

Trade name: Starfire**Product no.:** MAI 117 C0218 UK-2**Current version :** 3.0.8, issued: 25.07.2023**Replaced version:** 3.0.7, issued: 29.06.2023**Region:** GB**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Trade name

Starfire**1.2 Relevant identified uses of the substance or mixture and uses advised against****Relevant identified uses of the substance or mixture**Plant protection product for professional use. Agriculture.
Herbicide**Uses advised against**

No data available.

1.3 Details of the supplier of the safety data sheet**Address**Certis Belchim B.V. (EU)
Stadsplateau 16
3521 AZ Utrecht - NederlandTelephone no. 0031 (0)30 200 1200
Fax no. 0031 (0)30 310 0241
e-mail info@certisbelchim.com**Advice on Safety Data Sheet**

www.certisbelchim.com

Identification of the supplier**Address**Certis Belchim B.V. - United Kingdom
Suite 5, 3 Riverside, Granta Park - Great Abington
Cambridgeshire CB21 6AD
United KingdomTelephone no. 0044 (0) 1223 652500
Fax no. 0044 (0) 1223 891210
e-mail info.uk@certisbelchim.com - www.certisbelchim.co.uk**1.4 Emergency telephone number**

Carechem 24 EU: +44 1235 239670

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****Classification in accordance with Regulation (EC) No 1272/2008 (CLP)**Acute Tox. 4; H302
Aquatic Acute 1; H400
Aquatic Chronic 1; H410
Skin Sens. 1; H317
STOT RE 2; H373**Classification information**

Classification and labelling are based on toxicological studies performed on the product (mixture).

Classification and labelling with respect to water pollution risks are based on ecotoxicological studies performed on the product (mixture).

This product is assessed and classified using the methods and criteria below referred to in Article 9 of Regulation (EC) n° 1272/2008:

Physical hazards: determined through assessment data based on the methods or standards referred to in part 2 of Annex I to CLP

Health hazards and environmental hazards: determined through toxicological and ecotoxicological assessment data based on the methods or standards referred to in Part 3, 4 and 5 of Annex I to CLP.

2.2 Label elements**Labelling according to Regulation (EC) No 1272/2008 (CLP Regulation)****Hazard pictograms**

GHS07



GHS08



GHS09

Signal word

Warning

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1,2-benzisothiazol-3(2H)-one**Hazard statement(s)**

H302	Harmful if swallowed.
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.

Hazard statements (EU)

EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

Precautionary statement(s)

P260	Do not breathe fume.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
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.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P302+P352	IF ON SKIN: Wash with plenty of water.
P314	Get medical advice/attention if you feel unwell.
P321	Specific treatment (see additional first aid advice on this label).
P330	Rinse mouth.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P501	Dispose of contents/ container to a licensed hazardous waste disposal contractor or collection site except for triple rinsed empty clean containers which can be disposed of as non-hazardous waste.

Supplemental label elements

UFI: JE89-V0JK-A001-QRUQ

2.3 Other hazards

PBT assessment

According to the information provided in the supply chain, the mixture does not contain > 0.1% of a substance that is considered to be PBT.

vPvB assessment

According to the information provided in the supply chain, the mixture does not contain > 0.1% of a substance that is considered to be vPvB.

SECTION 3: Composition/information on ingredients**3.1 Substances**

Not applicable. The product is not a substance.

3.2 Mixtures**Chemical characterization**

Flufenacet 500 g/l (SC)

Hazardous ingredients

No	Substance name		Additional information	
	CAS / EC / Index / REACH no	Classification (EC) 1272/2008 (CLP)	Concentration	%
1	Flufenacet (ISO)			
	142459-58-3 - 613-164-00-9 -	Acute Tox. 4*; H302 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 Skin Sens. 1; H317 STOT RE 2*; H373**	>= 25.00 - < 50.00	wt%
2	1,2-benzisothiazol-3(2H)-one			
	2634-33-5 220-120-9 613-088-00-6 01-2120761540-60	Acute Tox. 4*; H302 Aquatic Acute 1; H400 Eye Dam. 1; H318 Skin Irrit. 2; H315 Skin Sens. 1; H317	< 0.10	wt%
3	glycerol			
	56-81-5 200-289-5 - 01-2119471987-18	-	< 5.00	wt%

Full Text for all H-phrases and EUH-phrases: pls. see section 16

(*, **, ***, ****) Detailed explanation pls. refer to CLP regulation No. 1272/2008, annex VI, 1.2

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No	Note	Specific concentration limits	M-factor (acute)	M-factor (chronic)
1	-	-	M = 100	-
2	-	Skin Sens. 1; H317: C >= 0.05%	-	-

No	Route, target organ, concrete effect
1	H373 dermal; liver; -

Acute toxicity estimate (ATE) values			
No	oral	dermal	inhalative
1	383 mg/kg bodyweight		

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

If medical advice is needed, have product container or label at hand.

After inhalation

Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

After skin contact

Take off contaminated clothing. Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

After eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

After ingestion

Rinse mouth. Call a POISON CENTER or doctor/physician.

4.2 Most important symptoms and effects, both acute and delayed

No data available.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Alcohol-resistant foam; Carbon dioxide; Extinguishing powder; Water spray jet

Unsuitable extinguishing media

High power water jet

5.2 Special hazards arising from the substance or mixture

In the event of fire, the following can be released: Carbon dioxide (CO₂); Carbon monoxide (CO)

5.3 Advice for firefighters

Fire-fighting operations, rescue and clearing work under effect of combustion and smoulder gases just may be done with breathing apparatus. Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations. Wear protective clothing.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Refer to protective measures listed in sections 7 and 8. Ensure adequate ventilation.

For emergency responders

No data available. Personal protective equipment (PPE) - see Section 8.

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater. Do not discharge uncontrolled into the subsoil/soil.

6.3 Methods and material for containment and cleaning up

Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see section 13). When collected, handle material as described under the section heading "Disposal considerations".

6.4 Reference to other sections

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Information regarding waste disposal, see section 13. Information regarding personal protective measures, see section 8. Information regarding safe handling, see section 7.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

No special measures necessary if stored and handled as prescribed. Provide good ventilation at the work area (local exhaust ventilation, if necessary).

General protective and hygiene measures

Keep away from foodstuffs and beverages. Wash hands before breaks and after work. Do not eat, drink or smoke during work time. Remove soiled or soaked clothing immediately. Do not inhale vapours.

Advice on protection against fire and explosion

No special measures necessary.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Keep container tightly closed and dry in a cool, well-ventilated place. Keep from freezing. Protect from heat and direct sunlight.

Requirements for storage rooms and vessels

Containers which are opened must be carefully closed and kept upright to prevent leakage. Keep only in the original container.

Incompatible products

Do not store together with foodstuffs.

7.3 Specific end use(s)

Industry solution

Always read the label and product information before use.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values

No	Substance name	CAS no.	EC no.
1	glycerol	56-81-5	200-289-5
List of approved workplace exposure limits (WELs) / EH40			
	Glycerol mist		
	WEL long-term (8-hr TWA reference period)	10	mg/m ³

8.2 Exposure controls

Appropriate engineering controls

No data available.

Personal protective equipment

Respiratory protection

If workplace exposure limits are exceeded, a respiration protection approved for this particular job must be worn. In case of aerosol and mist formation, take appropriate measures for breathing protection in the event workplace threshold values are not specified.

Eye / face protection

Safety glasses (EN 166)

Hand protection

In case of intensive contact, wear protective gloves (EN 374). Before use, the protective gloves should be tested in any case for its specific work-station suitability (i.e. mechanical resistance, product compatibility and antistatic properties). Adhere to the manufacturer's instructions and information relating to the use, storage, care and replacement of protective gloves. Protective gloves shall be replaced immediately when physically damaged or worn. Design operations thus to avoid permanent use of protective gloves. Appropriate Material nitrile rubber

Other

Chemical-resistant work clothes. Rubber boots. (EN 13832-3/EN ISO 20345)

Environmental exposure controls

No data available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

State of aggregation
liquid
Form

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liquid			
Colour			
whitish			
Odour			
vanilla			
pH value			
Value	5.8		
Concentration	1 %		
Source	Manufacturer		
Boiling point / boiling range			
No data available			
Melting point/freezing point			
No data available			
Decomposition temperature			
No data available			
Flash point			
Value	> 100 °C		
Ignition temperature			
No data available			
Auto-ignition temperature			
Value	> 400 °C		
Comments	Product is not selfigniting.		
Oxidising properties			
not oxidizing			
Explosive properties			
not explosive			
Flammability			
Not applicable			
Lower explosion limit			
No data available			
Upper explosion limit			
No data available			
Vapour pressure			
Value	9 * 10 ⁻⁵ Pa		
Reference temperature	20 °C		
Reference substance	N-Isomer		
Source	Manufacturer		
Relative vapour density			
No data available			
Relative density			
No data available			
Density			
Value	1.1891 g/ml		
Reference temperature	20 °C		
Solubility			
No data available			
Partition coefficient n-octanol/water (log value)			
No	Substance name	CAS no.	EC no.
1	Flufenacet (ISO)	142459-58-3	-
log Pow		3.2	
Reference temperature		20 °C	
Source	Manufacturer		
Kinematic viscosity			
Not applicable			
Particle characteristics			
No data available			

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Other information
No data available.

SECTION 10: Stability and reactivity**10.1 Reactivity**

The product is stable under normal storage and handling conditions.

10.2 Chemical stability

Stable under recommended storage and handling conditions (See section 7).

10.3 Possibility of hazardous reactions

Dangerous reactions are not to be expected when handling product according to its intended use.

10.4 Conditions to avoid

Temperatures > 40°C

10.5 Incompatible materials

None known.

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**

Acute oral toxicity			
No	Product Name		
1	Starfire		
LD50		300	- 2000 mg/kg
Species		rat	
Method		OECD 423	
Source		Manufacturer	

Acute dermal toxicity	
No	Product Name
1	Starfire
Evaluation/classification	Based on available data, the classification criteria are not met.

Acute inhalational toxicity	
No	Product Name
1	Starfire
State of aggregation	Dust/mist
Evaluation/classification	Based on available data, the classification criteria are not met.

Skin corrosion/irritation	
No	Product Name
1	Starfire
Evaluation/classification	Based on available data, the classification criteria are not met.

Serious eye damage/irritation	
No	Product Name
1	Starfire
Evaluation/classification	Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation	
No data available	

Germ cell mutagenicity			
No	Substance name	CAS no.	EC no.
1	Flufenacet (ISO)	142459-58-3	-
Source		Manufacturer	
Evaluation/classification	Based on available data, the classification criteria are not met.		

Reproduction toxicity			
No	Substance name	CAS no.	EC no.
1	Flufenacet (ISO)	142459-58-3	-
Source		Manufacturer	
Evaluation/classification	Based on available data, the classification criteria are not met.		

Carcinogenicity	

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No	Substance name	CAS no.	EC no.
1	Flufenacet (ISO)	142459-58-3	-
Source		Manufacturer	
Evaluation/classification		Based on available data, the classification criteria are not met.	
STOT - single exposure			
No data available			
STOT - repeated exposure			
No	Product Name		
1	Starfire		
Source		Manufacturer	
Effects		May cause damage to organs through prolonged or repeated exposure	
Aspiration hazard			
No data available			

11.2 Information on other hazards**Endocrine disrupting properties**

No data available.

Other information

No data available.

SECTION 12: Ecological information**12.1 Toxicity**

Toxicity to fish (acute)			
No data available			
Toxicity to fish (chronic)			
No	Product Name		
1	Starfire		
NOEC		0.2	mg/l
Duration of exposure		97	day(s)
Species	Oncorhynchus mykiss		
Source	Manufacturer		
Toxicity to Daphnia (acute)			
No data available			
Toxicity to Daphnia (chronic)			
No	Product Name		
1	Starfire		
NOEC		3.26	mg/l
Duration of exposure		21	day(s)
Species	Daphnia magna		
Source	Manufacturer		
Toxicity to algae (acute)			
No	Product Name		
1	Starfire		
ErC50		0.0045	mg/l
Duration of exposure		120	h
Species	Selenastrum capricornutum		
Source	Manufacturer		
EbC50		0.00204	mg/l
Duration of exposure		72	h
Species	Selenastrum capricornutum		
Source	Manufacturer		
Toxicity to algae (chronic)			
No data available			
Bacteria toxicity			
No data available			

12.2 Persistence and degradability

Biodegradability			
No	Substance name	CAS no.	EC no.
1	Flufenacet (ISO)	142459-58-3	-
Source		Manufacturer	
Evaluation		not readily biodegradable	

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Bioconcentration factor (BCF)			
No	Substance name	CAS no.	EC no.
1	Flufenacet (ISO)	142459-58-3	-
BCF		71	
Source		Manufacturer	

Partition coefficient n-octanol/water (log value)			
No	Substance name	CAS no.	EC no.
1	Flufenacet (ISO)	142459-58-3	-
log Pow		3.2	
Reference temperature		20	°C
Source		Manufacturer	

12.4 Mobility in soil

Mobility in soil			
No	Substance name	CAS no.	EC no.
1	Flufenacet (ISO)	142459-58-3	-
log Koc		2.305	
Source		Manufacturer	

12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	
PBT assessment	According to the information provided in the supply chain, the mixture does not contain > 0.1% of a substance that is considered to be PBT.
vPvB assessment	According to the information provided in the supply chain, the mixture does not contain > 0.1% of a substance that is considered to be vPvB.

12.6 Endocrine disrupting properties

No data available.

12.7 Other adverse effects

Other adverse effects
No other ecological effects are to be mentioned specifically. See the product label for additional instructions on environmental precautions when applying the product. An environmental hazard cannot be ruled out in the event of unprofessional handling or disposal.

12.8 Other information

Other information
Do not discharge product unmonitored into the environment.

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Product**

Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.

Packaging

Residues must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Incompletely emptied packaging must be disposed of in the form of disposal specified by the regional disposer.

SECTION 14: Transport information**14.1 Transport ADR/RID/ADN**

Class	9
Classification code	M6
Packing group	III
Hazard identification no.	90
UN number	UN3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical name	Flufenacet (ISO)
Tunnel restriction code	-
Label	9
Environmentally hazardous substance mark	Symbol "fish and tree"

14.2 Transport IMDG

Class	9
Packing group	III
UN number	UN3082

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Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical name	Flufenacet (ISO)
EmS	F-A, S-F
Label	9
Marine pollutant mark	Symbol "fish and tree"

14.3 Transport ICAO-TI / IATA

Class	9
Packing group	III
UN number	UN3082
Proper shipping name	Environmentally hazardous substance, liquid, n.o.s.
Technical name	Flufenacet (ISO)
Label	9
Environmentally hazardous substance mark	Symbol "fish and tree"

14.4 Other information

No data available.

14.5 Environmental hazards

Information on environmental hazards, if relevant, please see 14.1 - 14.3.

14.6 Special precautions for user

No data available.

14.7 Maritime transport in bulk according to IMO instruments

Not relevant

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulations****Regulation (EC) No 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)**

According to the data available and/or specifications supplied by upstream suppliers, this product does not contain any substances considered as substances requiring authorisation as listed on Annex XIV of the REACH regulation (EC) 1907/2006.

REACH candidate list of substances of very high concern (SVHC) for authorisation

According to available data and the information provided by preliminary suppliers, the product does not contain substances that are considered substances meeting the criteria for inclusion in annex XIV (List of Substances Subject to Authorisation) as laid down in Article 57 and article 59 of REACH (EC) 1907/2006.

Regulation (EC) No 1907/2006 (REACH) Annex XVII: RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES

The product is considered being subject to REACH regulation (EC) 1907/2006 annex XVII. No 3

The product contains following substance(s) that are considered being subject to REACH regulation (EC) 1907/2006 annex XVII.

No	Substance name	CAS no.	EC no.	No
1	1,2-benzisothiazol-3(2H)-one	2634-33-5	220-120-9	75
2	Flufenacet (ISO)	142459-58-3	-	75

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances

This product is subject to Part I of Annex I, risk category: E1

Other regulations

Adhere to the national sanitary and occupational safety regulations when using this product.

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for this mixture.

SECTION 16: Other information**Sources of key data used to compile the data sheet:**

Regulation (EC) No 1907/2006 (REACH), 1272/2008 (CLP) as amended in each case.

Directives 2000/39/EC, 2006/15/EC, 2009/161/EU, (EU) 2017/164.

National Threshold Limit Values of the corresponding countries as amended in each case.

Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.

The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding section.

Full text of the H- and EUH- phrases drawn up in sections 2 and 3 (provided not already drawn up in these sections)

H315	Causes skin irritation.
H318	Causes serious eye damage.
H400	Very toxic to aquatic life.

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Region: GB

Creation of the safety data sheet

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This information is based on our present knowledge and experience.

The safety data sheet describes products with a view to safety requirements.

It does not however, constitute a guarantee for any specific product properties and shall not establish a legally valid contractual relationship.

Alterations/supplements:

Alterations to the previous edition are marked in the left-hand margin.

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