

Product no.	BP20301	Page 1 of 14
Product name	FLUFENACET 400 g/l + DIFLUFENICAN 200 g/l SC	February 2014
Safety data sheet according to EU Reg. 1907/2006 as amended		Supersedes November 2013

SAFETY DATA SHEET

FLUFENACET 400 g/l + DIFLUFENICAN 200 g/l SC

Revision: Sections containing a revision or new information are marked with a ♣.

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

- 1.1. **Product identifier** **FLUFENACET 400 g/l + DIFLUFENICAN 200 g/l SC**
Contains flufenacet
- 1.2. **Relevant identified uses of the substance or mixture and uses advised against** Can be used as herbicide only.
- 1.3. **Details of the supplier of the safety data sheet** **CHEMINOVA A/S**
P.O. Box 9
DK-7620 Lemvig
Denmark
sds@cheminova.dk
- 1.4. **Emergency telephone number** ... (+45) 97 83 53 53 (24 h; for emergencies only)

SECTION 2: HAZARDS IDENTIFICATION

- 2.1. **Classification of the substance or mixture** See section 16 for full text of hazard statements and R-phrases.
- CLP classification of the product according to Reg. 1272/2008 as amended Specific target organ toxicity – repeated exposure: Category 2 (H373)
Hazards to the aquatic environment, acute: Category 1 (H400)
chronic Category 1 (H410)
- DPD classification of the product according to Dir. 1999/45/EC as amended R48/22 N;R50/53
- WHO classification Class III: Slightly hazardous
Guidelines to Classification 2009
- Health hazards The product may be harmful by prolonged or repeated exposure.

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Environmental hazards The product is very toxic to aquatic organisms.

2.2. Label elements

According to EU Reg. 1272/2008 as amended

Product identifier Flufenacet 400 g/l + Diflufenican 200 g/l SC
Contains flufenacet

Hazard pictograms (GHS08, GHS09)



Signal word Warning

Hazard statements

H373 May cause damage through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Supplementary hazard statements

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

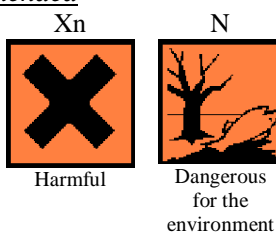
EUH401 To avoid risks to human health and the environment, comply with the instructions of use.

Precautionary statements

P260 Do not breathe vapours.
P264 Wash hands thoroughly after handling.
P273 Avoid release to the environment.
P314 Get medical attention/advice if you feel unwell.
P391 Collect spillage.
P501 Dispose of contents/container as hazardous waste.

According to Dir. 1999/45/EC as amended

Hazard symbols



Contains flufenacet

R-phrases

R48/22 Harmful: danger of serious damage to health by prolonged exposure if swallowed.

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrases

S24 Avoid contact with skin.
S37 Wear suitable gloves.
S60 This material and its container must be disposed of as hazardous waste.

S61 Avoid release to the environment. Refer to special instructions/safety data sheets.

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

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reaction.

To avoid risks to man and the environment, comply with the instructions of use.

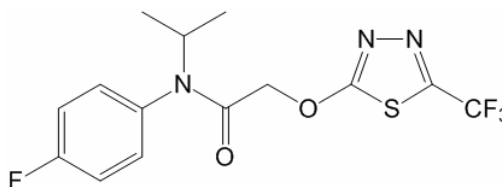
- 2.3. **Other hazards** None of the ingredients in the product meets the criteria for being PBT or vPvB.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

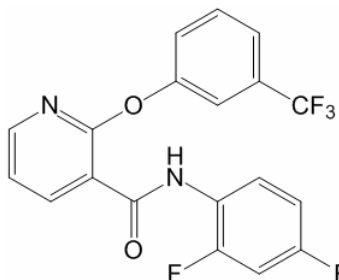
- 3.1. **Substances** The product is a mixture, not a substance.
- 3.2. **Mixtures** See section 16 for full text of hazard statements and R-phrases.

Active ingredient

Flufenacet	Content: 33% by weight
CAS name	Acetamide, N-(4-fluorophenyl)-N-(1-methylethyl)-2-[[5-(trifluoromethyl)-1,3,4-thiadiazol-2-yl]oxy]-
CAS no.	142459-58-3
IUPAC name(s)	4'-Fluoro-N-isopropyl-2-(5-trifluoromethyl-1,3,4-thiadiazol-2-yloxy)acetanilide
ISO name/EU name	Flufenacet
EC no. (list no.)	604-290-5
EU index no.	613-164-00-9
CLP classification of the ingredient	Acute oral toxicity: Category 4 (H302) Sensitisation – skin: Category 1 (H317) Specific target organ toxicity – repeated exposure: Category 2 (H373) Hazards to the aquatic environment, acute: Category 1 (H400) chronic: Category 1 (H410)
DSD classification of the ingredient	Xn;R22 R43 R48/22 N;R50/53
Structural formula	



Diflufenican	Content: 16% by weight
CAS name	3-Pyridinecarboxamide, N-(2,4-difluorophenyl)-2-[3-(trifluoromethyl)phenoxy]-
CAS no.	83164-33-4
IUPAC name	2',4'-Difluoro-2-(α,α,α -trifluoro-m-tolyloxy)nicotinamide
ISO name/EU name	Diflufenican
EC no. (list no.)	617-446-2
EU index no.	616-032-00-9
CLP classification of the ingredient	Hazards to the aquatic environment, chronic: Category 3 (H412)
DSD classification of the ingredient	R52/53
Structural formula	



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Reportable ingredients

	Content (% w/w)	CAS no.	EC no. (EINECS no.)	CLP classification	DSD classification
Sodium alkylnaphthalene sulphonate- formaldehyde condensate	3	577773-56-9	None	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319)	Xi;R36/38 Irritant
1,2-Benzisothia- zol-3(2H)-one	0.01	2634-33-5	220-120-9	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Skin Sens. 1A (H317) Aquatic Acute 1 (H400)	Xn;R22 Xi;R38-41 R43 N;R50 Harmful, dangerous for the environment

SECTION 4: FIRST AID MEASURES

4.1. **Description of first aid measures**

Inhalation	If experiencing any discomfort, immediately remove from exposure. Light cases: Keep person under surveillance. Get medical attention immediately if symptoms develop. Serious cases: Get medical attention immediately or call for an ambulance.
Skin contact	Immediately remove contaminated clothing and footwear. Flush skin with water. Wash with water and soap. See physician if any symptom develops.
Eye contact	Immediately rinse eyes with much water or eyewash solution, occasionally opening eyelids, until no evidence of chemical remains. Remove contact lenses after a few minutes and rinse again. See physician if irritation persists.
Ingestion	Inducing vomiting is not recommended. Rinse mouth and drink a few glasses of water or milk. If vomiting does occur, rinse mouth and drink fluids again. Call a doctor or get medical attention immediately.

4.2. **Most important symptoms and effects, both acute and delayed**

In animal tests non-specific symptoms were seen, such as irregular respiration and lowered activity.

4.3. **Indication of any immediate medical attention and special treatment needed**

Immediate medical attention is required in case of ingestion.

It may be helpful to show this safety data sheet to physician.

Note to physician

There is no specific antidote against this substance. Treatment is as for a general chemical. Gastric lavage and/or administration of activated charcoal can be considered.

SECTION 5: FIREFIGHTING MEASURES

5.1. **Extinguishing media**

Dry chemical or carbon dioxide for small fires, water spray or foam for large fires. Avoid heavy hose streams.

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- 5.2. **Special hazards arising from the substance or mixture** The essential breakdown products are volatile, toxic, malodorous, irritant and inflammable compounds such as hydrogen fluoride, sulphur dioxide, nitrogen oxides, carbon monoxide, carbon dioxide and various fluorinated organic compounds.
- 5.3. **Advice for firefighters** Use water spray to keep fire-exposed containers cool. Approach fire from upwind to avoid hazardous vapours and toxic decomposition products. Fight fire from protected location or maximum possible distance. Dike area to prevent water runoff. Firemen should wear self-contained breathing apparatus and protective clothing.

SECTION 6: ACCIDENTAL RELEASE MEASURES

- 6.1. **Personal precautions, protective equipment and emergency procedures** It is recommended to have a predetermined plan for the handling of spills. Empty, closable vessels for the collection of spills should be available.
- In case of large spill (involving 10 tons of the product or more):
1. Use personal protection equipment; see section 8
 2. Call emergency telephone no.; see section 1
 3. Alert authorities.
- Observe all safety precautions when cleaning up spills. Use personal protection equipment. Depending on the magnitude of the spill this may mean wearing respirator, face mask or safety glasses, chemical resistant clothing, gloves and rubber boots.
- Stop the source of the spill immediately if safe to do so.
- 6.2. **Environmental precautions** Contain the spill to prevent any further contamination of surface, soil or water. Wash waters must be prevented from entering surface water drains. Uncontrolled discharge into water courses must be alerted to the appropriate regulatory body.
- 6.3. **Methods and materials for containment and cleaning up** It is recommended to consider possibilities to prevent damaging effects of spills, such as bunding or capping. See GHS (Annex 4, Section 6).
- If appropriate, surface water drains should be covered. Minor spills on the floor or other impervious surface should be absorbed onto an absorptive material such as universal binder, hydrated lime, Fuller's earth or other absorbent clays. Collect contaminated absorbent in suitable containers. Rinse area with industrial detergent and much water. Absorb wash liquid onto suitable absorbent as well and collect in suitable containers. Wash waters must be prevented from entering surface water drains. The used containers must be properly closed and labelled.
- Large spills which soak into the ground should be dug up and placed in suitable containers.
- Spills in water should be contained as much as possible by isolation of the contaminated water. The contaminated water must be collected and removed for treatment or disposal.

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- 6.4. **Reference to other sections** See subsection 8.2. for personal protection.
See section 13 for disposal.

SECTION 7: HANDLING AND STORAGE

- 7.1. **Precautions for safe handling** In an industrial environment it is recommended to avoid all personal contact with the product, if possible by using closed systems with remote system control. Otherwise it is recommended to handle the material by mechanical means as much as possible. Adequate ventilation or local exhaust ventilation is required. The exhaust gases should be filtered or treated otherwise. For personal protection in this situation, see section 8.
- For its use as a pesticide, first look for precautions and personal protection measures on the label or included in the packaging or for other official guidance or policy in force. If these are lacking, see section 8.
- Do not wear heavily contaminated clothing. Wash thoroughly after handling. Before removing gloves, wash them with water and soap. Wear only clean clothes when leaving job. Wash protective clothing and protective equipment with water and soap after use.
- Do not discharge to the environment. Collect all waste material and remains from cleaning equipment, etc., and dispose of as hazardous waste. See section 13 for disposal.
- 7.2. **Conditions for safe storage, including any incompatibilities** The product is stable under normal conditions of warehouse storage. Recommended storage temperature 5 - 30°C.
- Store in sealed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorised persons or children. A warning sign reading "POISON" is recommended. The room should only be used for storage of chemicals. Food, drink, feed and seed should not be present. A hand wash station should be available.
- 7.3. **Specific end use(s)** The product is a registered pesticide which may only be used for the applications it is registered for, in accordance with a label approved by the regulatory authorities.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

- 8.1. **Control parameters**
- Personal exposure limits To our knowledge, personal exposure limits have not been established for any of the ingredients. However, personal exposure limits defined by local regulations may exist and must be observed.
- Flufenacet**
- DNEL 0.017 mg/kg bw/day
- PNEC, aquatic 44 ng/l
- Diflufenican**
- DNEL, systemic 0.11 mg/kg bw/day
- PNEC, aquatic 2.5 ng/l

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8.2. **Exposure controls** When used in a closed system, personal protection equipment will not be required. The following is meant for other situations, when the use of a closed system is not possible, or when it is necessary to open the system. Consider the need to render equipment or piping system non-hazardous before opening.

The precautions mentioned below are primarily meant for handling of the undiluted product and for preparing the spray solution, but can be recommended for spraying as well.



Respiratory protection

The product is not likely to present an airborne exposure concern during normal handling, but in the event of a discharge of the material which produces a heavy vapour or mist, workers should put on officially approved face mask or respiratory protection equipment with a universal filter type including particle filter.



Protective gloves

Wear chemical resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber or viton. The breakthrough times of these materials for the product are unknown, but it is expected that they will give adequate protection.



Eye protection

Wear safety glasses. It is recommended to have an eye wash fountain immediately available in the workplace when there is a potential for eye contact.



Other skin protection

Wear appropriate chemical resistant clothing to prevent skin contact depending on the extent of exposure. During most normal work situations where exposure to the material cannot be avoided for a limited time span, waterproof pants and apron of chemical resistant material or coveralls of polyethylene (PE) will be sufficient. Coveralls of PE must be discarded after use if contaminated. In cases of appreciable or prolonged exposure, coveralls of barrier laminate may be required.

♣ SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on physical and chemical properties

Appearance	Beige to light brown liquid
Odour	Slight odour of mixed chemicals
Odour threshold	Not determined
pH	Undiluted: 3.6 - 5.0
Melting point.....	Not determined
Initial boiling point and boiling range	100°C
Flash point	> 100°C if any
Evaporation rate	Not determined
Flammability (solid/gas)	Not applicable (liquid)
Upper /lower flammability or explosive limits	Not determined
Vapour pressure	Flufenacet : 9×10^{-5} Pa at 20°C Diflufenican : 4.25×10^{-6} Pa at 25°C 8.19×10^{-6} Pa at 35°C
Vapour density	Not determined
Relative density	Not determined Density: 1.24 g/ml

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Solubility(ies)	Solubility of flufenacet at 25°C in:
	acetone > 200 g/l
	acetonitrile > 200 g/l
	toluene > 200 g/l
	dichloromethane > 200 g/l
	dimethylsulphoxide > 200 g/l
	dimethylformamide > 200 g/l
	propanol 170 g/l
	n-octanol 88 g/l
	propylene glycol 74 g/l
	hexane 8.7 g/l
	water 56 mg/l at 20°C
	Solubility of diflufenican at 20°C in:
	1,2-dichloroethane 57-67 g/l
	acetone 100-114 g/l
	ethyl acetate 67-80 g/l
	methanol < 10 g/l
	hexane < 10 g/l
	xylene 30-40 g/l
	water < 0.05 mg/l at 25°C
Partition coefficient n-octanol/water	Flufenacet : log K _{ow} = 3.2
	Diflufenican : log K _{ow} = 4.9
Autoignition temperature	> 400 g/l if any
Decomposition temperature	Decomposition of flufenacet starts at 150°C
Viscosity	1400 - 2900 mPa.s
Explosive properties	Not explosive
Oxidising properties	Not oxidising

9.2. Other information

Miscibility The product is miscible with water.

SECTION 10: STABILITY AND REACTIVITY

- 10.1. **Reactivity** To our knowledge, the product has no special reactivities.
- 10.2. **Chemical stability** Stable at ambient temperatures.
- 10.3. **Possibility of hazardous reactions** None known.
- 10.4. **Conditions to avoid** Heating of the product may produce harmful and irritant vapours.
- 10.5. **Incompatible materials** None known.
- 10.6. **Hazardous decomposition products** See subsection 5.2.

SECTION 11: TOXICOLOGICAL INFORMATION

- 11.1. **Information on toxicological effects** * = Based on available data, the classification criteria are not met.

Product

Acute toxicity The product is not considered as harmful by skin contact, ingestion or by inhalation. * The acute toxicity is measured as:

Route(s) of entry - ingestion LD₅₀, oral, rat: > 2000 mg/kg (method OECD 425)
signs of toxicity at this concentration

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- skin	LD ₅₀ , dermal, rat: > 2000 mg/kg (method OECD 402)
- inhalation	LC ₅₀ , inhalation, rat: > 5.15 mg/l/4 h (method OECD 403)
Skin corrosion/irritation	Minimally irritating to skin (method OECD 404). *
Serious eye damage/irritation	Minimally irritating to eyes (method OECD 405). *
Respiratory or skin sensitisation ...	Not an allergenic skin sensitizer (method OECD 429). *
Aspiration hazards	The product does not present an aspiration pneumonia hazard. *
Symptoms and effects, acute and delayed	In animal tests non-specific symptoms were seen, such as irregular respiration and lowered activity.

Flufenacet

Acute toxicity	The substance is harmful by ingestion. It is not expected to be harmful by skin contact or inhalation. The acute toxicity is estimated as:
Route(s) of entry - ingestion	LD ₅₀ , oral, rat (male): 1617 mg/kg LD ₅₀ , oral, rat (female): 589 mg/kg
- skin	LD ₅₀ , dermal, rat: > 2000 mg/kg *
- inhalation	LC ₅₀ , inhalation, rat: > 3.74 mg/l *
Skin corrosion/irritation	Not irritating to skin. *
Serious eye damage/irritation	Not irritating to eyes. *
Respiratory or skin sensitisation ...	Skin sensitizer.
Germ cell mutagenicity	Not mutagenic. *
Carcinogenicity	Not carcinogenic. *
Reproductive toxicity	No effects on reproduction. *
STOT – single exposure	To our knowledge, no specific effects have been observed after single exposure. *
STOT – repeated exposure	Target organs: liver, thyroid, eye, kidney LOEL: 25 ppm (1.2 mg/kg bw/day) in a 2-year rat study based on increased incidence of renal pelvic mineralisation.

Diflufenican

Acute toxicity	The substance is not harmful by inhalation, in contact with skin or if swallowed. * The acute toxicity is measured as:
Route(s) of entry - ingestion	LD ₅₀ , oral, rat: > 5000 mg/kg (5 studies)
- skin	LD ₅₀ , dermal, rat: > 2000 mg/kg (method OECD 402)
- inhalation	LC ₅₀ , inhalation, rat: > 5.12 mg/l/4 h (method US EPA (1985))
Skin corrosion/irritation	Not irritating to skin (method US EPA (1985)). *
Serious eye damage/irritation	May be slightly irritating to eyes (US EPA (1985)). *

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Respiratory or skin sensitisation ...	The substance was not sensitising in the Local Lymph Node Assay (method OECD 429). *
Germ cell mutagenicity	Results for <i>in vitro</i> tests on diflufenican are equivocal (5 studies), but diflufenican was not mutagenic in an <i>in vivo</i> test (method OECD 475). *
Carcinogenicity	No carcinogenic effects have been observed for diflufenican (method OECD 453). *
Reproductive toxicity	No effects on fertility are found for diflufenican. No indications of teratogenic (birth defects causing) effects of diflufenican are found (3 studies). *
STOT – single exposure	To our knowledge, no specific effects have been observed for the substance. *
STOT – repeated exposure	Target organ: no specific target organ NOEL: 8 - 8.7 mg/kg bw/day in a 13-week rat study. At this exposure reduced bodyweight gain was found (method OECD 408). *

Sodium alkyl-naphthalene sulphonate-formaldehyde condensate

Acute toxicity	The substance is not considered harmful by single exposure. *
Route(s) of entry	
- ingestion	LD ₅₀ , oral, rat: > 4500 mg/kg
- skin	LD ₅₀ , dermal, rat: not available
- inhalation	LC ₅₀ , inhalation, rat: not available
Skin corrosion/irritation	Irritating to skin.
Serious eye damage/irritation	Irritating to eyes.
STOT – single exposure	Inhalation of dust can cause irritation of airways. It is not clear if the criteria for classification are met.

1,2-Benzisothiazol-3(2H)-one

Acute toxicity	The substance is harmful by ingestion.
Route(s) of entry	
- ingestion	LD ₅₀ , oral, rat (male): 670 mg/kg LD ₅₀ , oral, rat (female): 784 mg/kg (method OPPTS 870.1100; measured on 73% solution)
- skin	LD ₅₀ , dermal, rat: > 2000 mg/kg (method OPPTS 870.1200 measured on 73% solution) *
- inhalation	LC ₅₀ , inhalation, rat: not available
Skin corrosion/irritation	Slightly irritating to skin (method OPPTS 870.2500).
Serious eye damage/irritation	Severely irritating to eyes (method OPPTS 870.2400).
Respiratory or skin sensitisation ...	Moderate dermal sensitizer to guinea pigs (method OPPTS 870.2600). The substance appears to be significantly more sensitizing to humans.

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Germ cell mutagenicity	All acceptable mutagenicity studies showed a negative mutagenic response for this chemical. *
Carcinogenicity	Short term tests and a consideration of the structure have shown that the substance is not likely to present a carcinogenic hazard to man. *
Reproductive toxicity	The reproduction study did not show evidence of increased susceptibility of offspring. Developmental effects consisted of slightly delayed ossification. *

♣ SECTION 12: ECOLOGICAL INFORMATION

- 12.1. **Toxicity** The product is very toxic to aquatic algae and plants. It is less toxic to fish and soil macroorganisms. It is not considered as harmful to birds, insects, aquatic invertebrates and soil microorganisms.

The ecotoxicity is measured on the product as:

- Fish	Blugill sunfish (<i>Lepomis macrochirus</i>)	96-h LC ₅₀ : 6.43 mg/l
- Invertebrates	Daphnids (<i>Daphnia magna</i>)	48-h EC ₅₀ : 114 mg/l
- Algae	Green algae (<i>Pseudokirchneriella subcapitata</i>)	72-h EC ₅₀ : 3.06 µg/l
- Plants	Duckweed (<i>Lemna gibba</i>)	7-day EC ₅₀ : 66.7 µg/l 7-day NOEC: 1.0 µg/l
- Earthworms	<i>Eisenia foetida foetida</i>	28-day LC ₅₀ : 81 mg/kg dry substrate
- Bees	Honeybees	48-h LD ₅₀ , acute oral: > 420 µg/bee 48-h LD ₅₀ , contact: > 600 µg/bee

- 12.2. **Persistence and degradability** **Flufenacet** is biodegradable, but does not meet the criteria for being readily biodegradable. It undergoes slow degradation in the environment and in waste water treatment plants. Primary degradation half-lives vary with circumstances from a few weeks to a few months in aerobic soil and water.

Diflufenican is not rapidly degraded in the environment or in wastewater treatment plants. Its primary half-life in soil can vary from several months to one year depending on circumstances.

The product contains small amounts of other ingredients which are not readily biodegradable and may not be degradable in a waste water treatment plant.

- 12.3. **Bioaccumulative potential** See section 9 for n-octanol/water partition coefficients.

Flufenacet is not expected to bioaccumulate. The measured bioconcentration factor (BCF) of flufenacet is 71.4.

Diflufenican has a potential to bioaccumulate. The bioconcentration factor was measured to be approx. 1500 for whole fish (rainbow trout). It was excreted within 14 days.

- 12.4. **Mobility in soil** Under normal conditions **flufenacet** is of low mobility in soil.

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In the environment **diflufenican** is not mobile, but is readily absorbed by soil particles.

- 12.5. **Results of PBT and vPvB assessment** None of the ingredients meets the criteria for being PBT or vPvB.
- 12.6. **Other adverse effects** Other relevant hazardous effects in the environment are not known.

SECTION 13: DISPOSAL CONSIDERATIONS
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- 13.1. **Waste treatment methods** Remaining quantities of the material and empty but unclean packaging should be regarded as hazardous waste.
- Disposal of waste and packagings must always be in accordance with all applicable local regulations.
- Disposal of product According to the Waste Framework Directive (2008/98/EC), possibilities for reuse or reprocessing should first be considered. If this is not feasible, the material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing.
- Disposal of packaging Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.
- Disposal of packaging It is recommended to consider possible ways of disposal in the following order:
1. Reuse or recycling should first be considered. If offered for recycling, containers must be emptied and triply rinsed (or equivalent). Do not discharge rinsing water to sewer systems.
 2. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.
 3. Delivery of the packaging to a licensed service for disposal of hazardous waste.
 4. Disposal in a landfill or burning in open air should only occur if no other possibility exists. For disposal in a landfill containers should be emptied completely, rinsed and punctured to make them unusable for other purposes. If burned, stay out of smoke.

SECTION 14: TRANSPORT INFORMATION
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ADR/RID/IMDG/IATA/ICAO classification

- 14.1. **UN number** 3082
- 14.2. **UN proper shipping name** Environmentally hazardous substance, liquid, n.o.s. (flufenacet and diflufenican)
- 14.3. **Transport hazard class(es)** 9
- 14.4. **Packing group** III
- 14.5. **Environmental hazards** Marine pollutant
- 14.6. **Special precautions for user** Do not discharge to the environment.

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14.7. **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code**

The product is not transported in bulk tankers.

♣ SECTION 15: REGULATORY INFORMATION

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

Seveso category in Annex I, part 2, to Dir. 96/82/EC: dangerous for the environment.

Young people under the age of 18 are not allowed to work with the product.

All ingredients in the product are covered by EU chemical legislation.

15.2. **Chemical safety assessment**

A chemical safety assessment is not required to be included for this product.

♣ SECTION 16: OTHER INFORMATION

Relevant changes in the safety data sheet

The results of ecotoxicity measurements have been inserted.

List of abbreviations

CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging; refers to EU regulation 1272/2008 as amended
Dir.	Directive
DNEL	Derived No Effect Level
DPD	Dangerous Preparation Directive; refers to Dir. 1999/45/EC as amended
DSD	Dangerous Substance Directive; refers to Dir. 67/548/EEC as amended
EC	European Community
EC ₅₀	50% Effect Concentration
EINECS	European Inventory of Existing Commercial Chemical Substances
GHS	Globally Harmonized classification and labelling System of chemicals, Fifth revised edition 2013
IBC	International Bulk Chemical code
ISO	International Organisation for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LC ₅₀	50% Lethal Concentration
LD ₅₀	50% Lethal Dose
LOEL	Lowest Observed Effect Level
MARPOL	Set of rules from the International Maritime Organisation (IMO) for prevention of sea pollution
NOEC	No Observed Effect Concentration
NOEL	No Observed Effect Level
N.o.s.	Not otherwise specified
OECD	Organisation for Economic Cooperation and Development
OPPTS	Office of Prevention, Pesticides and Toxic Substances
PBT	Persistent, Bioaccumulative, Toxic
PNEC	Predicted No Effect Concentration
Reg.	Regulation
R-phrased	Risk phrase

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SC Suspension Concentrate
S-phrase Safety phrase
STOT Specific Target Organ Toxicity
US EPA Environmental Protection Agency (USA)
vPvB very Persistent, very Bioaccumulative
WHO World Health Organisation

References Data measured on the product are unpublished company data. Data on ingredients are available from published literature and can be found several places.

Method for classification Test data

Used CLP hazard statements
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H373 May cause damage through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.
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 of use

Used R-phrases
R22 Harmful if swallowed.
R36/38 Irritating to eyes and skin.
R38 Irritating to skin.
R41 Risk of serious damage to eyes.
R43 May cause sensitisation by skin contact.
R48/22 Harmful: danger of serious damage to health by prolonged exposure if swallowed.
R50 Very toxic to aquatic organisms.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Advice on training This material should only be used by persons who are made aware of its hazardous properties and have been instructed in the required safety precautions.

The information provided in this safety data sheet is believed to be accurate and reliable, but uses of the product vary and situations unforeseen by Cheminova A/S may exist. The user has to check the validity of the information under local circumstances.

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Safety, Health, Environment & Quality Department / GHB

