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

1.1. Product identifier

Product form	:	Mixture
Name	:	Spirox 500 EC
Trade name	:	Spirox 500 EC
Product code	:	UPL_L9778
Synonyms	:	Spiroxamine 500 g/l EC

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

1.2.1. Relevant identified uses

Main use category	:	Fungicide
Industrial/Professional use spec	:	For professional and agricultural use only
Use of the substance/mixture	:	An emulsifiable concentrate, systemic fungicide for the control of powdery mildew on the crops listed.

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

UPL South Africa (Pty) Ltd.
Sunbury Office Park (off Douglas Saunders Drive) 7
La Lucia Ridge
P.O. Box 1726, Mount Edgecombe, 4300
4019 Durban - South Africa
T +27 31 514 5600
www.upl-ltd.com/za

1.4. Emergency telephone number

Emergency number(s)	:	Griffon Poison Information Centre: 082 446 8946, Poisons Information Helpline: 0861 555 777, In case of Spillage: Spill Tech: 086 100 0366 / 083 253 6618

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to UN GHS Purple Book (Rev. 9, 2021)

Acute toxicity (oral), Category 4	H302
Acute toxicity (inhalation:dust,mist) Category 4	H332
Acute toxicity (dermal) Category 5	H313
Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 1	H318
Skin sensitisation, Category 1	H317
Reproductive toxicity, Category 2	H361d
Specific target organ toxicity — Repeated exposure, Category 2	H373
Hazardous to the aquatic environment — Acute Hazard, Category 1	H400
Hazardous to the aquatic environment — Chronic Hazard, Category 1	H410

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

Suspected of damaging fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure. Harmful if inhaled. Harmful if swallowed. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. Very toxic to aquatic life with long lasting effects.

2.2. Label elements

Classification according to UN GHS Purple Book (Rev. 9, 2021)

Hazard pictograms :

GHS05 GHS07 GHS08 GHS09

Signal word : Danger

Hazardous ingredients : Benzenesulfonic acid, mono-C10-13-alkyl derivs., compds. with ethanolamine; benzyl alcohol; Spiroxamine

Hazard statements : H302+H332 - Harmful if swallowed or if inhaled.
H313 - May be harmful in contact with skin.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
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.

Precautionary statements : P101 – If medical advise is needed, have product container or label at hand.
P102 – Keep out of reach of children
P103 – Read carefully and follow all instructions.
P203 - Obtain, read and follow all safety instructions before use.
P260 - Do not breathe dust/fume/gas/mist/vapours/spray.
P264+P265 - Wash hands, forearms and face thoroughly after handling. Do not touch eyes.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
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+P317 - IF SWALLOWED: Get medical help.
P302 + P317 - IF ON SKIN: Get medical help.
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P354 + P338 - IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P316 - IF exposed or concerned: Get emergency medical help immediately.
P317 - Get medical help.
P318- IF exposed or concerned, get medical advice.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P330 - Rinse mouth.
P333 + P317 -+ If skin irritation or rash occurs: Get medical help.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P391 - Collect spillage.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

No other hazards contribute to the classification.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to UN GHS Purple Book, Rev.9, 2021.
Spiroxamine	(CAS-No.) 118134-30-8 (EC Index-No.) 612-150-00-X	25 – 50	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Skin Sens. 1, H317 Repr. 2, H361d STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
benzyl alcohol	(CAS-No.) 100-51-6 (EC-No.) 202-859-9 (EC Index-No.) 603-057-00-5 (REACH-no) 01-2119492630-38	> 25	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation:vapour), H332 Eye Irrit. 2, H319
poly(oxy-1,2-ethanediyl), -[2,4,6-tris(1-phenylethyl)phenyl]- -hydroxy-	(CAS-No.) 70559-25-0 (EC-No.) 615-124-6	10 - 20	Aquatic Chronic 3, H412
Benzenesulfonic acid, mono-C10-13-alkyl derivs., compds. with ethanolamine	(CAS-No.) 85480-55-3 (EC-No.) 287-335-8 (REACH-no) 01-2119905842-39	10 - 20	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Remove contaminated clothing immediately and dispose of safely. Move victim out of danger zone. Place the victim in the recovery position. IF exposed or concerned: Get medical advice/attention. Call a poison center or a doctor if you feel unwell.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER/doctor. Call a poison center or a doctor if you feel unwell.

First-aid measures after skin contact : After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water and soap. If skin irritation occurs: Get medical advice/attention. Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact : Rinse immediately with plenty of water, also under the eyelids. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice and attention. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.

First-aid measures after ingestion : If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting. Get immediate medical advice and attention. Rinse mouth. Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after skin contact : Irritation. May cause an allergic skin reaction.

Symptoms/effects after eye contact : Serious damage to eyes.

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

Treat symptomatically. After gastric emptying either by induced vomiting or gastric lavage, administer an aqueous suspension of activated charcoal followed by a cathartic.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Carbon dioxide (CO2). AFFF foam. Sand. Water spray. Dry powder. Foam. Carbon dioxide.

Unsuitable extinguishing media : High volume water jet.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Non flammable.

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

Precautionary measures fire : No open flames. No smoking.

Firefighting instructions : Evacuate and limit access. Use a water spray to cool exposed surfaces and to protect fire-fighters.

Protection during firefighting : Wear suitable protective clothing. In case of inadequate ventilation wear respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

Other information : Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Clean up even minor leaks or spills, if possible, without unnecessary risk.

6.1.1. For non-emergency personnel

Protective equipment : Wear suitable protective clothing, gloves and eye or face protection. In case of insufficient ventilation, wear suitable respiratory equipment.

Emergency procedures : Ventilate spillage area. Evacuate the danger area. Provide adequate ventilation to minimize dust and/or vapour concentrations. Consult an expert. Eliminate every possible source of ignition. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Wear self-contained breathing apparatus, rubber boots and thick rubber gloves. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment. Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Prevent liquid from entering sewers, watercourses, underground or low areas. Impound and recover large spill by mixing it with inert granular solids. Collect spillage.

Methods for cleaning up : Take up liquid spill into absorbent material. Clean up any spills as soon as possible, using an absorbent material to collect it. Notify authorities if product enters sewers or public waters.

Other information : Avoid spilling the product, as this might cause falls. Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

Exposure controls/personal protection. Disposal considerations. For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	:	Handle in accordance with good industrial hygiene and safety procedures. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not allow to enter into surface water or drains. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. Do not breathe dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Avoid contact with skin and eyes.
Handling temperature	:	-10 TO 35
Hygiene measures	:	Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	:	Ground well. Use explosion-proof equipment.
Storage conditions	:	Keep out of direct sunlight. Store locked up. Store in a well-ventilated place.
Incompatible products	:	Strong acids. Strong bases. Strong oxidizing agents.
Maximum storage period	:	2 year(s)
Storage temperature	:	-10 TO 35
Storage area	:	Keep container tightly closed and in well ventilated place. Install a retention tank.
Packaging materials	:	Keep only in the original container. Keep locked up and out of reach of children.

7.3. Specific end use(s)

No additional information available

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.

Hand protection:
Wear suitable gloves resistant to chemical penetration. Nitrile rubber gloves. Wear suitable gloves resistant to chemical penetration

Eye protection:
Face protection umbrella. Chemical goggles or safety glasses. Safety glasses

Skin and body protection:
Skin protection appropriate to the conditions of use should be provided. Cotton or cotton/synthetic overalls or coveralls are normally suitable

Respiratory protection:
In case of inadequate ventilation wear respiratory protection. [In case of inadequate ventilation] wear respiratory protection.

Personal protective equipment symbol(s):

Environmental exposure controls:
Notify authorities if product enters sewers or public waters. Avoid release to the environment.

Other information:
Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Appearance	:	clear. weakly turbid.
Colour	:	Yellow-brown.
Odour	:	Aromatic.
Odour threshold	:	Not applicable
		Not applicable
pH	:	No data available
pH solution	:	9.4 (1%)
Relative evaporation rate (butylacetate=1)	:	Not applicable
Relative evaporation rate (ether=1)	:	Not applicable
Melting point	:	Not applicable
Freezing point	:	Not applicable
Boiling point	:	> 35 °C
Flash point	:	108 °C Not highly flammable.
Auto-ignition temperature	:	265 °C
Decomposition temperature	:	Not applicable
Flammability (solid, gas)	:	Not required
		Not applicable
Vapour pressure	:	Not applicable
Relative vapour density at 20 °C	:	No data available
Relative density	:	No data available
Density	:	1 g/ml (20°C)
Solubility	:	Emulsifiable in water.
Partition coefficient n-octanol/water (Log Pow)	:	Not applicable
Viscosity, kinematic	:	82 mm²/s
Viscosity, dynamic	:	82 mPa·s (20°C)
Explosive properties	:	Product is not explosive.
Oxidising properties	:	not oxidizing.
Explosive limits	:	Not applicable

9.2. Other information

Bulk density	:	Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

When exposed to heat, may decompose liberating hazardous gases. Hydrogen cyanide (hydrocyanic acid). Carbon monoxide. Nitrogen oxides (NOx).

10.2. Chemical stability

Stable under normal conditions of use.

10.3. Possibility of hazardous reactions

None under normal conditions. For further information, refer to section 10 : "Stability and Reactivity".

10.4. Conditions to avoid

Keep out of direct sunlight. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents.

10.6. Hazardous decomposition products

When heated to decomposition, emits dangerous fumes. Carbon dioxide (CO2). Carbon monoxide. Nitrogen oxides.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in UN GHS Purple Book (Rev. 9, 2021)

Acute toxicity (oral) : Harmful if swallowed or in contact with skin.
Acute toxicity (dermal) : May be harmful in contact with skin.
Acute toxicity (inhalation) : Harmful if inhaled.

Spirox 500 EC	
LD50 oral rat	500 – 1000 mg/kg
LD50 dermal rat	> 2000 mg/kg
LC50 inhalation rat (mg/l)	2.3 mg/l/4h

benzyl alcohol (100-51-6)	
LD50 oral	1230 mg/kg
LD50 dermal	2000 mg/kg

Spiroxamine (118134-30-8)	
LD50 oral rat	≈ 500 mg/kg
LD50 dermal rat	1068 mg/kg
LC50 inhalation rat (mg/l)	2 mg/l/4h

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye damage.
Respiratory or skin sensitisation : OECD 429 (LLNA)
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

Reproductive toxicity : Suspected of damaging the unborn child.

STOT-single exposure : Not classified

STOT-repeated exposure : May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified

Spirox 500 EC	
Viscosity, kinematic	82 mm²/s

SECTION 12: Ecological information

12.1. Toxicity

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

Hazardous to the aquatic environment, short-term (acute) : Very toxic to aquatic life.
Hazardous to the aquatic environment, long-term (chronic) : Very toxic to aquatic life with long lasting effects.

Spirox 500 EC	
LC50 fish	11.5 mg/l (96h Salmo gairdneri)
EC50 Daphnia	10.3 mg/l (48h Daphnia magna)
ErC50 (algae)	0.029 mg/l (72h Desmodesmus subspicatus)

benzyl alcohol (100-51-6)	
LC50 fish	460 mg/l
EC50 Daphnia	230 mg/l
EC50 72h algae (1)	770 mg/l
ErC50 (algae)	770 mg/l

Spiroxamine (118134-30-8)	
NOEC chronic fish	0.002 mg/l (230d Danio Rerio)

12.2. Persistence and degradability

benzyl alcohol (100-51-6)	
Persistence and degradability	Readily biodegradable.
Biodegradation	77 %

12.3. Bioaccumulative potential

Spirox 500 EC	
Partition coefficient n-octanol/water (Log Pow)	Not applicable

benzyl alcohol (100-51-6)	
Partition coefficient n-octanol/water (Log Pow)	1.1
Bioaccumulative potential	There is no bioaccumulation.

Spiroxamine (118134-30-8)	
Bioconcentration factor (BCF REACH)	87

12.4. Mobility in soil

Spirox 500 EC	
Surface tension	35.149 mN/m (25°C)

benzyl alcohol (100-51-6)	
Surface tension	39 mN/m (20°C)

Spiroxamine (118134-30-8)	
Mobility in soil	slight

12.5. Results of PBT and vPvB assessment

Component	
Spiroxamine (118134-30-8)	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

Regional legislation (waste) : Disposal must be done according to official regulations.

Waste treatment methods : Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point. Dispose of contents/container in accordance with licensed collector's sorting instructions.

Product/Packaging disposal recommendations : agrochemical waste containing dangerous substances.

Additional information : Do not contaminate water with the product or its container. Do not clean application equipment near surface water. Notify authorities if product enters sewers or public waters.

SECTION 14: Transport information

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

ADR	IMDG	IATA
14.1. UN number		
UN 3082	UN 3082	UN 3082
14.2. UN proper shipping name		
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.	Environmentally hazardous substance, liquid, n.o.s.
Transport document description		
UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Spiroxamine, Benzylalcohol solution), 9, III, (-)	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Spiroxamine, Benzylalcohol solution), 9, III, MARINE POLLUTANT	UN 3082 Environmentally hazardous substance, liquid, n.o.s. (Spiroxamine, Benzylalcohol solution), 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

Hazard identification number (Kemler No.) : 90

Orange plates :

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

Regulatory Information:

Relevant regulatory information regarding authorization, Safety Data Sheets, Occupational Exposure Limits, Hazardous Substances, Dangerous Goods Transport and Waste South Africa: Occupational Health and Safety Act 1993. Regulations for Hazardous Chemical Agents - 2021. Fertilizer, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act 36 of 1947). **Hazardous Substances Act,** 1973 (Act No.15 of 1973). Regulations for Hazardous Chemical Agents – 2021. SANS11014:2010. Safety Data Sheet for Chemical Products – Content and Order of Sections. SANS10206: 2020. The Handling, Storage and Disposal of Pesticides. National Road Traffic Act, 1996 (Act No. 93 of 1996). SANS 10228:2012- The identification and classification of dangerous goods for transport by road and rail modes. National Environmental Management: waste Act 59 of 2008.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Full text of H- Statement:	
Acute Tox. 5 (Dermal)	Acute toxicity (dermal), Category 5
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
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
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
H302	Harmful if swallowed.
H313	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H332	Harmful 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.

Classification and procedure used to derive the classification for the mixture according to the UN GHS Purple Book (Rev.9, 2021):		
Acute Tox. 4 (Oral)	H302	Actual experimental data
Acute Tox. 4 (Inhalation:dust,mist)	H332	Actual experimental data
Acute Tox. 4 (Dermal)	H313	Actual experimental data
Skin Irrit. 2	H315	Actual experimental data
Eye Dam. 1	H318	Actual experimental data
Skin Sens. 1	H317	Actual experimental data
Repr. 2	H361d	Actual experimental data
STOT RE 2	H373	Actual experimental data
Aquatic Acute 1	H400	Actual experimental data
Aquatic Chronic 1	H410	Actual experimental data

Safety Data Sheet (SDS), UN GHS

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.