Surefire Stellar Fungicide
PCT Holdings Pty Ltd

Chemwatch Hazard Alert Code: **2**

Chemwatch: **6977671**
Version No: **2.1.1.1**
Safety Data Sheet according to WHS and ADG requirements

Issue Date: **01/04/2021**
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S.GHS.AUS.EN

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

Product Identifier

Product name	Surefire Stellar Fungicide
Chemical Name	Not Applicable
Synonyms	APVMA Approval no: 66821
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains azoxystrobin)
Chemical formula	Not Applicable
Other means of identification	Not Available

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

Relevant identified uses	Fungicide for the control of various diseases of turf as per the Directions for Use. Fungicide. Strobilurin fungicides (Qo inhibitors; QoI; enol ethers) interfere with respiration in plant pathogenic fungi. The site of action of these compounds is located in the mitochondrial respiration pathway (they act at the quinol outer binding site of the cytochrome bc1 complex). As a result, they are potent inhibitors of fungal spore germination and mycelial growth. This family of fungicides have a high level of activity against fungal pathogens within the Ascomycete, Deuteromycete, Basidiomycete and Oomycete classes. Pests controlled by the active fungicide include grape and curcubit powdery mildew, apple scab and powdery mildew, peanut leafspot and brown patch of turfgrasses. Strobilurins, in common with oudemansins and myxothiazols all share the same action (suppression of cell respiration of fungi in the bc1-complex). They also manifest other biological activities that are not always coupled with inhibition of respiration. The 9-methoxystrobilurin family was found to exhibit potent cytostatic activity toward human-derived tumor cell lines in addition to the originally reported antifungal activity. As an example, 9-methoxystrobilurin A and K inhibited the growth of HeLa S3 cell at very low concentration (the IC50 value reached 8.5 nM) without showing any significant cytotoxity. 9-Methoxystrobilurins K, L and strobilurin E exhibit interesting biological activity among them remarkable cytostatic activity toward human Burkitt´s lymphoma derived cell lines or strong antifungal activities toward several typical fungi by inhibiting a mitochondrial respiration pathway The strobilurins and oudemansins are produced by a number of saprotrophic higher fungal species. These include the ascomycete Bolinia (Camarops) lutea, a basidiomycete from the family Crepidotaceae (Crepidotus fulvotomentosus), and several members of the basidiomycete family Tricholomataceae from the genera Oudemansiella, Xerula (formerly a subgenus of Oudemansiella), and Strobilurus (Pseudohiatula) Fungicide Resistance Action Committee - FRAC Code 11 Respiration inhibitor (fungicide) Code C3 Target complex III: cytochrome bc1 (ubiquinol oxidase at Qo site (cyt b gene): Group: QoI fungicides (quinone outside inhibitors) as methoxy-acrylates, methoxy-acetamides, methoxy-carbamates, oximino-acetates, oximino-acetamides, oxazolidine-diones, dihydro-diones, imidazolinones, benzyl-carbamates) High risk resistance - Cross resistance shown between all members of the QoI group: Resistance known in various fungal species. Target site mutations in cyt b gene (G143A, F129L) and additional mechanisms. A fungal respiration inhibitor: Several plant fungicides act by inhibiting components of the respiratory chain. Although the importance of mitochondrial function in fungal pathogenesis has been documented, the conservation of the respiratory machinery in eukaryotes raises toxicity concerns for drug development. However various studies have demonstrated the divergence of fungal respiratory chain components from those of the human host. Due to the connection between mitochondrial function and other cell processes such and ergosterol synthesis and cell wall maintenance, respiration inhibitors have the potential to enhance the effects of current antifungals. The respiratory chain has been proposed as an attractive target for the development of new therapies to tackle human fungal pathogens. This arises from the presence of fungal-specific electron transport chain components and links between respiration and the control of virulence traits in several pathogenic species. However, as the physiological roles of mitochondria remain largely undetermined with respect to pathogenesis, its value as a potential new drug target remains to be determined. The use of respiration inhibitors as fungicides is well developed but has been hampered by the emergence of rapid resistance to current inhibitors. In addition, recent data suggest that adaptation of the human fungal pathogen, Candida albicans, to respiration inhibitors can enhance virulence traits such as yeast-to-hypha transition and cell wall organisation. Most fungal pathogens possess a classical electron transport chain (ETC) consisting of Complexes I-IV, in addition to a cyanide-insensitive alternative oxidase (AOX). The notable exception to this being Candida glabrata which, like Saccharomyces cerevisiae, does not contain a multi-subunit Complex I or an AOX enzyme activity. Evidence for a third “parallel” ETC pathway has been described in Candida parapsilosis and C. albicans which represents approximately 10% of total respiration capacity. Several pathogenic fungi depend on oxidative phosphorylation for virulence. For example, respiration deficiency leads to attenuated virulence in the fungal pathogens C. albicans C. glabrata and Aspergillus fumigatus. The links between respiration and virulence are not well understood but may include the energy requirement for adaptation to the host environment, the involvement of respiration in cellular remodelling processes such as morphogenesis or the role of mitochondria in stress signalling. For example, high ATP levels resulting from respiratory activity have been shown to be crucial for C. albicans yeast cells to switch to hyphal growth via Ras1/cAMP/PKA signalling. In addition, increased ATP from respiration has been shown to be important for morphogenesis during the catabolism of morphogenic amino acids, and is an important feature of escape of C. albicans from macrophages. The use of respiratory chain inhibitors can replicate the in vitro growth defects of respiration-deficient mutants. For example, in C. albicans, inhibitors such as Antimycin A and cyanide lead to inhibition of growth, and increased oxidative stress . Similarly, phenolics that inhibit mitochondrial function inhibit the growth of A. fumigatus These observations suggest that a pharmacological approach to inhibition of respiration may prove effective as an approach to treating fungal infection. Complex I inhibition Complex I (NADH:ubiquinone oxidoreductase) is present in most fungal pathogens (although it is absent in some yeasts such as S. cerevisiae and C. glabrata). The importance of Complex I regulatory proteins in C. albicans as well as subunits of the complex itself to be fungal specific, has been demonstrated. Deletion of these proteins leads to deficiencies in respiration and virulence, making them attractive drug targets. The Complex I subunits Nuo1 and Nuo2 are conserved in several fungal pathogens including other Candida species, A. fumigatus and Cryptococcus neoformans. Dysfunction of Complex I is one of the main sources of mitochondrial ROS accumulation, which can promote fungal cell death. Therefore, inhibitors of fungal Complex I have the potential to have both a fungistatic effect, by limiting ATP production, as well as a fungicidal activity via increased ROS levels. Complex II inhibition

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	Complex II, succinate:ubiquinone oxidoreductase, transfers succinate-derived electrons directly to the ubiquinone pool of the respiratory chain and not to soluble NAD+ intermediates. Its activity connects respiration to the TCA cycle, which supplies intermediates for biosynthesis of macromolecules in addition to its role in supporting respiration. Succinate dehydrogenase inhibitors are a fast-growing class of fungicides against plant fungal pathogens, which act by binding the (Qp) ubiquinone binding site. he role of Complex II in the virulence of human fungal pathogens is not well understood, and thus its inhibition has not yet been explored as an antifungal therapy. However, there is evidence that Complex II function is important for morphogenesis. Complex III inhibition Complex III, the cytochrome bc1 complex, transfers electrons from the ubiquinol pool to cytochrome c. Along with Complex I, Complex III is a major source of mitochondrial ROS accumulation. Inhibitors of Complex III may bind to the ubiquinol oxidation (Qo) or ubiquinone reduction (Qi) site. QoI fungicides inhibit mitochondrial respiration in plant pathogenic fungi by binding to the Qo site of Complex III. Although effective, resistance to QoI fungicides is a growing problem, mediated by both acquisition of mutations in the cytochrome b gene as well as the increased activity of AOX enzymes. Inhibition of Complex III through use of ubiquinone analogues is also an attractive strategy, as suitable compounds have the potential to inhibit the activities of both Complex III and AOX, leading to complete inhibition of respiration. Complex IV inhibition Complex IV (cytochrome c oxidase) is the terminal oxidase of the classical ETC, reducing oxygen to water. It belongs to the heme-copper oxidase superfamily and in S. cerevisiae, it consists of 11 subunits. The conservation of Complex IV between mammals and fungi has made it less attractive as an antifungal target. However, it has long been known that Complex IV of microbes is susceptible to inhibition by nitric oxide (NO) and in recent years, the applications of NO against pathogenic fungi have been an active area of research. NO binds the oxygen-binding site, and can either be reversible and competitive with oxygen, or irreversible, with higher NO– and lower oxygen concentrations favouring the latter. Due to its vasodilation effect, NO may not be suitable for systemic fungal infections, unless specific targeting and controlled release systems can be developed. In addition, achieving a sustained high level of NO- given its very short half-life in vivo - and effective targeting of NO donors to organs affected by deep-seated fungal infections poses a considerable challenge. Targeting alternative oxidase function. In addition to the classical ETC, many pathogenic fungi possess a cyanide-insensitive alternative pathway (cyanide-insensitive alternative oxidase (AOX), not found in mammals, which permits respiration when the classical chain is inhibited. AOX activity is not coupled to the generation of a proton gradient across the mitochondrial membrane, and thus alternate respiration produces significantly less ATP than classical oxidative phosphorylation. This suggests that AOX-based respiration does not have a key role in energy production but permits respiration under conditions of classical chain inhibition. Although alternative respiration is energetically less favourable, it allows respiration to continue upon inhibition of the classical electron transport system, thus maintaining essential metabolic functions of the mitochondrial compartment and supporting viability. Therefore, a combination of classical- and alternative respiratory pathway inhibitors may be the most effective antifungal strategy and limit the development of resistance. The importance of AOX in morphogenesis and resistance to oxidative stress has been demonstrated in several fungal pathogens, including A. fumigatus, C. neoformans and Paracoccidioides brasiliensis. However, despite these important functions, reports suggest that AOX is dispensable for virulence in some fungal pathogens, including C. albicans and A. fumigatus. Therefore, AOX inhibitors may not be universally successful as antifungals, at least not as a monotherapy. It is likely that inhibition of AOX could be effective in combination with classical ETC inhibitors or antifungals which induce oxidative stress, although this has not yet been tested in vivo due to a lack of suitable fungal and highly specific AOX inhibitors. Duvenage, L., Munro, C.A. & Gourlay, C.W. The potential of respiration inhibition as a new approach to combat human fungal pathogens. Curr Genet 65, 1347–1353 (2019). http://doi.org/10.1007/s00294-019-01001-w Use according to manufacturer's directions.

Details of the supplier of the safety data sheet

Registered company name	**PCT Holdings Pty Ltd**
Address	1/74 Murdoch Circuit Acacia Ridge QLD 4110 Australia
Telephone	1800 630 877
Fax	Not Available
Website	Not Available
Email	Not Available

Emergency telephone number

Association / Organisation	**Poison Information centre**
Emergency telephone numbers	13 1126
Other emergency telephone numbers	Not Available

SECTION 2 Hazards identification

Classification of the substance or mixture

Poisons Schedule	S5
Classification [1]	Skin Corrosion/Irritation Category 2, Skin Sensitizer Category 1, Acute Toxicity (Inhalation) Category 4, Chronic Aquatic Hazard Category 2
Legend:	*1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI*

Label elements

Hazard pictogram(s)	
Signal word	**Warning**

Hazard statement(s)

H315	Causes skin irritation.

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H317	May cause an allergic skin reaction.
H332	Harmful if inhaled.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statement(s) Prevention

P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P261	Avoid breathing mist/vapours/spray.
P273	Avoid release to the environment.
P272	Contaminated work clothing should not be allowed out of the workplace.

Precautionary statement(s) Response

P302+P352	IF ON SKIN: Wash with plenty of water.
P312	Call a POISON CENTER/doctor/... if you feel unwell.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P391	Collect spillage.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
131860-33-8	10-30	azoxystrobin
Not Available		(250 g/L)
2634-33-5	<1	1,2-benzisothiazoline-3-one
Not Available	30-60	Ingredients determined not to be hazardous

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: ▸ Wash out immediately with fresh running water. ▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▸ Seek medical attention without delay; if pain persists or recurs seek medical attention. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin contact occurs: ▸ Immediately remove all contaminated clothing, including footwear. ▸ Flush skin and hair with running water (and soap if available). ▸ Seek medical attention in event of irritation.
Inhalation	▸ If fumes or combustion products are inhaled remove from contaminated area. ▸ Lay patient down. Keep warm and rested. ▸ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▸ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▸ Transport to hospital, or doctor.
Ingestion	▸ If swallowed do **NOT** induce vomiting. ▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▸ Observe the patient carefully. ▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▸ Seek medical advice.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Firefighting measures

Extinguishing media

▸ Foam.

Continued...

- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

Special hazards arising from the substrate or mixture

Fire Incompatibility	‣ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Advice for firefighters

Fire Fighting	‣ Alert Fire Brigade and tell them location and nature of hazard. ‣ Wear breathing apparatus plus protective gloves in the event of a fire. ‣ Prevent, by any means available, spillage from entering drains or water courses. ‣ Use fire fighting procedures suitable for surrounding area. ‣ **DO NOT** approach containers suspected to be hot. ‣ Cool fire exposed containers with water spray from a protected location. ‣ If safe to do so, remove containers from path of fire. ‣ Equipment should be thoroughly decontaminated after use.
Fire/Explosion Hazard	‣ The material is not readily combustible under normal conditions. ‣ However, it will break down under fire conditions and the organic component may burn. ‣ Not considered to be a significant fire risk. ‣ Heat may cause expansion or decomposition with violent rupture of containers. ‣ Decomposes on heating and may produce toxic fumes of carbon monoxide (CO). ‣ May emit acrid smoke. Other decomposition products include: carbon dioxide (CO_2) nitrogen oxides (NOx) sulfur oxides (SOx) other pyrolysis products typical of burning organic material.
HAZCHEM	•3Z

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	Environmental hazard - contain spillage. ‣ Clean up all spills immediately. ‣ Avoid breathing vapours and contact with skin and eyes. ‣ Control personal contact with the substance, by using protective equipment. ‣ Contain and absorb spill with sand, earth, inert material or vermiculite. ‣ Wipe up. ‣ Place in a suitable, labelled container for waste disposal.
Major Spills	Environmental hazard - contain spillage. ‣ Clear area of personnel and move upwind. ‣ Alert Fire Brigade and tell them location and nature of hazard. ‣ May be violently or explosively reactive. ‣ Wear breathing apparatus plus protective gloves. ‣ Prevent, by any means available, spillage from entering drains or water courses ‣ No smoking, naked lights or ignition sources. ‣ Increase ventilation. ‣ Stop leak if safe to do so. ‣ Water spray or fog may be used to disperse / absorb vapour. ‣ Absorb or cover spill with sand, earth, inert materials or vermiculite. ‣ If safe, damaged cans should be placed in a container outdoors, away from ignition sources, until pressure has dissipated. ‣ Undamaged cans should be gathered and stowed safely. ‣ Collect residues and seal in labelled drums for disposal.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	‣ **DO NOT** allow clothing wet with material to stay in contact with skin ‣ Avoid all personal contact, including inhalation. ‣ Wear protective clothing when risk of exposure occurs. ‣ Use in a well-ventilated area. ‣ Avoid contact with moisture. ‣ Avoid contact with incompatible materials. ‣ When handling, **DO NOT** eat, drink or smoke. ‣ Keep containers securely sealed when not in use. ‣ Avoid physical damage to containers. ‣ Always wash hands with soap and water after handling. ‣ Work clothes should be laundered separately. Launder contaminated clothing before re-use. ‣ Use good occupational work practice. ‣ Observe manufacturer's storage and handling recommendations contained within this SDS. ‣ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

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Other information	▸ Store in original containers. ▸ Keep containers securely sealed. ▸ Store in a cool, dry, well-ventilated area. ▸ Store away from incompatible materials and foodstuff containers. ▸ Protect containers against physical damage and check regularly for leaks. ▸ Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ Polyethylene or polypropylene container. ▸ Packing as recommended by manufacturer. ▸ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	3-Methoxy-prop-2-enoic acid (or amide) unit is present in many naturally occurring biologically active substances such as strobilurins (mucidines), 9-methoxy-strobilurins, oudemansins, “folines”, “mitra, rhyncophylline, corynox”-derivatives and some other types of compounds, generally bearing terminal methoxygroup (no ethoxy or carbethoxy group in all compounds is presented). From another point of view, the unique triene moiety includes two-electron rich and acid-sensitive methyl enolethers as common substructures. Enolethers are a large group of organic compounds having oxygen atom conjugated through lone electron pairs with the double bond. Thus the double bond becomes more reactive. Even more reactive is the double bond when it is activated in beta-position with one or two electron-withdrawing groups, thus giving rise to “activated enolethers”. In the latter compounds the alkoxygroup can, under very mild conditions, be replaced by suitable nucleophile in nucleophilic vinylic substitution running with inversion of configuration, as compared to other types of nucleophilic vinylic substitutions running with retention of configuration. ▸ Avoid reaction with oxidising agents

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
Surefire Stellar Fungicide	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
azoxystrobin	Not Available	Not Available
1,2-benzisothiazoline-3-one	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
azoxystrobin	E	≤ 0.01 mg/m³
1,2-benzisothiazoline-3-one	E	≤ 0.01 mg/m³
Notes:	*Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.*	

Exposure controls

Appropriate engineering controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
The basic types of engineering controls are:
Process controls which involve changing the way a job activity or process is done to reduce the risk.
Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.
Employers may need to use multiple types of controls to prevent employee overexposure.

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use

Continued...

	4: Large hood or large air mass in motion 4: Small hood-local control only Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.
Personal protection	
Eye and face protection	▸ Safety glasses with side shields. ▸ Chemical goggles. ▸ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]
Skin protection	See Hand protection below
Hands/feet protection	▸ Wear chemical protective gloves, e.g. PVC. ▸ Wear safety footwear or safety gumboots, e.g. Rubber **NOTE:** ▸ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. ▸ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: · frequency and duration of contact, · chemical resistance of glove material, · glove thickness and · dexterity Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent). · When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. · When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. · Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. · Contaminated gloves should be replaced. As defined in ASTM F-739-96 in any application, gloves are rated as: · Excellent when breakthrough time > 480 min · Good when breakthrough time > 20 min · Fair when breakthrough time < 20 min · Poor when glove material degrades For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times. Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers' technical data should always be taken into account to ensure selection of the most appropriate glove for the task. Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example: · Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of. · Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. ▸ Butyl rubber gloves · Nitrile rubber gloves (Note: Nitric acid penetrates nitrile gloves in a few minutes.)
Body protection	See Other protection below
Other protection	▸ Overalls. ▸ P.V.C apron. ▸ Barrier cream. ▸ Skin cleansing cream. ▸ Eye wash unit.

Respiratory protection

Type A Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Required minimum protection factor	Maximum gas/vapour concentration present in air p.p.m. (by volume)	Half-face Respirator	Full-Face Respirator
up to 10	1000	A-AUS / Class1	-

Continued...

up to 50	1000	-	A-AUS / Class 1
up to 50	5000	Airline *	-
up to 100	5000	-	A-2
up to 100	10000	-	A-3
100+			Airline**

* - Continuous Flow ** - Continuous-flow or positive pressure demand
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Off white to beige liquid with mild characteristic odour; miscible with water.

Physical state	Liquid	**Relative density (Agua= 1)**	1.09
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not Available
pH (as supplied)	7-8	**Decomposition temperature**	Not Available
Melting point / freezing point (°C)	<0	**Viscosity (cSt)**	Not Available
Initial boiling point and boiling range (°C)	100	**Molecular weight (g/mol)**	Not Applicable
Flash point (°C)	Not Applicable	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Not Applicable	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not Applicable	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	Not Applicable	**Volatile Component (%vol)**	Not Available
Vapour pressure (kPa)	2.37	**Gas group**	Not Available
Solubility in water	Miscible	**pH as a solution (1%)**	Not Available
Vapour density (Air = 1)	Not Available	**VOC g/L**	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	- Unstable in the presence of incompatible materials. - Product is considered stable. - Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful.
Ingestion	Accidental ingestion of the material may be damaging to the health of the individual.
Skin Contact	This material can cause inflammation of the skin on contact in some persons. The material may accentuate any pre-existing dermatitis condition Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
Eye	There is some evidence to suggest that this material can cause eye irritation and damage in some persons.
Chronic	Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Studies show that strobilurin fungicides (for example, trifloxystrobin) are toxic to the liver and kidneys at high doses. They are not known to cause cancer or mutations and animal testing shows that embryos and foetuses are not at risk of its effects before birth.

Continued...

Surefire Stellar Fungicide	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
azoxystrobin	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >2000 mg/kg[2]	Not Available
	Oral(Rat) LD50; >5000 mg/kg[2]	
1,2-benzisothiazoline-3-one	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >2000 mg/kg[1]	Eye: adverse effect observed (irreversible damage)[1]
	Oral(Rat) LD50; 454 mg/kg[1]	Skin: no adverse effect observed (not irritating)[1]
Legend:	*1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances*	

AZOXYSTROBIN	4.7 mg/l (<15 um) * Not an irritant * Not a sensitiser * Lowest relevant NOAEL 10 mg/kg/d (90 / 1y gavage dog) Genotoxicity: weakly clastogenic in vitro; no genotoxicity in vivo Target organ: liver, common bile duct No evidence of oncogenic potential * Review Report for the Active Substance; European Commission Health and Consumer Protection Directorate-General In general, Azoxystrobin (both the Technical and the EUP) is of low to very low acute toxicity. The Technical is also of low to very low subchronic and chronic toxicity and is not likely to be a carcinogen. **Azoxystrobin technical** has been extensively tested on laboratory mammals and in test-tube systems. No evidence was obtained of mutagenic, neurotoxic, carcinogenic, teratogenic or reproductive effects
1,2-BENZISOTHIAZOLINE-3-ONE	The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested. In light of potential adverse effects, and to ensure a harmonised risk assessment and management, the EU regulatory framework for biocides has been established with the objective of ensuring a high level of protection of human and animal health and the environment. To this aim, it is required that risk assessment of biocidal products is carried out before they can be placed on the market. A central element in the risk assessment of the biocidal products are the utilization instructions that defines the dosage, application method and amount of applications and thus the exposure of humans and the environment to the biocidal substance. Humans may be exposed to biocidal products in different ways in both occupational and domestic settings. Many biocidal products are intended for industrial sectors or professional uses only, whereas other biocidal products are commonly available for private use by non-professional users. In addition, potential exposure of non-users of biocidal products (i.e. the general public) may occur indirectly via the environment, for example through drinking water, the food chain, as well as through atmospheric and residential exposure. Particular attention should be paid to the exposure of vulnerable sub-populations, such as the elderly, pregnant women, and children. Also pets and other domestic animals can be exposed indirectly following the application of biocidal products. Furthermore, exposure to biocides may vary in terms of route (inhalation, dermal contact, and ingestion) and pathway (food, drinking water, residential, occupational) of exposure, level, frequency and duration. The predominant fate of the thiazole ring is oxidative ring scission catalysed by cytochrome P450 (CYP) and formation of the corresponding alpha-dicarbonyl metabolites and thioamide derivatives. The well-established toxicity associated with thioamides and thioureas has led to the speculation that thiazole toxicity is attributed to ring scission yielding the corresponding thioamide metabolite. Ring opening has also been observed in benzothiazoles. For instance, benzothiazole itself is converted to S-methylmercaptoaniline. No significant acute toxicological data identified in literature search. **Acute toxicity** data show that 1,2-benzisothiazoline-3-one (BIT) is moderately toxic by the oral and dermal routes but that this chemical is a severe eye irritant. Irritation to the skin from acute data show only mild skin irritation , but repeated dermal application indicated a more significant skin irritation response. The neurotoxicity observed in the rat acute oral toxicity study (piloerection and upward curvature of the spine at 300 mg/kg and above; decreased activity, prostration, decreased abdominal muscle tone, reduced righting reflex, and decreased rate and depth of breathing at 900 mg/kg) and the acute dermal toxicity study (upward curvature of the spine was observed in increased incidence, but this was absent after day 5 post-dose at a dose of 2000 mg/kg) were felt to be at exposures in excess of those expected from the use pattern of this pesticide and that such effects would not be observed at estimated exposure doses. **Subchronic oral toxicity** studies showed systemic effects after repeated oral administration including decreased body weight, increased incidence of forestomach hyperplasia, and non-glandular stomach lesions in rats. In dogs, the effects occurred at lower doses than in rats, and included alterations in blood chemistry (decreased plasma albumin, total protein, and alanine aminotransferase) and increased absolute liver weight. **Developmental toxicity** studies were conducted in rats with maternal effects including decreased body weight gain, decreased food consumption, and clinical toxicity signs (audible breathing, haircoat staining of the anogenital region, dry brown material around the nasal area) as well as increased mortality. Developmental effects consisted of increases in skeletal abnormalities (extra sites of ossification of skull bones, unossified sternebrae) but not external or visceral abnormalities. **Reproductive toxicity:** In a two- generation reproduction study, parental toxicity was observed at 500 ppm and was characterized by lesions in the stomach. In pups, toxic effects were reported at 1000 ppm and consisted of preputial separation in males and impaired growth and survival in both sexes. The reproduction study did not show evidence of increased susceptibility of offspring.

Acute Toxicity	✔	**Carcinogenicity**	✘
Skin Irritation/Corrosion	✔	**Reproductivity**	✘
Serious Eye Damage/Irritation	✘	**STOT - Single Exposure**	✘
Respiratory or Skin sensitisation	✔	**STOT - Repeated Exposure**	✘
Mutagenicity	✘	**Aspiration Hazard**	✘

Legend: ✘ *– Data either not available or does not fill the criteria for classification*
✔ *– Data available to make classification*

SECTION 12 Ecological information

Toxicity

Continued...

Surefire Stellar Fungicide	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	Not Available	Not Available	Not Available	Not Available	Not Available
azoxystrobin	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	EC50	48	Crustacea	0.002-0.011mg/L	4
	LC50	96	Fish	0.007-0.01mg/L	4
	EC50(ECx)	120	Algae or other aquatic plants	<0.001mg/L	4
1,2-benzisothiazoline-3-one	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	EC50	48	Crustacea	0.001mg/L	4
	LC50	96	Fish	<=0.002mg/L	4
	EC50(ECx)	48	Crustacea	0.001mg/L	4
Legend:	*Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*				

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.
Wastes resulting from use of the product must be disposed of on site or at approved waste sites.
Environmental fate: Strobilurin is a group of fungicides that includes azoxystrobin and fluoxatrobin.
Azoxystrobin: If released to soil, azoxystrobin is expected to be less to moderately mobile and is not expected to volatilize from moist and dry soil surfaces, but is very susceptible to photolysis. Azoxystrobin is found to be moderately persistent in soil in the absence of light and is potentially mobile in coarse textured soils such as sand and loamy sand soils. If released to water, azoxystrobin is expected to adsorb to suspended solids and sediment, but is not expected to volatilize from water surfaces. The compound is susceptible to photolytic degradation in natural aquatic environments. If released to air, azoxystrobin will exist solely in the particulate-phase in the ambient atmosphere based on the model of gas/particle partitioning of semivolatile organic compounds in the atmosphere. Particulate-phase azoxystrobin will be removed from the atmosphere by wet and dry deposition.
Fluoxatrobin: If released to soil, fluoxatrobin is expected to strongly bind to soil thus it is likely to be less to moderately mobile in soil. Study shows that fluoxatrobin may persist in soil for extended period of time, but leaching of the compound into groundwater did not occur. Fluoxatrobin may potentially reach surface waters via runoff due to slow biodegradation and low mobility of the compound in soils. Furthermore, fluoxatrobin may also enter aquatic environment through spray drift, penetration of the canopy to the soil surface during application, and foliar wash-off followed by runoff.
Ecotoxicity:
For azoxystrobin: The compound is found to be of low acute and chronic toxicity to humans, birds, mammals, and bees. However, it is highly toxic to freshwater fish, freshwater invertebrates, and estuarine/marine fish; and very highly toxic to estuarine/marine invertebrates. Furthermore, azoxystrobin degradate R234886 is practically non-toxic to rainbow trout and daphnids, whereas the degradates R402173 and R401553 are slightly toxic to daphnids.
For Fluoxastrobin: Based on a risk characterization, the following hierarchy of sensitivity to fluoxastrobin exists for aquatic receptors: estuarine/marine invertebrates > freshwater invertebrates >freshwater fish. There is a high degree of uncertainty associated with the risk characterization for estuarine/marine mollusks, due to a lack of chronic toxicity data for these receptors. Furthermore, study shows that the fluoxastrobin degradates HEC7155 and HEC 7180 do not pose a concern for aquatic animals or plants. Parent fluoxastrobin does not cause environmental risk to terrestrial and aquatic plants, birds, earthworms, and honeybees.

Environmental Fate: Azoxystrobin may be released into the environment as a result of its use as fungicide.
Terrestrial Fate: If released to soil, azoxystrobin may undergo photolysis and biodegradation. Azoxystrobin was found to be moderately mobile and relatively non-persistent under actual use conditions. However, its degradates are potentially mobile and persistent thus may possibly leach into groundwater due to their low binding affinity onto soils
Aquatic Fate: Release of azoxystrobin into water system may be due to runoff. Once in water, azoxystrobin will be dissipated by adsorption to sediment and will eventually be degraded by microorganisms.
Ecotoxicity:
Avian toxicity: Toxicity test results show that azoxystrobin is practically non-toxic to birds on oral and dietary basis.
Bird acute oral LD50: bobwhite >2000 mg/kg; mallard >250 mg/kg
Bird subacute dietary LC50: bobwhite >5200 ppm; mallard >5200 ppm
Aquatic toxicity: Toxicity test results show that azoxystrobin is highly toxic to freshwater fish, freshwater invertebrates, and estuarine/marine fish, and very highly toxic to estuarine/marine invertebrates. The azoxystrobin degradate R234886 is practically non-toxic to rainbow trout and daphnids, while the degradates R402173 and R401553 may be slightly toxic to daphnids.
Fish LC50 (96h): rainbow trout 2.4 mg/l; bluegill 1.1 ppm
Daphnia magna EC50: 259 ppb
Other organisms: Toxicity test results show that azoxystrobin is practically non-toxic to worker bees and earthworm.
Bee LD50 (14d): >200 ug/bee (oral and contact)
Earthworm (Eisenia foetida) LD50 (14d): 881 mg/kg; NOEC 10 mg/kg

DO NOT discharge into sewer or waterways.
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
azoxystrobin	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation
azoxystrobin	HIGH (LogKOW = 4.7193)

Mobility in soil

Ingredient	Mobility
azoxystrobin	LOW (KOC = 6971)

SECTION 13 Disposal considerations

Waste treatment methods

Continued...

Product / Packaging disposal	▸ Containers may still present a chemical hazard/ danger when empty. ▸ Return to supplier for reuse/ recycling if possible. Otherwise: ▸ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. ▸ Where possible retain label warnings and SDS and observe all notices pertaining to the product. Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: ▸ Reduction ▸ Reuse ▸ Recycling ▸ Disposal (if all else fails) This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. ▸ **DO NOT** allow wash water from cleaning or process equipment to enter drains. ▸ It may be necessary to collect all wash water for treatment before disposal. ▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▸ Where in doubt contact the responsible authority. ▸ Recycle wherever possible or consult manufacturer for recycling options. ▸ Consult State Land Waste Authority for disposal. ▸ Bury or incinerate residue at an approved site. ▸ Recycle containers if possible, or dispose of in an authorised landfill.

SECTION 14 Transport information

Labels Required

	
Marine Pollutant	
HAZCHEM	•3Z

Land transport (ADG)

UN number	3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains azoxystrobin)
Transport hazard class(es)	Class: 9 Subrisk: Not Applicable
Packing group	III
Environmental hazard	Environmentally hazardous
Special precautions for user	Special provisions: 274 331 335 375 AU01 Limited quantity: 5 L

Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082
are not subject to this Code when transported by road or rail in;
(a) packagings;
(b) IBCs; or
(c) any other receptacle not exceeding 500 kg(L).
- Australian Special Provisions (SP AU01) - ADG Code 7th Ed.

Air transport (ICAO-IATA / DGR)

UN number	3082
UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s. * (contains azoxystrobin)
Transport hazard class(es)	ICAO/IATA Class: 9 ICAO / IATA Subrisk: Not Applicable ERG Code: 9L
Packing group	III
Environmental hazard	Environmentally hazardous
Special precautions for user	Special provisions: A97 A158 A197 A215 Cargo Only Packing Instructions: 964 Cargo Only Maximum Qty / Pack: 450 L Passenger and Cargo Packing Instructions: 964

Continued...

Passenger and Cargo Maximum Qty / Pack	450 L
Passenger and Cargo Limited Quantity Packing Instructions	Y964
Passenger and Cargo Limited Maximum Qty / Pack	30 kg G

Sea transport (IMDG-Code / GGVSee)

UN number	3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains azoxystrobin)
Transport hazard class(es)	IMDG Class: 9 IMDG Subrisk: Not Applicable
Packing group	III
Environmental hazard	Marine Pollutant
Special precautions for user	EMS Number: F-A , S-F Special provisions: 274 335 969 Limited Quantities: 5 L

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
azoxystrobin	Not Available
1,2-benzisothiazoline-3-one	Not Available

Transport in bulk in accordance with the ICG Code

Product name	Ship Type
azoxystrobin	Not Available
1,2-benzisothiazoline-3-one	Not Available

SECTION 15 Regulatory information

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

azoxystrobin is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5

1,2-benzisothiazoline-3-one is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australian Inventory of Industrial Chemicals (AIIC)

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	No (azoxystrobin)
Canada - DSL	No (azoxystrobin)
Canada - NDSL	No (azoxystrobin; 1,2-benzisothiazoline-3-one)
China - IECSC	No (azoxystrobin)
Europe - EINEC / ELINCS / NLP	No (azoxystrobin)
Japan - ENCS	No (azoxystrobin)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	No (azoxystrobin)
USA - TSCA	No (azoxystrobin)
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	No (azoxystrobin)
Legend:	*Yes = All CAS declared ingredients are on the inventory* *No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)*

SECTION 16 Other information

Revision Date	01/04/2021
Initial Date	01/04/2021

Continued...

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit。
IDLH: Immediately Dangerous to Life or Health Concentrations
ES: Exposure Standard
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index
AIIC: Australian Inventory of Industrial Chemicals
DSL: Domestic Substances List
NDSL: Non-Domestic Substances List
IECSC: Inventory of Existing Chemical Substance in China
EINECS: European INventory of Existing Commercial chemical Substances
ELINCS: European List of Notified Chemical Substances
NLP: No-Longer Polymers
ENCS: Existing and New Chemical Substances Inventory
KECI: Korea Existing Chemicals Inventory
NZIoC: New Zealand Inventory of Chemicals
PICCS: Philippine Inventory of Chemicals and Chemical Substances
TSCA: Toxic Substances Control Act
TCSI: Taiwan Chemical Substance Inventory
INSQ: Inventario Nacional de Sustancias Químicas
NCI: National Chemical Inventory
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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