Safety Data Sheet

Revision Date: 2022-10-17

1. Product and company identification

Product Name: Hygrophos 400

Identification: Potassium phosphite

Recommended use: Fungicide, only use as directed

Details of Supplier:

Hygrotech Properties (Pty) Ltd, 1 Gerard Braak Street, Pyramid, Pretoria, 0120

Emergency Telephone numbers:

Griffon Poison Information Centre: 082 446 8946

Hygrotech Head Office: 012 545 8000 (o/h)

2. Hazard(s) identification

Classification of the substance or mixture

This product is classified as hazardous according to the criteria in South Africa - GHS classification and labelling of chemicals – SANS10234 and the Regulations for Hazardous Chemical Agents - 2021.

GHS Classification

Hazard Class	Category	Hazard Statement Number
Serious Eye Damage/Irritation	2	H319

Label Elements

Pictograms:

Signal Word:
Warning

Hazard Statements:

Statement Number	Hazard Statement
H319	Causes serious eye irritation.

Precautionary Statements:

General -

Statement Number	Precautionary Statement
P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read carefully and follow all instruction.

Prevention -

Statement Number	Precautionary Statement
P280	Wear protective clothing.
P264 + P265	Wash hands and face thoroughly after handling.

Response -

Statement Number	Precautionary Statement
P337 + P317	If eye irritation persists: Get medical help.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Other Hazards
None known.

3. Composition/information on ingredients

Substance/mixture
Mixture.

Ingredients with Hazard Concerns (GHS)
According to UN GHS criteria.

Hazardous Component – Chemical Name	CAS Number	Weight - %	GHS Classification
Potassium phosphite	13977-65-6	30 - 60%	Serious Eye Damage/Irritation Category 2.

NOTE: The other ingredients do not cause or contrinute toward the correct GHS classification of Hygrophos 400 and are therefore, in terms of the South African Regulations for Hazardous Chemical Agents - 2021; Regulation 14(b), not listed in the table above.

4. First Aid measures

Description of First Aid measures

General advice	In case of treatment resulting from excessive exposure, provide this SDS and product label to medical personnel. Emergency personnel should wear protective clothing appropriate to the type and degree of contamination. First Aid personnel should pay attention to their own safety. Immediately remove contaminated clothing and move the affected person away from the contamination area. Keep the person warm, calm, and covered up.
Inhalation	Allow the patient to rest in a well-ventilated area. If breathing is difficult, have qualified personnel administer oxygen. If breathing has stopped, use artificial respiration to support vital functions. Remove and isolate contaminated clothing and shoes. Make sure medical personnel are aware of the substance involved and take precaution to protect them. Obtain medical attention if concerned or unwell.
Ingestion	If this product is swallowed, call a poison control centre or medical practitioner for treatment advice. If conscious, rinse mouth thoroughly with water. Never give anything by mouth to an unconscious or convulsing person. Do not induce vomiting unless directed to do so by a medical professional. Have the patient lean forward with head down to avoid breathing in of vomits if spontaneous vomiting occurs.
Skin contact	Remove all contaminated clothing and shoes. Decontaminate the affected skin area with running water under the safety shower. Minimum recommended flushing time is 15 – 20 minutes, especially if an adverse skin reaction occurs. Obtain medical attention if irritation occurs or persist. Contaminated clothing should be washed prior to re-use.
Eye contact	IMMEDIATELY rinse/flush the eyes gently with running water for at least 15 minutes keeping the eyelids apart. Cold water must be used. Check for and remove contact lenses if easy to do so. Continue with the rinsing. Prevent rubbing of the eyes. If irritation occurs or persists, obtain medical attention.

Most important symptoms/effects, acute and delayed

Serious eye irritation. Eye may water profusely.

Skin: there may be irritation and redness at the site of contact.

Indication of any immediate medical attention and special treatment needed

Notes to physician:

No specific antidote required. Treat patient symptomatically and supportively.

5. Fire-fighting measures

Extinguishing media	Small fires – use water spray, carbon dioxide, foam, or dry chemicals. Larger fires – use foam, water fog or water spray. Fire water must be contained for safe disposal. Do not use high volume water jets due to potential contamination.
Specific hazards arising from the chemical including thermal decomposition products	Product is non-flammable. When involved in a fire and exposed to extremely high temperatures, the components of this product may decompose to produce irritating vapours and hazardous compounds including phosphorous oxides.
Special protective equipment	Fire responders should wear emergency equipment including positive pressure self-contained breathing apparatus with a full-face mask. If possible, prevent runoff water from entering storm drain bodies of water or other environmentally sensitive areas.
Additional measures	Fight the fire from a maximum distance and keep containers cool by spraying with water. Act in accordance with the site's Internal Emergency Plan and the procedures for actions to be taken during and after an accident or other emergencies.

6. Accidental release measures

Personal precautions, protective equipment, and emergency procedures	In case of a release, clear the affected area and protect people. Appropriately trained personnel dressed in the prescribed personal protective equipment should respond to uncontrolled releases. Emergencies should be handled in accordance with the facility's pre-planned procedures.

	Contain the spill if it can be done without risk and clean-up immediately. Ventilate the area of the spill or leak, especially when in confined areas and do not breathe in fumes/vapours. Avoid contact of spilt material with eyes, skin and clothes and do not touch or walk through spilled material. Wear appropriate protective clothing recommended in Section 8 of the SDS.
Environmental precaution	Prevent spillage or further leakage (if safe to so) and the contamination of environmentally sensitive areas. Do not allow the spilt product to enter water courses and drains and avoid contact with soil. Report spills and releases as required to appropriate authorities if the spilt product has caused environmental pollution (sewers, water ways, or soil).
Containment and clean-up	For small spills – clean up using gloves, safety glasses and appropriate body protection. Use absorbent material from the spill kit to soak up the spill. Sweep up and place into a container for disposal to an approved landfill. For large spills - personal protective equipment should be level C: triple gloves, chemical resistant suit, and air purifying respirator with a high-efficiency particulate filter. Contain the spill using absorbent cushions/socks/pads in the spill kit. Collect the spilt product in suitable containers for proper disposal. If necessary, dike the spill to prevent release from contaminating environmentally sensitive areas.
Reference to other SDS sections	See Section 1 for emergency contact information. See Section 8 for information on appropriate personal protective equipment. See Section 13 for additional waste treatment information.

7. Handling and storage

Precautions for safe handling	Wear the protective clothing as indicated in Section 8 of this SDS. Prevent personal exposure to the product – prevent skin and eye contact. Wash hands and face thoroughly after handling the product and do not eat, drink, smoke or apply cosmetics while handling. Always use in a well-ventilated work area. Open containers slowly on a stable surface. Release any pressure build-up from the container before totally opening the lid.

	Locate emergency showers and eye-rinsing facility near the work/handling area. Maintain good normal industrial hygiene and housekeeping practices in areas where the product is used/handled. Remove contaminated clothing immediately if the product gets inside. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of work area and work clothing is recommended. Keep unprotected persons away from the area where the product is being applied.
Conditions for safe storage, including any incompatibilities	The entrance to storage facilities should be granted only to appropriately trained personnel. Keep out of reach of children, uninformed persons, and animals. Containers must always be clearly labelled and tightly closed when not in use. Store containers in a cool dry location, away from direct sunlight and sources of intense heat, or where freezing is possible. Store away from incompatible materials (see Section 10). Inspect all incoming containers before storage to ensure that containers are properly labelled and are not damaged. Empty containers should be handled with care. It is recommended to have appropriate spill control kits equipped with clean-up tools near storage areas (see Section 6). Store in accordance with national and local regulations.

8. Exposure controls/personal protection

Components with workplace control parameters – National Occupational Exposure Limits

An occupational exposure limit for Potassium hydroxide (formulation reagent) has established by the South African Department of Labour and Employment.

Component	Type	Control Parameter	Update	Basis
Potassium hydroxide	OEL- STEL/C	4 mg/m^3	2021	South African RELs*

*REL:	Recommended Exposure Limit.
OEL – STEL/C:	Occupational Exposure Limit - Short-term Exposure Limit, Ceiling Limit

Appropriate Engineering controls	Use with adequate general or mechanical exhaust ventilation to prevent inhalation of spray or mist and to maintain airborne concentration below the occupational exposure limit. Eyewash stations and safety showers should be near areas where this product is used or sprayed.

Individual protection measures	Hand: impervious chemical resistant gloves recommended for hand protection (e.g., butyl rubber, nitrile rubber, etc.). The gloves should be replaced immediately in case of damage or signs of wear. Eye/Face: safety eyewear compliant with an approved standard should be used when a risk assessment indicates this is necessary to avoid eye exposure to liquids and splashes. Safety goggles together with a face shield is recommended when a respirator is not used. Skin: impervious overalls, apron, shoes, and socks as required to prevent skin contact and contamination of personal clothing. Overalls must be buttoned to the neck and sleeves worn over the gloves. Respiratory: protection selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respiratory equipment. In operations where exposure levels are exceeded or expected to be high, an approved respirator (full face mask) with a particulate filter and an organic vapour cartridge or supplied air respirator should be used. Respirator selection and use should be based on contaminant type, form, and concentration. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.
Environmental exposure controls	In accordance with the national and local legislation for the protection of the environment, it is recommended to avoid environmental spillage or releases of both the product and its container.

9. Physical and chemical properties

Phase	Liquid
Colour	Clear
Odour	Slight acidic odour
pH (1%)	4 - 5
Density	1.3 g/cm^3
Solubility	Soluble in water
Octanol/water partition coefficient:	Not determined
Flammability	Not flammable

Other Hazard Information

None.

10. Stability and reactivity

Reactivity:	The product is not reactive under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Chemical stability:	Hazardous polymerization will not occur. Stable under normal ambient conditions of use, storage, and transport.
Conditions to avoid:	Storage without good ventilation and exposing to excessive heat.
Incompatible materials:	Oxidisers.
Hazardous decomposition products:	Does not decompose when used for intended uses. Could decompose under fire or during burning, and at high temperatures releasing oxides of phosphorous.

11. Toxicological information

Information on likely routes of exposure

The product can be absorbed into the body by inhalation of its aerosol and by skin/eye contact.

Information on toxicological effects

Hygrophos 400 is of low acute toxicity.

Assessment of acute toxicity:

Experimental toxicological test data is not available for the product. Assessment of acute toxicity is based on the active ingredient (Potassium phosphite).

Product/ingredient Name	**Dose Acute -**	**Species**	**Test Result**
Potassium phosphite	>2 000 mg/kg	Rat	LD_{50} Oral
Potassium phosphite	>5 000 mg/kg	Rat	LD_{50} Dermal
Potassium phosphite	>5.05mg/L	Rat	LC_{50} Inhalation

Irritation Dermal/Skin and Eyes:	Assessment of irritation effects (skin/eyes): Based on available data, the classification criteria are met for serious eye irritation. Potassium Phosphite: Eye contact may result in redness, pain, or severe eye irritation.
Respiratory/Skin Sensitization:	Assessment of sensitization: Based on available data, the classification criteria are not met.
Germ Cell Mutagenicity:	Assessment of mutagenicity: Based on available data, the classification criteria are not met.
Carcinogenicity:	Assessment of carcinogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity and Developmental toxicity:	Assessment of reproduction toxicity: Based on available data, the classification criteria are not met.
Specific target organ toxicity (single exposure):	Assessment of STOT (single): Based on available data, the classification criteria are not met.
Repeated dose toxicity and Specific target organ toxicity (repeated exposure):	Assessment of repeated dose toxicity: Based on available data, the classification criteria are not met.
Aspiration Hazard:	Assessment of repeated dose toxicity: Based on available data, the classification criteria are not met.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

None known.

12. Ecological information

Ecotoxicity

The product is of low toxicity to aquatic systems.

The product will not enter the environment under normal use if used as indicated on the label. Care should however be taken to avoid any additional release, for example through inappropriate disposal.

No eco-toxicological data is available for the formulated product. This ecological assessment is based on data available for Potassium phosphite (as phosphonic acid).

Ingredient	Species and Genus	Exposure (hours/days)	Result in fresh water
Potassium phosphite	Crustacea (Daphnia magna)	48h	Acute EC_{50}: >118 mg/L
Potassium phosphite	Fish (Oncorhynchus mykiss)	96h	Acute EC_{50}: >118 mg/L
Potassium phosphite	Algae (Scenedesmus subspicatus)	96h	Chronic NOEC growth: 146.7 mg/L

Other Environmental and Adverse Effects:

No specific data available on the product.

13. Disposal information

Waste handling and disposal methods:	Rinse empty container 3 times with a volume of water equal to one tenth of the volume of the container and add to the spray tank. Avoid and minimize the generation of waste. Dispose product related waste in accordance with all local regulations and prevent the contamination of water, food, or feed by storage or disposal of the waste. Waste product or empty containers must not be disposed of as part of general waste.
Disposal of packaging:	The product and its container must always be disposed of in a safe manner. Empty containers and offer for recycling if an available option. Recondition if appropriate, or puncture/flatten and dispose of in a hazardous waste landfill, or by other procedures approved by the local authorities.

14. Transport information

The product is not classified for the transport of Dangerous Goods purposes.

15. Regulatory information

Safety, health, and environmental regulations specific for the product in question

Hazard symbol	
Classification:	Xi – Irritant.
Risk phrases:	R36: Irritating to eyes.

Key to Abbreviations

AND	European Provisions concerning the International Carraige od Dangerous Goods by inland Waterways
ADR	The European Agreement concerning the International Carraige of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
CAS Number	Chemical Abstracts Service Number
COD	Chemical Oxygen Demand
GHS	Globally Harmonised System of Classification and Labelling of Chemicals
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
IMDG	International Maritime Dangerous Goods
Log_{Pow}	Logarithm of the octanol/water partition coefficient
LD_{50}	Lethal Dose 50
LC_{50}	Lethal Concentration 50
RID	The Regulations concerning the International Carraige of Dangerous Goods by Rail
SDS	Safety Data Sheet
STOT	SpecificTarget Organ Toxicity
TWA	Time Weighted Average
UN	United Nations

No known specific country national and/or local regulations applicable to the product (including its ingredients). A summary of country specific general laws/regulations are supplied below.

Country Specific Legal Requirements

Country	Requirements
South Africa	**Registration Requirements:** Fertilizer, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act 36 of 1947). **Pesticide Handling, Storage and Disposal Safety:** SANS10206: 2020. **Safety Data Sheet and Occupational Exposure Limit Requirements:** Regulations for Hazardous Chemical Agents – 2021 – SA Occupational Health and Safety Act. SANS11014:2010. **Control of and handling of poisonous/hazardous and non-poisonous/non-hazardous substances/chemicals in workplaces: Hazardous Substances Act,** 1973 (Act No.15 of 1973). Occupational Health and Safety Act No. 85 of 1993.

16. Other information

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Prepared by:	Hygrotech Sustainable Solutions

Notice to the reader

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END OF SAFETY DATA SHEET