

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

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

1.1 Product identifier

Trade name : CALARIS

Design code : A13726E

Product Registration Number : PCS No. 06546

Unique Formula Identifier (UFI) : S6C7-N09N-Y007-9MR3

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

Use of the Substance/Mixture : Herbicide

Recommended restrictions on use : professional use

1.3 Details of the supplier of the safety data sheet

Company : Syngenta Ireland Limited
Block 6 Cleaboy Business Park, Old Kilmeaden Road,
Waterford
Ireland

Telephone : (051) 377203

Telefax : -

E-mail address of person responsible for the SDS : cropsales.ie@syngenta.com

1.4 Emergency telephone number

Emergency telephone number : Syngenta +44 1484 538444
Poisons Information Centre of Ireland
Members of Public: +353 (1) 809 2166. (8.00 a.m. to 10.00 p.m. 7 days a week)
Healthcare Professionals: +353 (1) 809 2566 (24-hour service)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4

H302: Harmful if swallowed.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

Reproductive toxicity, Category 2	H361d: Suspected of damaging the unborn child.
Specific target organ toxicity - repeated exposure, Category 2, hematopoietic system	H373: May cause damage to organs through prolonged or repeated exposure.
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

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms	:			
Signal word	:	Warning		
Hazard statements	:	H302 H361d H373 H410	Harmful if swallowed. Suspected of damaging the unborn child. May cause damage to organs (hematopoietic system) through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.	
Precautionary statements	:	Prevention: P201 Obtain special instructions before use. P260 Do not breathe mist or vapours. P264 Wash skin thoroughly after handling. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection. Response: P308 + P313 IF exposed or concerned: Get medical advice/ attention. P391 Collect spillage. Disposal: P501 Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty triple rinsed clean containers which can be disposed of as non-hazardous waste.		

Hazardous components which must be listed on the label:

terbuthylazine (ISO)
mesotrione (ISO)
phosphoric acid

Additional Labelling

EUH208	Contains 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.
EUH401	To avoid risks to human health and the environment, comply with the instructions for use.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

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.

Ecological information: 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.

Toxicological information: 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 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
terbuthylazine (ISO)	5915-41-3 227-637-9 613-323-00-2	Acute Tox. 4; H302 STOT RE 2; H373 (hematopoietic system) Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10 Acute toxicity estimate Acute oral toxicity: 1,590 mg/kg	>= 30 - < 50
mesotrione (ISO)	104206-82-8 609-064-00-X	Repr. 2; H361d STOT RE 2; H373 (Nervous system, Eyes) Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 3 - < 10

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version 9.0 Revision Date: 28.10.2024 SDS Number: S188509812 Date of last issue: 20.11.2023
Date of first issue: 12.06.2017

		M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10	
alcohols, C16-18, ethoxylated	68439-49-6 500-212-8	Eye Irrit. 2; H319	$\geq 1 - < 10$
phosphoric acid	7664-38-2 231-633-2 015-011-00-6 01-2119485924-24-xxxx	Met. Corr. 1; H290 Acute Tox. 4; H302 Skin Corr. 1B; H314 Eye Dam. 1; H318 specific concentration limit Skin Corr. 1B; H314 $\geq 25 \%$ Skin Irrit. 2; H315 $\geq 10 - < 25 \%$ Eye Irrit. 2; H319 $\geq 10 - < 25 \%$ Acute toxicity estimate Acute oral toxicity: 301 mg/kg	$\geq 3 - < 5$
1,2-benzisothiazol-3(2H)-one	2634-33-5 220-120-9 613-088-00-6 01-2120761540-60-xxxx	Acute Tox. 4; H302 Acute Tox. 2; H330 Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1A; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1 specific concentration limit Skin Sens. 1A; H317 $\geq 0.036 \%$ Acute toxicity estimate Acute oral toxicity:	$\geq 0.0025 - < 0.025$

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

		450 mg/kg Acute inhalation toxicity (dust/mist): 0.21 mg/l	
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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.
- Risks : Harmful if swallowed.
Suspected of damaging the unborn child.
May cause damage to organs through prolonged or repeated exposure.

4.3 Indication of any immediate medical attention and special treatment needed

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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

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 fire-fighting : 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.

Hazardous combustion products : Carbon oxides
Nitrogen oxides (NO_x)
Sulphur oxides
Chlorine compounds
Oxides of phosphorus

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 ab-

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

sorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Clean contaminated surface thoroughly.
Clean with detergents. Avoid solvents.
Retain and dispose of contaminated wash water.

6.4 Reference to other sections

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

SECTION 7: Handling and storage

7.1 Precautions for safe handling

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

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage 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.

Further information on storage stability : Physically and chemically stable for at least 2 years when stored in the original unopened sales container at ambient temperatures.

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
terbutylazine (ISO)	5915-41-3	TWA	0.8 mg/m ³	Syngenta
mesotrione (ISO)	104206-82-8	TWA	5 mg/m ³	Syngenta
propane-1,2-diol	57-55-6	OELV - 8 hrs (TWA) (particles)	10 mg/m ³	IE OEL
		OELV - 8 hrs (TWA) (total (vapour and particles))	150 ppm 470 mg/m ³	IE OEL
phosphoric acid	7664-38-2	TWA	1 mg/m ³	2000/39/EC
Further information: Indicative				

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version 9.0 Revision Date: 28.10.2024 SDS Number: S188509812 Date of last issue: 20.11.2023
Date of first issue: 12.06.2017

	STEL	2 mg/m ³	2000/39/EC
Further information: Indicative			
	OELV - 8 hrs (TWA)	1 mg/m ³	IE OEL
	OELV - 15 min (STEL)	2 mg/m ³	IE OEL

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

Substance name	End Use	Exposure routes	Potential health effects	Value
propane-1,2-diol	Workers	Inhalation	Long-term systemic effects	168 mg/m ³
	Consumers	Inhalation	Long-term local effects	10 mg/m ³
	Consumers	Inhalation	Long-term systemic effects	30 mg/m ³
	Workers	Inhalation	Long-term local effects	10 mg/m ³
phosphoric acid	Workers	Inhalation	Long-term systemic effects	10.7 mg/m ³
	Consumers	Inhalation	Long-term local effects	0.36 mg/m ³
	Workers	Inhalation	Acute local effects	2 mg/m ³
	Workers	Inhalation	Long-term local effects	1 mg/m ³
1,2-benzisothiazol-3(2H)-one	Consumers	Inhalation	Long-term systemic effects	4.57 mg/m ³
	Workers	Inhalation	Long-term systemic effects	6.81 mg/m ³
	Workers	Dermal	Long-term systemic effects	0.966 mg/kg
	Consumers	Inhalation	Long-term systemic effects	1.2 mg/m ³
	Consumers	Dermal	Long-term systemic effects	0.345 mg/kg

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

Substance name	Environmental Compartment	Value
sorbitan, monododecanoate, poly(oxy-1,2-ethanediyl) derivs.	Fresh water	0.2 mg/l
	Marine water	0.02 mg/l
	Fresh water sediment	1.141 mg/kg dry weight (d.w.)
	Marine sediment	1000 mg/kg dry weight (d.w.)
propane-1,2-diol	Fresh water	260 mg/l
	Marine water	26 mg/l
	Intermittent use/release	183 mg/l
	Sewage treatment plant	20000 mg/l
	Marine sediment	57.2 mg/kg
	Fresh water sediment	572 mg/kg
	Soil	50 mg/kg
1,2-benzisothiazol-3(2H)-one	Fresh water	0.00403 mg/l

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

	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

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 : No special protective equipment required.
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. The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

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

Environmental exposure controls

Water : 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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	liquid
Colour	:	white to light brown
Odour	:	characteristic
Odour Threshold	:	No data available
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	No data available
Flammability	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Flash point	:	Method: Seta closed cup does not flash
Auto-ignition temperature	:	450 °C
Decomposition temperature	:	No data available
pH	:	2 - 5 Concentration: 1 %w/v
Viscosity	:	
Viscosity, dynamic	:	109 - 238 mPa.s (40 °C) 225 - 383 mPa.s (20 °C)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

Viscosity, kinematic : No data available

Solubility(ies)
Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Vapour pressure : No data available

Density : 1.1 g/cm³ (25 °C)

Relative vapour density : No data available

Particle characteristics
Particle size : No data available

9.2 Other information

Explosives : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Evaporation rate : No data available

Miscibility with water : Miscible

Surface tension : 35.4 mN/m, 0.1 %

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

No hazardous decomposition products are known.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

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

Acute toxicity

Harmful if swallowed.

Product:

Acute oral toxicity : LD50 (Rat, female): 310 mg/kg

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Components:

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

mesotrione (ISO):

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

Acute inhalation toxicity : LC50 (Rat, male and female): > 4.75 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

phosphoric acid:

Acute oral toxicity : LD50 (Rat): 301 mg/kg

Acute dermal toxicity : LD50 (Rabbit): 2,750 mg/kg

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

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

Acute oral toxicity : Acute toxicity estimate: 450 mg/kg
Method: Acute toxicity estimate according to Regulation (EC) No. 1272/2008

Acute inhalation toxicity : Acute toxicity estimate: 0.21 mg/l
Test atmosphere: dust/mist
Method: Acute toxicity estimate according to Regulation (EC) No. 1272/2008

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Product:

Species : Rabbit
Result : No skin irritation

Components:

terbuthylazine (ISO):

Species : Rabbit
Result : No skin irritation

mesotrione (ISO):

Species : Rabbit
Result : No skin irritation

phosphoric acid:

Result : Corrosive after 3 minutes to 1 hour of exposure

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

Species : Rabbit
Result : Irritating to skin.

Serious eye damage/eye irritation

Based on available data, the classification criteria are not met.

Product:

Species : Rabbit
Result : No eye irritation

Components:

terbuthylazine (ISO):

Species : Rabbit

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

Result : No eye irritation

mesotrione (ISO):

Species : Rabbit
Result : No eye irritation

alcohols, C16-18, ethoxylated:

Result : Eye irritation

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

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

Respiratory or skin sensitisation

Skin sensitisation

Based on available data, the classification criteria are not met.

Respiratory sensitisation

Not classified due to lack of data.

Product:

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

Components:

terbuthylazine (ISO):

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

mesotrione (ISO):

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

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

Result : Probability or evidence of high skin sensitisation rate in humans

Germ cell mutagenicity

Not classified due to lack of data.

Components:

terbuthylazine (ISO):

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

mesotrione (ISO):

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

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

phosphoric acid:

Germ cell mutagenicity- Assessment : In vitro tests did not show 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

Not classified due to lack of data.

Components:

terbuthylazine (ISO):

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

mesotrione (ISO):

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

Reproductive toxicity

Suspected of damaging the unborn child.

Components:

terbuthylazine (ISO):

Reproductive toxicity - Assessment : No toxicity to reproduction

mesotrione (ISO):

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

phosphoric acid:

Reproductive toxicity - Assessment : No toxicity to reproduction, No effects on or via lactation

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

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

STOT - single exposure

Not classified due to lack of data.

STOT - repeated exposure

May cause damage to organs (hematopoietic system) through prolonged or repeated exposure.

Components:

terbuthylazine (ISO):

Target Organs : hematopoietic system

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

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

mesotrione (ISO):

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

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

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

Aspiration toxicity

Not classified due to lack of data.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : 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 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 6.7 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 53 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Raphidocelis subcapitata (freshwater green alga)): 0.087 mg/l
Exposure time: 72 h

NOEC (Raphidocelis subcapitata (freshwater green alga)): 0.0039 mg/l

End point: Growth rate

Exposure time: 72 h

EC50 (Lemna gibba (gibbous duckweed)): 0.114 mg/l
Exposure time: 7 d

NOEC (Lemna gibba (gibbous duckweed)): 0.063 mg/l
Exposure time: 7 h

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

Components:

terbuthylazine (ISO):

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 2.2 mg/l Exposure time: 96 h LC50 (Poecilia reticulata (guppy)): 1.6 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

mesotrione (ISO):

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 120 mg/l Exposure time: 96 h LC50 (Cyprinus carpio (Carp)): > 97.1 mg/l Exposure time: 96 h
Toxicity to daphnia and other	:	EC50 (Daphnia magna (Water flea)): 900 mg/l

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

aquatic invertebrates	Exposure time: 48 h
Toxicity to algae/aquatic plants	: ErC50 (Raphidocelis subcapitata (freshwater green alga)): 12 mg/l Exposure time: 96 h NOEC (Raphidocelis subcapitata (freshwater green alga)): 0.75 mg/l End point: Growth rate Exposure time: 96 h ErC50 (Lemna gibba (gibbous duckweed)): 0.0301 mg/l Exposure time: 7 d EC10 (Lemna gibba (gibbous duckweed)): 0.00187 mg/l End point: Growth rate Exposure time: 7 d
M-Factor (Acute aquatic toxicity)	: 10
Toxicity to fish (Chronic toxicity)	: NOEC: 12.5 mg/l Exposure time: 36 d Species: Pimephales promelas (fathead minnow)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC: 180 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)
M-Factor (Chronic aquatic toxicity)	: 10
phosphoric acid:	
Toxicity to fish	: LC50 (Lepomis macrochirus (Bluegill sunfish)): 3 - 3.25 mg/l Exposure time: 96 h

Ecotoxicology Assessment

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

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 aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 2.94 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	: ErC50 (Raphidocelis subcapitata (freshwater green alga)): 0.15 mg/l Exposure time: 72 h NOEC (Raphidocelis subcapitata (freshwater green alga)): 0.055 mg/l End point: Growth rate

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

Exposure time: 72 h

M-Factor (Acute aquatic toxicity) : 1

Toxicity to fish (Chronic toxicity) : NOEC: 0.21 mg/l
Exposure time: 28 d
Species: Oncorhynchus mykiss (rainbow trout)

M-Factor (Chronic aquatic toxicity) : 1

12.2 Persistence and degradability

Components:

terbuthylazine (ISO):

Biodegradability : Result: Not readily biodegradable.

Stability in water : Degradation half life: 6 d
Remarks: Product is not persistent.

mesotrione (ISO):

Stability in water : Degradation half life: > 30 d (25 °C)
Remarks: Persistent in water.

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

Biodegradability : Result: Not readily biodegradable.

12.3 Bioaccumulative potential

Components:

terbuthylazine (ISO):

Bioaccumulation : Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 3.4 (25 °C)

mesotrione (ISO):

Bioaccumulation : Remarks: Low bioaccumulation potential.

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

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

12.4 Mobility in soil

Components:

terbuthylazine (ISO):

Distribution among environmental compartments : Remarks: Moderately mobile in soils

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

Stability in soil : Dissipation time: 77 - 169 d
Percentage dissipation: 50 % (DT50)
Remarks: Product is not persistent.

mesotrione (ISO):

Distribution among environmental compartments : Remarks: Highly mobile in soils

Stability in soil : Dissipation time: 6 - 105 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:

terbuthylazine (ISO):

Assessment : Substance is not persistent, bioaccumulative, and toxic (PBT).. Substance is not very persistent and very bioaccumulative (vPvB).

mesotrione (ISO):

Assessment : Substance is not persistent, bioaccumulative, and toxic (PBT).. Substance is not very persistent and very bioaccumulative (vPvB).

phosphoric acid:

Assessment : Substance is not persistent, bioaccumulative, and toxic (PBT).. Substance is not very persistent and very bioaccumulative (vPvB).

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

Assessment : Substance is not persistent, bioaccumulative, and toxic (PBT).. Substance is not very persistent and very bioaccumulative (vPvB).

12.6 Endocrine disrupting properties

Product:

Assessment : 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.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

12.7 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	: Do not contaminate ponds, waterways or ditches with chemical or used container. Do not dispose of waste into sewer. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations.
Contaminated packaging	: Empty remaining contents. Triple rinse containers. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.
Waste Code	: uncleaned packagings 15 01 10, packaging containing residues of or contaminated by hazardous substances

SECTION 14: Transport information

14.1 UN number or ID number

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

14.2 UN proper shipping name

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

14.3 Transport hazard class(es)

Class	Subsidiary risks
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SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

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

14.4 Packing group

ADR

Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9
Tunnel restriction code	:	(-)
Remarks	:	This product can be subject to exemptions when packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a net mass of 5 kg or less for solids.

RID

Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9
Remarks	:	This product can be subject to exemptions when packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a net mass of 5 kg or less for solids.

IMDG

Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Remarks	:	This product can be subject to exemptions when packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a net mass of 5 kg or less for solids.

IATA (Cargo)

Packing instruction (cargo aircraft)	:	964
Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous
Remarks	:	This product can be subject to exemptions when packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a net mass of 5 kg or less for solids.

IATA (Passenger)

Packing instruction (passenger aircraft)	:	964
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SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous
Remarks	:	This product can be subject to exemptions when packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a net mass of 5 kg or less for solids.

14.5 Environmental hazards

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

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 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Conditions of restriction for the following entries should be considered: Number on list 3
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Number on list 75: If you intend to use this product as tattoo ink, please contact your vendor.

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	:	Not applicable
Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import	:	Not applicable

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

of dangerous chemicals

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

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

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control)
Not applicable

Other regulations:

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

Use plant protection products safely. Always read the label and product information before use.
Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

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

H290	: May be corrosive to metals.
H302	: Harmful if swallowed.
H314	: Causes severe skin burns and eye damage.
H315	: Causes skin irritation.
H317	: May cause an allergic skin reaction.
H318	: Causes serious eye damage.
H319	: Causes serious eye irritation.
H330	: Fatal if inhaled.
H361d	: Suspected of damaging the unborn child.
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.

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
Eye Irrit.	: Eye irritation
Met. Corr.	: Corrosive to metals
Repr.	: Reproductive toxicity
Skin Corr.	: Skin corrosion

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

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
IE OEL	:	Ireland. List of Chemical Agents and Occupational Exposure Limit Values - Schedule 1
Syngenta	:	Syngenta Occupational Exposure Limit
2000/39/EC / TWA	:	Limit Value - eight hours
2000/39/EC / STEL	:	Short term exposure limit
IE OEL / OELV - 8 hrs (TWA)	:	Occupational exposure limit value (8-hour reference period)
IE OEL / OELV - 15 min (STEL)	:	Occupational exposure limit value (15-minute reference period)
Syngenta / TWA	:	Time weighted average

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; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:

Acute Tox. 4	H302
Repr. 2	H361d

Classification procedure:

Based on product data or assessment
Calculation method

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



CALARIS

Version	Revision Date:	SDS Number:	Date of last issue: 20.11.2023
9.0	28.10.2024	S188509812	Date of first issue: 12.06.2017

STOT RE 2	H373	Calculation method
Aquatic Acute 1	H400	Based on product data or assessment
Aquatic Chronic 1	H410	Based on product data or assessment

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

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