompatible materials

Materials to avoid	:	None known.

10.6 Hazardous decomposition products

Hazardous decomposition products	:	No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Information on likely routes of exposure	:	Ingestion Inhalation Skin contact Eye contact

Acute toxicity

Product:

Acute oral toxicity	:	Acute toxicity estimate: > 2.000 mg/kg Method: Calculation method

Components:

atrazine (ISO):

Acute oral toxicity	:	LD50 (Rat, male and female): 3.090 mg/kg
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 5,82 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rat, male and female): > 3.100 mg/kg Assessment: The substance or mixture has no acute dermal toxicity

terbuthylazine (ISO):

Acute oral toxicity	:	LD50 (Rat, male and female): 1.590 mg/kg
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 5,3 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rat, male and female): > 2.000 mg/kg Assessment: The substance or mixture has no acute dermal toxicity

S-metolachlor:

Acute oral toxicity	:	LD50 (Rat, male and female): 2.672 mg/kg
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 2,91 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, male and female): > 2.000 mg/kg Assessment: The substance or mixture has no acute dermal toxicity

ethanediol:

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

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

Acute oral toxicity	:	LD50 (Rat, male): 670 mg/kg

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

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

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

Acute inhalation toxicity : Assessment: The component/mixture is highly toxic after short term inhalation.

Acute dermal toxicity : Assessment: The component/mixture is highly toxic after single contact with skin.

Skin corrosion/irritation

Components:

atrazine (ISO):

Species : Rabbit
Result : No skin irritation

terbuthylazine (ISO):

Species : Rabbit
Result : No skin irritation

S-metolachlor:

Species : Rabbit
Result : No skin irritation

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

Species : Rabbit
Result : Mild skin irritation

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Result : Corrosive after 1 to 4 hours of exposure

Serious eye damage/eye irritation

Components:

atrazine (ISO):

Species : Rabbit
Result : No eye irritation

terbuthylazine (ISO):

Species : Rabbit
Result : No eye irritation

S-metolachlor:

Species : Rabbit
Result : No eye irritation

poly(oxy-1,2-ethanediyl), alpha-sulfo-omega-[tris(1-phenylethyl)phenoxy]-, ammonium salt:

Result : Risk of serious damage to eyes.

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

Species : Rabbit
Result : Risk of serious damage to eyes.

Respiratory or skin sensitisation

Components:

atrazine (ISO):

Test Type : Maximisation Test
Species : Guinea pig
Result : The product is a skin sensitiser, sub-category 1A.

terbuthylazine (ISO):

Species : Guinea pig
Result : Did not cause sensitisation on laboratory animals.

S-metolachlor:

Species : Guinea pig
Result : The product is a skin sensitiser, sub-category 1B.

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

Result : Probability or evidence of skin sensitisation in humans

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Result : The product is a skin sensitiser, sub-category 1A.

Germ cell mutagenicity

Components:

atrazine (ISO):

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

terbuthylazine (ISO):

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

S-metolachlor:

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

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

Germ cell mutagenicity- Assessment	:	Weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity

Components:

atrazine (ISO):

Carcinogenicity - Assessment	:	This substance has been reported to cause tumours in certain animal species., There is no evidence that these findings are relevant to humans.

terbuthylazine (ISO):

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

S-metolachlor:

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

Reproductive toxicity

Components:

atrazine (ISO):

Reproductive toxicity - Assessment	:	No toxicity to reproduction

terbuthylazine (ISO):

Reproductive toxicity - Assessment	:	No toxicity to reproduction

S-metolachlor:

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

STOT - repeated exposure

Components:

atrazine (ISO):

Target Organs	:	Heart
Assessment	:	The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

terbuthylazine (ISO):

Target Organs	:	hematopoietic system
Assessment	:	The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

S-metolachlor:

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

ethanediol:

Target Organs	:	Kidney
Assessment	:	The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

SECTION 12: Ecological information

12.1 Toxicity

Components:

atrazine (ISO):

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 4,5 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Americamysis): 5,4 mg/l Exposure time: 96 h
Toxicity to algae/aquatic plants	:	ErC50 (Raphidocelis subcapitata (freshwater green alga)): 0,16 mg/l Exposure time: 96 h NOEC (Raphidocelis subcapitata (freshwater green alga)): 0,011 mg/l End point: Growth rate Exposure time: 96 h
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to microorganisms	:	EC50 (activated sludge): > 100 mg/l Exposure time: 3 h
Toxicity to fish (Chronic toxicity)	:	0,06 mg/l Exposure time: 21 d Species: Oncorhynchus mykiss (rainbow trout)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,26 mg/l Exposure time: 28 d Species: Americamysis

		NOEC: 0,04 mg/l Exposure time: 21 d Species: Daphnia magna Straus
M-Factor (Chronic aquatic toxicity)	:	1
terbuthylazine (ISO):		
Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 2,2 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Americamysis): 0,092 mg/l Exposure time: 96 h
Toxicity to algae/aquatic plants	:	ErC50 (Desmodesmus subspicatus (green algae)): > 0,03 mg/l Exposure time: 72 h NOEC (Desmodesmus subspicatus (green algae)): 0,0011 mg/l End point: Growth rate Exposure time: 72 h ErC50 (Microcystis aeruginosa (blue-green algae)): 0,018 mg/l Exposure time: 96 h NOEC (Microcystis aeruginosa (blue-green algae)): 0,0037 mg/l End point: Growth rate Exposure time: 96 h
M-Factor (Acute aquatic toxicity)	:	10
Toxicity to microorganisms	:	EC50 (activated sludge): > 100 mg/l Exposure time: 3 h
Toxicity to fish (Chronic toxicity)	:	NOEC: 0,045 mg/l Exposure time: 90 d Species: Oncorhynchus mykiss (rainbow trout)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,019 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)
M-Factor (Chronic aquatic toxicity)	:	10
S-metolachlor:		
Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 1,23 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Americamysis): 1,4 mg/l Exposure time: 96 h

Toxicity to algae/aquatic plants	:	ErC50 (Raphidocelis subcapitata (freshwater green alga)): 0,077 mg/l Exposure time: 96 h NOEC (Raphidocelis subcapitata (freshwater green alga)): 0,016 mg/l End point: Growth rate Exposure time: 96 h EC50 (Lemna gibba (gibbous duckweed)): 0,023 mg/l Exposure time: 14 d NOEC (Lemna gibba (gibbous duckweed)): 0,0076 mg/l Exposure time: 14 d
M-Factor (Acute aquatic toxicity)	:	10
Toxicity to fish (Chronic toxicity)	:	NOEC: 0,03 mg/l Exposure time: 35 d Species: Pimephales promelas (fathead minnow)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,13 mg/l Exposure time: 28 d Species: Americamysis
M-Factor (Chronic aquatic toxicity)	:	10

poly(oxy-1,2-ethanediyl), -[2,4,6-tris(1-phenylethyl)phenyl]- -hydroxy-:

Ecotoxicology Assessment

Chronic aquatic toxicity	:	Toxic to aquatic life with long lasting effects.

ethanediol:

Toxicity to microorganisms	:	EC50 (Pseudomonas putida): > 10.000 mg/l Exposure time: 16 h

poly(oxy-1,2-ethanediyl), alpha-sulfo-omega-[tris(1-phenylethyl)phenoxy]-, ammonium salt:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 33 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 24 mg/l Exposure time: 48 h

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

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 2,18 mg/l Exposure time: 96 h
Toxicity to daphnia and other	:	EC50 (Daphnia magna (Water flea)): 2,94 mg/l

aquatic invertebrates		Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Raphidocelis subcapitata (freshwater green alga)): 0,15 mg/l Exposure time: 72 h EC10 (Raphidocelis subcapitata (freshwater green alga)): 0,04 mg/l End point: Growth rate Exposure time: 72 h
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to fish (Chronic toxicity)	:	NOEC: 0,3 mg/l Exposure time: 28 d Species: Oncorhynchus mykiss (rainbow trout)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 1,7 mg/l Exposure time: 21 d Species: Daphnia (water flea)

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 0,22 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia (water flea)): 0,1 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Raphidocelis subcapitata (freshwater green alga)): 0,048 mg/l Exposure time: 72 h NOEC (Raphidocelis subcapitata (freshwater green alga)): 0,0012 mg/l End point: Growth rate Exposure time: 72 h ErC50 (Skeletonema costatum (marine diatom)): 0,0052 mg/l Exposure time: 48 h NOEC (Skeletonema costatum (marine diatom)): 0,00064 mg/l End point: Growth rate Exposure time: 48 h
M-Factor (Acute aquatic toxicity)	:	100
Toxicity to fish (Chronic toxicity)	:	NOEC: 0,098 mg/l Exposure time: 28 d Species: Oncorhynchus mykiss (rainbow trout)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,004 mg/l Exposure time: 21 d Species: Daphnia (water flea)
M-Factor (Chronic aquatic toxicity)	:	100

12.2 Persistence and degradability

Components:

atrazine (ISO):

Biodegradability	:	Result: Not readily biodegradable.
Stability in water	:	Remarks: Product is not persistent.

terbuthylazine (ISO):

Biodegradability	:	Result: Not readily biodegradable.
Stability in water	:	Degradation half life: 6 d Remarks: Product is not persistent.

S-metolachlor:

Biodegradability	:	Result: Not readily biodegradable.
Stability in water	:	Degradation half life: 53 - 147 d Remarks: Product is not persistent.

ethanediol:

Biodegradability	:	Result: Readily biodegradable.

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

Biodegradability	:	Result: rapidly degradable

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Biodegradability	:	Result: Readily biodegradable.

12.3 Bioaccumulative potential

Components:

atrazine (ISO):

Bioaccumulation	:	Remarks: Does not bioaccumulate.
Partition coefficient: n-octanol/water	:	log Pow: 2,5 (25 °C)

terbuthylazine (ISO):

Bioaccumulation	:	Remarks: Does not bioaccumulate.
Partition coefficient: n-octanol/water	:	log Pow: 3,4 (25 °C)

S-metolachlor:

Bioaccumulation	:	Remarks: Does not bioaccumulate.
Partition coefficient: n-octanol/water	:	log Pow: 3,05 (25 °C)

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

Bioaccumulation	:	Remarks: Bioaccumulation is unlikely.

12.4 Mobility in soil

Components:

atrazine (ISO):

Distribution among environmental compartments	:	Remarks: Highly mobile in soils
Stability in soil	:	Dissipation time: 38,5 d Percentage dissipation: 50 % (DT50) Remarks: Product is not persistent.

terbuthylazine (ISO):

Distribution among environmental compartments	:	Remarks: Moderately mobile in soils
Stability in soil	:	Dissipation time: 77 - 169 d Percentage dissipation: 50 % (DT50) Remarks: Product is not persistent.

S-metolachlor:

Distribution among environmental compartments	:	Remarks: Moderately mobile in soils
Stability in soil	:	Dissipation time: 12 - 46 d Percentage dissipation: 50 % (DT50) Remarks: Product is not persistent.

12.5 Results of PBT and vPvB assessment

Product:

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

Components:

atrazine (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).

terbuthylazine (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).

ethanediol:

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

12.6 Other adverse effects

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.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

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

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

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. (TERBUTHYLAZINE, ATRAZINE)
IMDG	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TERBUTHYLAZINE AND ATRAZINE)
IATA	:	Environmentally hazardous substance, liquid, n.o.s. (TERBUTHYLAZINE AND ATRAZINE)

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
IATA (Cargo)		
Packing instruction (cargo aircraft)	:	964
Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous
IATA (Passenger)		
Packing instruction (passenger aircraft)	:	964
Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous

14.5 Environmental hazards

IMDG		
Marine pollutant	:	yes
IATA (Passenger)		
Environmentally hazardous	:	yes
IATA (Cargo)		
Environmentally hazardous	:	yes

14.6 Special precautions for user

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

Other regulations:

None known.

15.2 Chemical safety assessment

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

SECTION 16: Other information

Full text of H-Statements

H301	:	Toxic if swallowed.
H302	:	Harmful if swallowed.
H310	:	Fatal in contact with skin.
H314	:	Causes severe skin burns and eye damage.
H315	:	Causes skin irritation.
H317	:	May cause an allergic skin reaction.
H318	:	Causes serious eye damage.
H330	:	Fatal if inhaled.
H373	:	May cause damage to organs through prolonged or repeated exposure.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
H411	:	Toxic to aquatic life with long lasting effects.
H412	:	Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Dam.	:	Serious eye damage
Skin Corr.	:	Skin corrosion
Skin Irrit.	:	Skin irritation
Skin Sens.	:	Skin sensitisation
STOT RE	:	Specific target organ toxicity - repeated exposure
2000/39/EC	:	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
ZA OEL	:	South Africa. The Regulations for Hazardous Chemical

		Agents, Occupational Exposure Limits
2000/39/EC / TWA	:	Limit Value - eight hours
2000/39/EC / STEL	:	Short term exposure limit
ZA OEL / OEL-RL	:	Occupational Exposure Limit Restricted limit - 8- hour exposure or equivalent (12 hour shifts)
ZA OEL / OEL- RL STEL/C	:	Occupational Exposure Limit Restricted limit - Short term occupational exposure limits / ceiling limits

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:		**Classification procedure:**
Eye Irrit. 2	H319	Calculation method
Skin Sens. 1	H317	Calculation method
Aquatic Acute 1	H400	Calculation method
Aquatic Chronic 1	H410	Calculation method
STOT RE 2	H373	Calculation method

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

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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