

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

1.1. Product identifier

CA Code (Nufarm)	: 3510
Oracle Recipe Code (Nufarm)	: OR3510
Item codes	: 100011122
Product form	: Mixture
Trade name	: Solstice
Type (Nufarm)	: Country Specific
Country (Nufarm)	: United Kingdom

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

1.2.1. Relevant identified uses

Main use category	: Professional use
Use of the substance/mixture	: Herbicide

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Distributor

Nufarm UK Limited
Wyke Lane
Wyke
BD12 9EJ Bradford - UK
T +44 (0)1274 691234 - F +44 (0) 1274691176
infouk@uk.nufarm.com

1.4. Emergency telephone number

Emergency number : +44 (0)1274 696603

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Hazardous to the aquatic environment — H400
Acute Hazard, Category 1
Hazardous to the aquatic environment — H410
Chronic Hazard, Category 1

Full text of hazard classes and H-statements : see section 16

Adverse physicochemical, human health and environmental effects

Very toxic to aquatic life with long lasting effects.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS09

Signal word (CLP)	: Warning
Hazardous ingredients	: Florasulam
Hazard statements (CLP)	: H410 - Very toxic to aquatic life with long lasting effects.
Precautionary statements (CLP)	: P273 - Avoid release to the environment. P391 - Collect spillage. P501 - Dispose of contents and container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
EUH-statements	: EUH401 - To avoid risks to human health and the environment, comply with the instructions for use. EUH208 - Contains 1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one. May produce an

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allergic reaction.

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
FLORASULAM (ISO)	(CAS-No.) 145701-23-1 (EC Index-No.) 613-230-00-7	5	Aquatic Chronic 1, H410
1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one	(CAS-No.) 2634-33-5 (EC-No.) 220-120-9 (EC Index-No.) 613-088-00-6	<0.1	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Acute 1, H400

Specific concentration limits:

Name	Product identifier	Specific concentration limits
1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one	(CAS-No.) 2634-33-5 (EC-No.) 220-120-9 (EC Index-No.) 613-088-00-6	(C >= 0,05) Skin Sens. 1, H317

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. If you feel unwell, seek medical advice.
First-aid measures after skin contact	: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse eyes with water as a precaution. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth out with water. Drink plenty of water. Do not induce vomiting. Get immediate medical advice/attention.

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

Symptoms/effects	: Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/effects after inhalation	: None under normal use.
Symptoms/effects after skin contact	: None under normal conditions.
Symptoms/effects after eye contact	: None under normal conditions.
Symptoms/effects after ingestion	: None under normal conditions.

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

Treat symptomatically. Seek immediate medical advice.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire	: Toxic fumes may be released. Carbon monoxide. Carbon dioxide. Nitrogen oxides. Hydrogen fluoride. Hydrogen sulfide. Fluorinated hydrocarbons.
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5.3. Advice for firefighters

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Fight fire from safe distance and protected location.
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.
Emergency procedures : Ventilate spillage area.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Cover spill with non combustible material, e.g.: sand, earth, vermiculite. Collect spillage.
Methods for cleaning up : Take up liquid spill into absorbent material.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment.
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Contaminated work clothing should not be allowed out of the workplace. Take off immediately all contaminated clothing and wash it before reuse. Separate working clothes from town clothes. Launder separately.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool.
Information on mixed storage : Keep away from food, drink and animal feeding stuffs. Keep out of the reach of children.
Storage area : Keep out of the reach of children. Store away from heat. Store in a well-ventilated place.
Special rules on packaging : Keep only in original container. Store in a closed container.

7.3. Specific end use(s)

Herbicide.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Personal protective equipment:

Protective clothing. Gloves. Insufficient ventilation: wear respiratory protection. Safety glasses.

Materials for protective clothing:

Impermeable clothing

Hand protection:

Protective gloves. Butyl rubber gloves. Nitrile rubber gloves

Eye protection:

Safety glasses. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

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In case of insufficient ventilation, wear suitable respiratory equipment



Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: opaque.
Colour	: white.
Odour	: Organic solvent.
Odour threshold	: No data available
pH	: 4,04 @25°C
pH solution concentration	: 1 % 4.4 @ 25°C
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: < 0 °C
Freezing point	: No data available
Boiling point	: Not determined
Flash point	: > 66 °C Not flammable
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: Florasulam: 6.55 x 10E-5 Pa @ 25°C
Relative vapour density at 20 °C	: 1,04
Relative density	: No data available
Solubility	: Water: Emulsifiable in water
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: 1048 mPa.s @ 20°C; 897 mPa.s @ 40°C
Explosive properties	: Product is not explosive.
Oxidising properties	: Non oxidizing material according to EC criteria.
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7). Avoid high temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. On exposure to high temperature, may decompose, releasing corrosive gases.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Solstice	
LD50 oral rat	> 2000 mg/kg (OECD 425 method)
LD50 dermal rat	> 2000 mg/kg (OECD 402 method)
LC50 inhalation rat (mg/l)	> 5,07 mg/l/4h (OECD 403 method)
FLORASULAM (ISO) (145701-23-1)	
LD50 oral rat	> 5000 mg/kg (OECD 425 method)
LD50 dermal rat	> 2000 mg/kg (OECD 402 method)
LC50 inhalation rat (mg/l)	> 5,09 mg/l/4h (OECD 403 method)
1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one (2634-33-5)	
LD50 oral rat	670 - 784 mg/kg
LD50 dermal rat	> 2000 mg/kg
Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified
Skin corrosion/irritation	: Not classified (Based on available data, the classification criteria are not met) pH: 4,04 @25°C
Serious eye damage/irritation	: Not classified (Based on available data, the classification criteria are not met) pH: 4,04 @25°C
Respiratory or skin sensitisation	: Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity	: Not classified (Based on available data, the classification criteria are not met)
STOT-single exposure	: Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure	: Not classified (Based on available data, the classification criteria are not met)
FLORASULAM (ISO) (145701-23-1)	
LOAEL (oral, rat, 90 days)	500 mg/kg bodyweight/day (renal collecting duct hypertrophy)(EU method B).
Aspiration hazard	: Not classified (Based on available data, the classification criteria are not met)

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Very toxic to aquatic life with long lasting effects.
Acute aquatic toxicity	: Very toxic to aquatic life.
Chronic aquatic toxicity	: Very toxic to aquatic life with long lasting effects.

Solstice	
LC50 96h fish	> 2100 mg/l Oncorhynchus mykiss (Rainbow trout)
EC50 48h crustacea	> 2100 mg/l
EC50 72h algae	5,6 mg/l Pseudokirchneriella subcapitata
ErC50 (other aquatic plants)	0,055 mg/l 7 d (Lemna minor)
LC50, Eisenia fetida (Earthworm)	> 1000 mg/kg (14 days, Dry soil)
LD50, Dermal, Apis mellifera (bee)	> 2100 µg/bee (48 Hours)
LD50, Oral, Apis mellifera (bee)	> 1900 µg/bee (48 Hours)

12.2. Persistence and degradability

Solstice	
Persistence and degradability	Not readily biodegradable.
FLORASULAM (ISO) (145701-23-1)	
Persistence and degradability	Not readily biodegradable.

12.3. Bioaccumulative potential

Solstice	
Bioaccumulative potential	No bioaccumulation.

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FLORASULAM (ISO) (145701-23-1)	
BCF other aquatic organisms 1	< 2,21
Log Kow	1.11 @ pH 3 & 25°C, -1.10 @ pH 7 & 25°C, log Kow = -1.79 @ pH 10.0 & 25°C
Bioaccumulative potential	No bioaccumulation.

12.4. Mobility in soil

FLORASULAM (ISO) (145701-23-1)	
Mobility in soil	Mobile

12.5. Results of PBT and vPvB assessment

Solstice	
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII	

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
European List of Waste (LoW) code : 02 01 08* - agrochemical waste containing dangerous substances

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA
14.1. UN number		
3082	3082	3082
14.2. UN proper shipping name		
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Florasulam)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Florasulam)	Environmentally hazardous substance, liquid, n.o.s. (Florasulam)
Transport document description		
UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Florasulam), 9, III, (-)	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Florasulam), 9, III, MARINE POLLUTANT	UN 3082 Environmentally hazardous substance, liquid, n.o.s. (Florasulam), 9, III
14.3. Transport hazard class(es)		
9	9	9
14.4. Packing group		
III	III	III
14.5. Environmental hazards		
Dangerous for the environment : Yes	Dangerous for the environment : Yes Marine pollutant : Yes	Dangerous for the environment : Yes
No supplementary information available		

14.6. Special precautions for user

- Overland transport

Classification code (ADR) : M6
Special provisions (ADR) : 274, 335, 375, 601
Limited quantities (ADR) : 5I
Excepted quantities (ADR) : E1
Packing instructions (ADR) : P001, IBC03, LP01, R001
Special packing provisions (ADR) : PP1
Mixed packing provisions (ADR) : MP19
Portable tank and bulk container instructions (ADR) : T4
Portable tank and bulk container special provisions (ADR) : TP1, TP29
Tank code (ADR) : LGBV

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Vehicle for tank carriage : AT
Transport category (ADR) : 3
Special provisions for carriage - Packages (ADR) : V12
Special provisions for carriage - Loading, unloading and handling (ADR) : CV13
Hazard identification number (Kemler No.) : 90
Orange plates :



Tunnel restriction code (ADR) : -
EAC code : •3Z

- Transport by sea

Special provisions (IMDG) : 274, 335, 969
Limited quantities (IMDG) : 5 L
Excepted quantities (IMDG) : E1
Packing instructions (IMDG) : P001, LP01
Special packing provisions (IMDG) : PP1
IBC packing instructions (IMDG) : IBC03
Tank instructions (IMDG) : T4
Tank special provisions (IMDG) : TP2, TP29
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-F
Stowage category (IMDG) : A

- Air transport

PCA Excepted quantities (IATA) : E1
PCA Limited quantities (IATA) : Y964
PCA limited quantity max net quantity (IATA) : 30kgG
PCA packing instructions (IATA) : 964
PCA max net quantity (IATA) : 450L
CAO packing instructions (IATA) : 964
CAO max net quantity (IATA) : 450L
Special provisions (IATA) : A97, A158, A197
ERG code (IATA) : 9L

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions
Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances

Seveso Information : Seveso category (Dir. 2012/18/EU): dangerous for the environment

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

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SECTION 16: Other information

Full text of H- and EUH-statements:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
EUH208	Contains . May produce an allergic reaction.
EUH401	To avoid risks to human health and the environment, comply with the instructions for use.

NUFARM SDS TEMPLATE

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product